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December 2, 2025

Stasia Ferbey, B.Sc.
Project Assessment Director
BC Environmental Assessment Office (EAO)

SUBJECT: **Telkwa Mining's Response to Ministry of Water, Land and Resource Stewardship (WLRS) related Fish and Fish Habitat Information Request (IR) dated 6 June 2023, (Tenas Project Master Issues Tracking Table (ITT) comment 523, and**

Office of the Wet'suwet'en ITT comments 498, 501 to 504, and 520

Dear Stasia,

Telkwa Mining Limited (Telkwa Mining; previously Telkwa Coal Limited) is submitting the attached response provided in **Enclosure 1** in fulfillment of the Environmental Assessment Office's (EAO) Information Request (IR) dated 6 June 2023, T*enas Project Information Request: Fish and Fish Habitat*, identified as Tenas Project Master Issues Tracking Table (ITT) comment 523. Telkwa Mining is also providing responses to ITT comments 498, 500 to 504, and 520 from the Office of the Wet'suet'en (OW) in both **Enclosure 2**, and **Appendix B of Enclosure 1**.

Summary

In response to EAO's IR on Fish and Fish Habitat dated June 6, 2023 (ITT comment 523), Telkwa Mining hired SLR, which is considered to be a Qualified Professional to carry out additional ground-based surveys to further the understanding of steelhead/rainbow trout spawning in the Tenas and Goathorn Creeks in 2023, 2024, and 2025.

Based on the additional work conducted in support of ITT 523, Telkwa Mining has not been able to conclusively identify steelhead spawning in the Tenas and Goathorn Creeks, however this does not rule out the possibility of both steelhead spawning, rearing, and presence downstream of the proposed Project. Telkwa Mining recommends that for the EAO effects assessment phase that a **precautionary approach** be adopted which assumes steelhead spawning habitat, and steelhead presence, in all life phases, in Tenas and Goathorn Creeks. This does not change the conclusions within the Tenas Project Environmental Assessment Application (2022), conducted by Telkwa Mining which concluded that no significant adverse effects would occur to fish and fish habitat due to the Project after mitigations are applied.

Telkwa Mining proposes that any further steelhead spawning and/or habitat data requests be addressed through the **Aquatic Effects Monitoring and Management Plan** that will be developed

as requirement of the Tenas Project ***Environmental Management Act*** (EMA) discharge authorization application, during the permitting phase of the Project, prior to construction of the Project. This plan's table of contents and workplan is to be developed collaboratively between Telkwa Mining, and Indigenous Nations, submitted to and reviewed by BC Ministry Environment and Ministry of Water Lands & Resource Stewardship to ensure that fish and fish habitats are monitored and protected during all phases of the Tenas Project.

PROJECT BACKGROUND

Telkwa Mining contracted SLR Consultants (SLR) in 2024 to prepare a draft response ("response") to ITT comments 498, 500, 501, 502, 503, 504, 520 and 523. The draft response **(Enclosure 1 and Appendix B of Enclosure 1**) was provided to the the Office of the Wet'suwet'en (OW) in November 2024 for feedback. A presentation **(Enclosure 3)** was held with OW and their consultant Skeena Fisheries Commission on January 28, 2025 on this topic to provide the opportunity for feedback and discussion. The OW provided questions related to the presentation and the responses provided in **Enclosure 4** for feedback by OW which is still outstanding

The response was also submitted to the BC Environmental Assessment Office (EAO) in March 2025 for feedback.

Telkwa Mining then received additional information from the OW on the response that was submitted in November 2024/March2025 and OW's feedback with responses are provided in **Enclosure 2**.

Comments were received from Skin Tyee First Nation Band on September 10, 202 which are provided with responses in **Enclosure 5**.

Comments were also received from WLRS on October 30, 2025 after the completion of strike action and responses have been provided to these in **Enclosure 6**.

Telkwa Mining understands that this supplemental information from the OW will inform the EAO's Effects Assessment. Telkwa Mining is committed to continuing to work with the OW to incorporate information it provides into ongoing Tenas Project development.

OFFICE OF THE WET'SUWET'EN COMMENTS

The OW has provided Telkwa Mining with the following submissions that included comments on the draft report submitted in November 2024:

- 28 February 2025 letter with the subject "*Office of the Wet'suwet'en Response to Telkwa Mining Limited's November 28, 2024, Letter re: IR Status*";

- 12 March 2025 letter with the subject "*Information Requests Regarding Impacts to Caribou and Aquatic Resources for the Tenas Coal Project*"; and
- 15 May 2025 email with the subject "*Section 25 IR Response – OW Review*".

Telkwa Mining's responses to these comments are provided in **Enclosure 2**. **Appendix B of Enclosure 1** contains the initial responses to the OW ITT comments 498 (OW-051), 500 (OW-052), 501(OW-053), 502 (OW-054), 503(OW-055), 504(OW-056), and 520(OW-045) that were provided to OW for review and feedback. Based on OW's feedback ITT comments 502(OW-054), and 520(OW-045) are closed however the other comments required additional clarification which are provided in **Enclosure 2**.

CLOSING

Telkwa Mining is submitting the enclosed information in fulfillment of the EAO's 6 June 2023 Information Request, particularly EAO's ITT comment 523 from Water, Land, and Resource Stewardship (WLRS) and OW ITT comments 498, 500, 501, 503, and 504. The intent is for this information to support the advancement of the Tenas Project into the EAO Effects Assessment Phase, and the development of the EAO's Effects Assessment Report, draft Certificate with conditions, and recommendations.

Based on the additional work conducted in support of ITT 523, Telkwa Mining has not been able to conclusively identify steelhead spawning downstream of the Project, however this does not rule out the possibility of both steelhead spawning, rearing, and presence in the downstream watercourses of the Project. Telkwa Mining recommends that for the EAO effects assessment phase that a **precautionary approach** be adopted which has steelhead spawning habitat, and steelhead in all life phases present in the Tenas and Goathorn Creeks and Telkwa and Bulkley River potentially affected by the Project. This does not change the assessment conducted by Telkwa Mining which concluded that no significant adverse effects would occur to fish and fish habitat due to the Project after mitigations are applied which includes steelhead.

Telkwa Mining proposes that any further steelhead spawning and/or habitat data requests be addressed through the **Aquatic Effects Monitoring and Management Plan** that will be developed during the permitting phase of the Project. This plan's table of contents and workplan can be developed collaboratively between Indigenous Nations, regulators, and the proponent to ensure that relevant aspects associated with steelhead spawning are captured during the various phases of the Project.

Telkwa Mining understands that the OW is completing their Assessment Process. Telkwa Mining is committed to continuing to work with the OW throughout Tenas Project development to appropriately integrate OW's supplemental information and welcomes their ongoing participation in the Tenas Project. Where additional responses are appropriate based on

engagement with OW and EAO, Telkwa Mining will provide supplemental information to both the EAO and the OW.

Sincerely,



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Cc. Jessy Chaplin, File

ENVIRONMENTAL ASSESSMENT OFFICE AND OFFICE OF THE WET'SUWET'EN INFORMATION REQUESTS

Enclosure 1: Telkwa Mining's Response to the EAO's IR ITT 523 dated June 6, 2023

Enclosure 2: Response to comments put forward by the Office of the Wet'suwet'en regarding the Tenas Coal Mine Environmental Assessment, SLR

Enclosure 3: Presentation on January 28, 2025, to OW related to Information Request on Fish and Fish Habitat, ITT 523, SLR

Enclosure 4: Response to OW questions on Presentation on January 28, 2025, to OW related to Information Request on Fish and Fish Habitat, ITT 523, SLR

Enclosure 5: Response to Skin Tyee First Nation Band comments related to Information Request on Fish and Fish Habitat, ITT 523, SLR

Enclosure 6: Response to WLRS comments related to Information Request on Fish and Fish Habitat, ITT 523, SLR

Enclosure 1

TELKWA MINING'S RESPONSE TO THE EAO'S IR ITT 523 DATED JUNE 6, 2023

Enclosure 2

RESPONSE TO COMMENTS PUT FORWARD BY THE OFFICE OF THE WET'SUWET'EN REGARDING THE TENAS COAL MINE ENVIRONMENTAL ASSESSMENT, SLR

Enclosure 3

PRESENTATION ON JANUARY 28, 2025, TO OW RELATED TO INFORMATION REQUEST ON FISH AND FISH HABITAT, ITT 523, SLR

Enclosure 4

RESPONSE TO OW QUESTIONS ON PRESENTATION ON JANUARY 28, 2025, TO OW RELATED TO INFORMATION REQUEST ON FISH AND FISH HABITAT, ITT 523, SLR

Enclosure 5

Response to Skin Tyee First Nation Band comments related to Information Request on Fish and Fish Habitat, ITT 523, SLR

Enclosure 6

RESPONSE TO WLRS COMMENTS RELATED TO INFORMATION REQUEST ON FISH AND FISH HABITAT, ITT 523, SLR

Date: January 23, 2024
Project #: 190591

To: Dan Famer, Telkwa Mining Ltd.
From: Daniel King and Alexandra Leclair
cc: Rick Palmer and Glenn Wagner
Re: BC EAO EAC Application Information Request
Response to BC Ministry of Water, Land and Resource Stewardship Information Request

1. Introduction

The BC Ministry of Water, Land and Resource Stewardship (WLRS) has requested steelhead spawning information (e.g., presence and distribution) for streams in and around the Tenas Coal Project (the Project) area. Streams of interest include Goathorn Creek, Tenas Creek, Four Creek and their potentially fish bearing tributaries. The information request pertains to the Project application for an Environmental Assessment Certificate (Telkwa Coal Limited, 2022).

Steelhead are a life-history variant of Rainbow Trout (*Oncorhynchus mykiss*) that migrate to the ocean for several years before returning to their natal streams to spawn (Mcphail, 2007). Rainbow Trout are documented in Goathorn Creek, Tenas Creek, and Four Creek, though Rainbow Trout are only found in the lowest approximately 150 metres of Four Creek. Currently, it is not known whether the Rainbow Trout present within these streams have a resident life history (i.e., entire life cycle occurs in the local system), an anadromous life history (i.e., steelhead), or a combination of both.

Palmer was retained by Telkwa Mining Limited (Telkwa Mining), formerly Telkwa Coal Ltd., to complete a reconnaissance-level field program and desktop assessment to determine whether steelhead spawn in Goathorn Creek, Tenas Creek, Four Creek, or their tributaries potentially affected by the Project. Palmer's approach included:

1. A historical data review of available fish habitat and fisheries information.
2. A Spring Spawner Survey field program to observe any adult steelhead spawning activity within the Project area.
3. A morphometric analysis and visual assessment of juvenile fish captured during a Summer Juvenile Survey field program to determine whether the captured fish were Rainbow Trout or steelhead.

The purpose of this memorandum is to present the data collected during these programs and the results of the steelhead spawning observations and analyses.

2. Methods

2.1 Historical Data Review

The objective of the historical data review was to identify previous accounts of potential steelhead spawning habitat and/or evidence of steelhead spawning or rearing activity within Tenas Creek, Goathorn Creek, Four Creek, and their associated tributaries within the Project area. The following historical datasets and reports were reviewed:

- Telkwa Coal Project Aquatic Resources Assessment (Bustard, 1985)
- Aquatic resource Baseline Studies Telkwa Coal Project (Bustard and Limnotek, 1998)
- Skeena Fish Populations and Their Habitat (Gottesfeld and Rabnett, 2007)
- Tenas Project 2017 to 2019 Baseline Report (ERM, 2019)
- HabitatWizard (B.C. Conservation Data Centre, 2023)

The locations and names of the unnamed tributaries assessed for steelhead spawning habitat and/or evidence of steelhead spawning or rearing activity are listed in **Table 1**.

Table 1. Location and names of unnamed tributaries within the Project study area assessed for steelhead spawning and rearing potential.

Stream Code[1]	Parent Stream	Watershed Code	UTM Zone	UTM Easting	UTM Northing
J250 (TN7)	Tenas Creek	061-4500-000-000-000-000	9N	616700	6052400
W151 (TN15)	Tenas Creek	057-9500-000-000-000-000	9N	615300	6050400
J251 (TN8)	Tenas Creek	061-5200-000-000-000-000	9N	616500	6052700
J248 (TN2)	Tenas Creek	061-4500-000-000-000-000	9N	618400	6054400
J249 (TN6)	Tenas Creek	061-4900-000-000-000-000	9N	618000	6052500
J247 (GT1)	Goathorn Creek	061-3800-000-000-000-000	9N	619700	6055000
Unnamed Trib North (TN11)	Tenas Creek	N/A	9N	615646.3	6051854
Unnamed Trib South (TN13)	Tenas Creek	N/A	9N	615488.9	6051201

1Code derived from sampling location during reconnaissance-level habitat assessments completed by Triton (1998). UTM = Universal Transverse Mercator. N/A = not available. Trib = Tributary. ( ) = brackets indicate naming conventions for tributary streams to Tenas Creek and Goathorn Creek used in the Project Environmental Assessment Certificate Application, Section 4.0 Environmental Effects Assessment, Chapter 6 Fish and Fish Habitat Valued Component

2.2 Spring Spawner Survey

The objectives of the Spring Spawner Survey were to: 1) visually confirm the presence and distribution of spawning steelhead within the Project area during the expected spawning period; and 2) determine whether habitat features utilized by spawning steelhead were present in the water bodies potentially affected by the Project. The Spring Spawner Survey took place May 24-25 2023, and consisted of visual surveys and habitat assessments at the sites listed in **Table 2** and shown in **Figure 1**.

Table 2. Steelhead Survey Locations, 2023.

Water Body	Site Code	UTM Zone	UTM Easting	UTM Northing
Tenas Creek	WQS01	9N	615171	6050438
	WQS02	9N	616914	6053490
	WQS05 - Tenas	9N	620615	6058133
Goathorn Creek	WQS06 – US	9N	620587	6053711
	WQS13	9N	621664	6051778
	WQS05 - Goathorn	9N	620615	6058133
Four Creek	Four Creek Trib	9N	620034	6054076
	WQS03US	9N	619235	6049989
	WQS03DS	9N	620113	6054128

2.2.1 Bank Walk Visual Survey

Bank walk visual surveys were completed at previously established water quality sites WQS01, WQS02, WQS03DS, WQS05 (Goathorn), WQS06, and WQS13 (**Figure 1**). A survey consisted of two field staff walking along the creek bank and instream when necessary, and tallying the number of observed holding, spawning, and spent steelhead as well as the number of observed steelhead redds and carcases. Surveys were conducted for approximately 100 m upstream and downstream at each site. A bank walk survey was not conducted as WQS05 (Tenas) due to low water clarity and the limited ability to visually observe steelhead spawners. A bank walk was not completed at WQS03US because of the impassible barrier to fish migration (i.e., hanging culvert) at WQS03DS, and no historical accounts of Rainbow Trout above this barrier.

2.2.2 Fish Habitat Assessment

A fish habitat assessment was completed at sites WQS01, WQS02, WQS03, and WQS13, WQS05 (Goathorn), and WQS06 (**Figure 1**). Gradient, wetted depth, substrate type, stream morphology, and presence of potential steelhead spawning habitat was measured/assessed at three transects for each site.

The field crew also assessed tributaries near each sample site for potential steelhead spawning habitat.

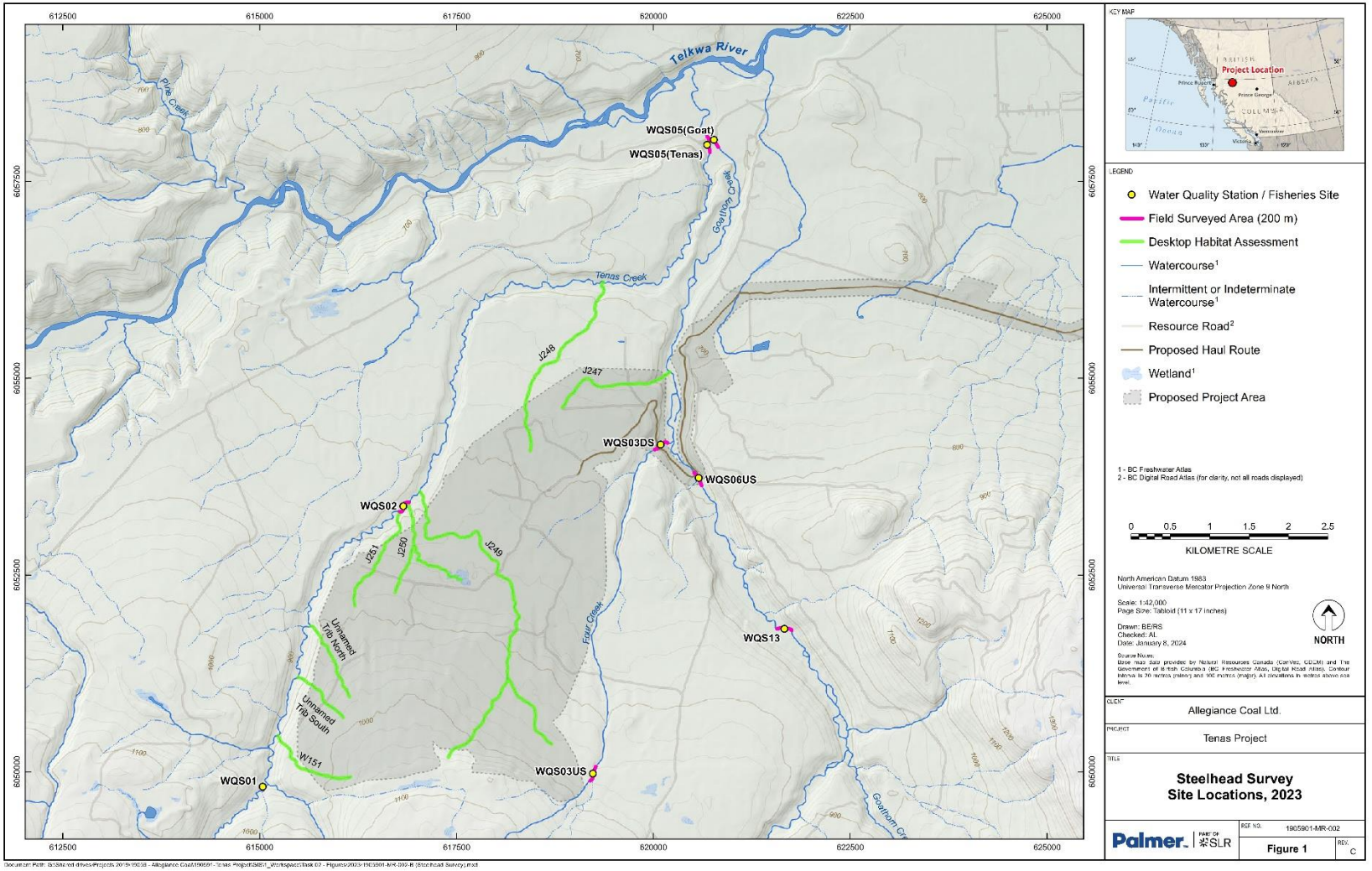


Figure 1. Steelhead Survey Locations, 2023

2.3 Summer Juvenile Survey

The objectives of the Summer Juvenile Survey were to 1) confirm whether immature Rainbow Trout (e.g., young-of-the-year, parr, or smolts) are present within the Project area, and 2) to collect morphometric data and biological samples to support the statistical analysis and potential genetic analysis described in 2.4 and 2.6. The Summer Juvenile Survey took place August 22-25 2023, and consisted of open-site electrofishing at the sites listed in **Table 2** shown in **Figure 1**.

Open-site electrofishing was conducted for approximately 100 m upstream and downstream at a total of seven sites: WQS05 (Tenas), WQS05 (Goathorn), WQS02, WQS03DS, WQS03US, WQS06US, and WQS13. All captured fish were identified to species, measured for fork length, total length, body depth, and weight. Scale samples and adipose fin clips were collected from fish large enough to provide a sample, and a subset of captured fish were photographed.

Site WQS01 (Tenas) was not visited during the Summer Juvenile Survey. This site is only accessible via helicopter and the available landing area was not large enough to safety land the helicopter model available at the time of the survey.

2.4 Morphometric Analysis

The relationship between fork length and weight of Rainbow Trout can differ between life history types, specifically during smoltification when parr transition to an anadromous life history type (i.e., smolt). At this stage, differences in body shape and body condition are conspicuous and can be used to differentiate between Rainbow Trout and steelhead (Hecht et al. 2015). Hetch et al. (2015) analysed body condition data for a multi-generational experimental population of resident Rainbow Trout and steelhead and identified ranges in body condition indicative of each life history classification. The approach for the morphometric analysis in this memo focuses on this difference and uses a combined dataset of the fish collected during the Summer Juvenile Survey and the Project's baseline (ERM 2019) to develop regression models that compare the body condition of fish captured within the Project area to the known body conditions of parr and smolt presented in Hecht et al. (2015).

The morphometric analysis consisted of the following steps: 1) calculation of body condition for Rainbow Trout captured in the Project area, 2) testing for significant differences in body condition between streams and season, 3) comparison of the body condition of Rainbow Trout captured within the Project area to the body condition of parr (resident) and smolt (anadromous) presented in Hecht et al (2015), and 4) comparison of the length-weight relationship of Rainbow Trout within the Project area to a standard weight regression for lotic Rainbow Trout (Simpkins and Hubert 1996).

All statistical analyses were completed in R version 4.3.1 (R Core Team, 2021). All figures were prepared using the ggplot2 R package (Wickham, 2016). Linear mixed effect models were completed using the lme4 R package (Bates et al., 2015), and linear regression analyses were completed using the lsmeans R package (Lenth, 2016). Statistical significance was denoted by an alpha value of ≤ 0.05.

To achieve Step 1, body condition was calculated for fish captured during the Summer Juvenile Survey and the Project's baseline study using Fulton's Condition Factor (Fulton 1904; $\boldsymbol{K = 10^5 \times W / FL3}$ …1). Combining data from the Summer Juvenile Survey and the Project's baseline study increased the sample size and provided a better seasonal representation of the population throughout the year (i.e., June, August and October).

$$K = 10^5 \times W/FL^3 \quad \textit{...1}$$

Where K = Fulton's Condition Factor, FL = fork length in millimetres and W = weight in grams.

To achieve Step 2, body condition was tested for seasonal and stream-based differences as a function of age class. When scale samples or age data were not available, a population-specific length-at-age model was used to estimate the age of fish as a function of fork length ($\boldsymbol{Age = FL20-65}$ …2). Only fish that were at the age to potentially undergo smoltification (2+ and 3+) were used in subsequent analyses.

$$Age = {}^{FL}/_{20} - 65 \quad \textit{...2}$$

Where W = weight in grams and FL = fork length in millimetres.

A linear mixed effect model with a restricted maximum likelihood (REML) was developed to assess whether age class and stream affected body condition in the captured fish. Sample month was included as a random effect. If no significant effect of age class (between age 2+ and 3+ *Rainbow Trout*) and waterbody on condition was found, the data were combined for use in step 3.

To achieve Step 3, body condition, weight, length, and age data from fish captured during the Summer Juvenile Survey and the Project's baseline study were combined with the dataset of known parr and smolt measurements presented in Hecht et al. (2015). Fish within this combined dataset were then assigned one of three life history stages – parr, smolt, or unknown. Given that the life stage of fish captured within the Project area is unknown, all fish collected from Goathorn Creek, Tenas Creek, Four Creek and the Telkwa River (sampled in 2017 and 2018 only) were assigned to "unknown".

Using this combined dataset, the linear relationship between weight and fork length of each life history stage was modeled with $\boldsymbol{log_{10} W = log_{10}\ a + log_{10}(FL) \times b}$ …3. This model allowed for a visual representation of how the body condition of the fish captured within the Project area compared to the known data presented in Hecht et al. (2015).

$$log_{10} W = log_{10}\ a + log_{10}(FL) \times b \quad \textit{...3}$$

Where W = weight in grams, FL = fork length in mm, $\log_{10}$ = base 10 logarithm, and for the linear regression coefficients a = intercept and b = slope.

Data were tested for normality and homogeneity of variance and the appropriate parametric or non-parametric statistical analyses were then used to test for condition as a function of life history stage.

To achieve Step 4, the slopes of each life history stage in the model created in Step 3 were estimated and statistically compared between Rainbow Trout life history types, and to the standard weight regression for Rainbow Trout developed by Simpkins and Hubert (1996) ($\boldsymbol{log_{10}\, W_s = -5.023 + log_{10}\,(L)\times 3.024}$ …4). Slopes were compared using least squared means and Tukey's post hoc test with the lsmeans package in R (Lenth 2016). $\boldsymbol{log_{10}\, W_s = -5.023 + log_{10}\,(L)\times 3.024}$ …4 was developed using 81 lotic populations of Rainbow Trout with a minimum sample size of n=20 and demonstrates the length-weight relationship representative of resident, stream-dwelling populations in North America (Simpkins and Hubert 1996).

$$\boldsymbol{log_{10}\, W_s = -5.023 + log_{10}\,(L) \times 3.024} \qquad \boldsymbol{...4}$$

Where W_s = standard weight and L = length in mm

The standard weight regression was included for visual reference and could not be statistically compared to Rainbow Trout data from the Project area, or Hecht et al (2015), because the data used to create the standard weight equation were unavailable following a request to the authors (Simpkins and Hubert, 1996).

2.5 Visual Assessment

The objective of the visual assessment was to identify characteristics of smolting juveniles from photographs of Rainbow Trout captured during the Summer Juvenile Survey. Smolts have highly reflective, silver skin better adapted to the pelagic marine environment due to the deposition of guanine and hypoxanthine in the skin and is highly associated with the overall tendency toward an anadromous life history (Folmar and Dickhoff 1980). This phenotypic change is in stark contrast to the dark coloured, often spotted resident life histories adapted to rocky, shallow freshwater habitats (Ando et al. 2005; Haner et al. 1995). The assessment completed under the scope of the current study was qualitative in nature, as quantitative assessments of individual reflectance require a light-controlled environment with stationary, specialized equipment, which is difficult to accomplish in a remote field setting.

Photos of nine Rainbow Trout individuals, estimated to be between age 2 and 3, were visually classified as either residents, smolts, or unknown based on the following physical characteristics:

- Shiny silver skin (smolt) vs. darkened greener skin (resident)
- Fading or fewer parr marks and melanophores (smolt) vs. clearly defined parr marks and abundant melanophore dots on skin (resident)
- Clearly elongated and slender body and caudal peduncle (smolt) vs. shorter length, deeper body, "football" shaped (resident)

Individuals that were estimated to be age 0+ or 1+ were excluded from this analysis. Photos of individuals captured during the 2017-2019 baseline study were not available at the time of the assessment.

2.6 Genetic Analysis

Adipose fin clips were collected from a subset of Rainbow Trout captured in August 2023 for potential genetic analysis of the presence or absence of the two variants of the *Omy5* chromosome: one associated

with an anadromous life history and the other with resident life history (Pearse et al. 2019). Palmer consulted with Dr. Eric B. Taylor of the UBC Department of Zoology for the application of the *Omy5* variants to the fish collected within the Project area. He was not confident in the use of this chromosomal region to identify anadromous and resident fish as it has not yet been validated for populations within British Columbia (Dr. Eric B. Taylor pers. com.). If another genetic approach is recommended by the BC EAO, the samples collected are available for further analyses upon request.

3. Results and Discussion

3.1 Historical Data Review

Historical datasets and reports including studies on fish habitat and fisheries resources were reviewed for any information relevant to addressing gaps in information in steelhead spawning and rearing within the Tenas Creek and Goathorn Creek watersheds, with a particular focus on smaller creeks that overlap the local study area.

There was no evidence of steelhead spawning and rearing in tributaries to Tenas Creek, Four Creek, and Goathorn Creek within the Project area, based on the available habitat information. All streams for which historical fish and fish habitat were assessed are shown in **Figure 1**.

3.1.1 Tenas Creek

Several first order tributaries are on the east slope of Tenas Creek and have a drainage that partially overlaps with the Project area. Some of these streams have been identified during ecosystem inventories and included in the BC Freshwater Atlas stream network, and others are unnamed tributaries without previous habitat information available. These tributary streams and their likelihood of supporting steelhead spawning and rearing were reviewed moving in an upstream direction from the confluence of Tenas Creek and Goathorn Creek. For clarity and to provide differentiation between the unnamed tributary streams, the site names used during the 1997 ecosystem inventory of the area will be used along with the watershed codes (Triton, 1998).

Creek J248 (Watershed Code 061-4500-000-000-000-000) is a first order tributary which flows north from outside of the northern extent of the Project footprint into Tenas Creek several km upstream of the confluence with Goathorn Creek. The only Project infrastructure planned in the area of this tributary is an Explosives Bin southeast of the tributary, as well as the discharge of a diversion ditch along the west side of the project to transport non-contact site water (ERM, 2019). The habitat in this stream was assessed by Triton (1998) and classified as non-fish bearing with an undefined channel, lack of suitable fish habitat, no riparian tree vegetation due to logging activities and dry at the time of the assessment in July. It is highly unlikely that steelhead spawn and rear within this stream.

Creek J249 (061-4900-000-000-000-000), Creek J250 (061-4500-000-000-000-000), and Creek J251 (061-5200-000-000-000-000) are adjacent first and second order tributary streams that drain north from within the Project footprint into the east slope of Tenas Creek. Creek J249 and J250 were classified as non-fish bearing and no fish were captured in Creek J251 (Triton, 1998). During the baseline study completed by ERM (2019), the non-fish bearing status of these streams was confirmed with no flow or defined channel

found, apart from one of the tributaries where flow went underground approximately 200 meters upstream of Tenas Creek. It is unlikely that steelhead spawn and rear with these streams.

Two unnamed first order tributary streams on the west side of the project footprint and east slope of Tenas Creek have not had detailed habitat assessments completed and the definition of the channel and consistency of the flow throughout the year is unknown. A GIS-based assessment of gradient in the lower 1-200 m of each stream indicated that the approximate gradient was 17% and 28% for the north and south tributaries, respectively (**Figure 1**). A 17% gradient is not impassible, but highly unlikely for steelhead to use the habitat within this stream as spawning and rearing habitat and 28% is considered a barrier to fish migration (Forest Practices Code of British Columbia, 1998). Bustard and Limnotek (1998) provided a high-level description of these tributaries stating that they were small drainages not accessible beyond the steep embankment along Tenas Creek. It is highly unlikely that these two unnamed tributary streams support steelhead spawning and rearing.

The last tributary, Creek W151 (057-9500-000-000-000), is a small first order tributary adjacent to project infrastructure at the southern end of the Project footprint. Within the 100-metre section assessed, no barriers were identified and the measured gradient was shallow enough to support steelhead spawning activity (Triton, 1998). However, no Rainbow Trout or steelhead have been documented in this stream, and it is unknown whether the stream remains wetted all year (Triton, 1998). The gradient in the lower reaches of the stream is estimated to be greater than 33%, which is too steep to support steelhead spawning and rearing.

3.1.2 Goathorn Creek

Creek J247 (Watershed Code 061-3800-000-000-000-000) is a first order tributary to Goathorn Creek which flows east from outside of the northeast end of the Project footprint. Creek J247 will be used for Project effluent discharge (ERM, 2019). The habitat in this stream was assessed by Triton (1998) and classified as non-fish bearing with a gradient barrier at the confluence with Goathorn Creek. No fish habitat observed at this site upstream of the barrier and the channel was dry at the time of the survey. Based on the habitat characteristics described for J247, it is highly unlikely that steelhead or Rainbow Trout use this tributary stream for spawning or rearing.

Apart from Four Creek and Creek J247, no other tributary streams that directly drain into Goathorn Creek are within the project footprint. The lower 1.3 km of Goathorn Creek downstream of the confluence with Tenas Creek has the highest quality habitat for steelhead spawning and rearing, and has shown the highest density of juvenile Rainbow Trout captured during previous studies (Bustard and Limnotek, 1998).There is relatively abundant spawning habitat compared to upstream sections, with a 2-3% gradient, riffle-pool morphology, extensive gravel sections and more pool habitat for rearing (Bustard and Limnotek, 1998).

3.1.3 Four Creek

There is an impassable barrier in Four Creek approximately 150 m upstream of the confluence with Goathorn Creek that precludes access to most of the creek by steelhead. No resident Rainbow Trout have been captured upstream of this barrier in any of the fishing effort previously completed (Bustard, 1985; Bustard and Limnotek, 1998; ERM, 2019; Triton, 1998). Therefore, the sections of Four Creek and the

tributaries to Four Creek within the Project footprint are not expected to have a direct impact on steelhead spawning and rearing.

The lower 150 m section of Four Creek is accessible to Steelhead for spawning and rearing. Juvenile Rainbow Trout have been captured previously in this section (Bustard and Limnotek, 1998).

3.2 Fisheries Information

Relatively little is known about the abundance and spawning locations of steelhead within the Telkwa River watershed compared to populations within the Bulkley River and Maurice River that have been closely studied for several decades (Gottesfeld and Rabnett, 2007). Estimates of steelhead abundance for the Telkwa system have not been determined from direct observations, though Bustard (1985) suggested steelhead spawning populations in the order of 52 in Goathorn Creek, 107 in Tenas Creek and 347 in the lower Telkwa River. These estimates were established using survival rates from parr to smolt and subsequently returning adults. However, the estimates assumed that all juvenile Rainbow Trout captured were steelhead.

There are no impassable barriers between the Bulkey River and the lower reaches of Goathorn Creek and Tenas Creek. This along with the presence of preferred spawning habitat (i.e., gravel substrate with riffle-pool morphology) lend to the assumption that steelhead spawn in these systems. However, the abundance of steelhead and the composition of resident versus migratory ecotypes of Rainbow Trout have not been determined. Assuming some Rainbow Trout captured in previous studies, or all in the case of Bustard and Limnotek (1998), are steelhead then, based on density, Tenas Creek and Goathorn Creek might be important contributors to the steelhead population within the Telkwa River watershed. Most spawning likely occurs in the lower reaches of both as indicated by Rainbow Trout fry and parr densities and habitat characteristics described by Bustard and Limnotek (1998).

Direct observations of steelhead spawning have occurred historically within the Project area. A single redd with stranded fry isolated from the mainstem creek was located during early September 1997 within Tenas Creek (Bustard and Limnotek, 1998). A small-scale radio-telemetry study conducted from 1981-1982 tagged three steelhead overwintering in the Telkwa River near Pine Creek, and at least one of the three fish subsequently spawned upstream in Tenas Creek (Bustard and Limnotek, 1998).

In addition to Tenas Creek and Goathorn Creek, juvenile Rainbow Trout have also been captured in the 150 m section of Four creek downstream of the impassable hanging culvert, though their life history type is unknown. Outside of these larger tributary streams, based on habitat and historical catch data, it is unlikely that any other tributaries that overlap with the Project area support steelhead spawning and rearing.

3.3 Spring Spawner Survey

3.3.1 Bank Walk Visual Survey

No steelhead or redds were observed at any site during the bank walk visual survey. However, due to freshest and heavy flows in Tenas Creek, Goathorn Creek, and Four Creek this year, the visibility within the creeks was low. Although no spawning steelhead were observed within Project area streams, one

season of observations during challenging conditions are not enough to conclude that adult steelhead do not return to this system.

3.3.2 Fish Habitat Assessment

Characterization of fish habitat within Tenas Creek, Goathorn Creek, and Four Creek is summarized in **Table 3**. Suitable steelhead spawning habitat was not observed during the Spring Spawner Survey at any site, with the exception to WQS13 (Goathorn). Tenas Creek had low visibility due to high sediment loads, however, the sites surveyed on this creek contained very little potential resting habitat and no spawning habitat. Four Creek at site WQS03 was narrow, shallow, and contained abundant large woody debris and windthrow.

Table 3. Fish Habitat Characterization, 2023

Site Number	Stream	Gradient (%)	Maximum Depth (m)	Substrate Type (%)				Description
				Fines	Gravel	Cobble	Boulder	
WQS01	Tenas	3.5	0.45	2.5	30	65	2.5	Cascade-glide habitat. LWD cover, mature conifer on both upslope banks, alder lining banks.
WQS02	Tenas	3.2	0.53	5	20	60	15	Cascade-glide-pool habitat. Some undercut banks and LWD, mature conifer on both upslope banks, alder lining banks.
WQS03	Four	2.2	0.12	0	70	30	0	Riffle-glide habitat. Some LWD, mature conifer on both banks. 5 DV observed.
WQS13	Goathorn	1.5	0.70	23	20	40	17	Riffle-glide habitat. LWD and mixed conifer-deciduous on both banks. Good spawning habitat.
WQS05	Goathorn	1.5	0.75	0	0	50	50	Riffle-glide habitat. Mixed conifer-deciduous on both banks.
WQS06	Goathorn	2.5	0.75	0	0	20	80	Cascade- riffle-glide habitat. Mixed conifer-deciduous on both bank, including some alder. Little spawning habitat. 1 small (~5 cm) fish observed (DV or RB).

Notes: LWD = large woody debris; RB = Rainbow Trout; DV = Dolly Varden

Suitable steelhead spawning habitat was not observed in tributaries near the surveyed sites based on the observed stream morphology and gradient. As such, habitat assessments were not completed for tributaries to Tenas Creek, Goathorn Creek, or Four Creek.

While spawning steelhead were not observed at any site during the Spring Spawner Survey, use of Tenas Creek, Goathorn Creek, and the lowest 150 m of Four Creek by spawning steelhead cannot be ruled out, especially at site WQS13 in Goathorn Creek, given that no barriers to fish migration have been identified

between WQS13 and the Telkwa River confluence. Additionally, the presence of gravel in Tenas Creek and Four Creek could provide suitable steelhead spawning habitat during years where spring flows are lower than those observed in 2023. Due to the presence of some potential spawning habitat and the potential use of Tenas Creek, Goathorn Creek, or Four Creek by spawning steelhead, it can not be concluded that steelhead do not use these creeks for spawning and rearing based on the results of the Spring Spawning Survey.

3.4 Summer Juvenile Survey

Rainbow Trout juveniles were captured at all sampled sites in Tenas Creek and Goathorn Creek. No Rainbow Trout were captured in Four Creek. Captured fish were identified to species, measured for fork length, total length, body depth, and weight. Scale samples and adipose fin clips were collected from fish large enough to provide a sample.

Photographs of captured Rainbow Trout were reviewed during a post-field desktop analysis for characteristics of a smolt life history type (e.g., chrome underside, fading parr marks, elongated body, etc.). See **3.6** for a detailed account of the results.

To further assess whether the fish captured during the Summer Juvenile Survey were Rainbow Trout or steelhead, a comprehensive statistical analysis on the measured morphometrics of captured fish was completed. See **3.5** for a detailed account of the results.

3.5 Morphometric Analysis

To achieve Step 1 of the morphometric analysis, body condition was calculated for Rainbow Trout collected during the Summer Juvenile Survey and reported in the Project's baseline study. A summary of the mean condition factor of fish captured within the Project area and for fish known to be either parr or smolts from Hecht et al (2015) can be seen in **Table 4.**

Table 4. Summary table of mean condition factor by life history type for Rainbow Trout collected within the Project area and presented in Hecht et al (2015).

Life History	Sample Size	Mean Condition Factor[1]	Standard Error of the Mean	Connected Letter Display for Significance[2]	Data Source
Smolt	10,042	1.03	0.0008	A	Hecht et al 2015
Parr	1,822	1.14	0.002	B	Hecht et al 2015
Unknown	42	1.10	0.02	B	Telkwa Coal Ltd.[3]

1 Fulton's Condition Factor K (Fulton, 1904); 2 Significant differences (i.e., alpha<0.05) in mean condition denoted by different connected letters; 3 represents Rainbow Trout data collected in streams in and around the Tenas Project area from 2017-2023.

To achieve Step 2 of the morphometrics analysis, the effect of age class and water body (e.g., Tenas Creek) on condition, with month of capture as a random factor, were tested using a REML linear mixed effect model (ERM, 2019). No significant effects of any factors tested on condition were found ($p>0.05$), and the data were pooled for subsequent analyses.

To achieve Step 3, parametric statistical tests were preformed on the combined dataset of fish captured within the Project area and presented in Hecht et al (2015). Condition values were normally distributed according to a visual assessment of normality and within the expected condition values for salmonid fish (Barnham and Baxter 1998). The assumption of homogeneity of variance was tested using Levene's Test and was not found between treatment groups ($F = 38.8$, $p<0.001$). Due to heterogeneity of variance, Welch's ANOVA was used to test for significant differences in condition among life history type (i.e., smolt, parr, and unknown) and significant differences were observed ($F = 1142.6$, $p<0.001$). A Games-Howell post hoc test was then used to determine which life history types were significantly different and condition values between fish with known smolt and parr life histories ($p<0.001$), and between fish captured within the project area with unknown life histories and smolts ($p<0.001$). There was no significant difference in condition between Rainbow Trout parr with a known resident life history and the fish captured in Telkwa River, Goathorn Creek, and Tenas Creek ($p = 0.12$). These results indicate that, based on condition factor, the age 2+ and 3+ fish captured in water bodies in and around the Project area between 2017 and 2023 were, on average, Rainbow Trout with a resident life history. A summary of the mean condition factors by life history type is presented in **Table 4** and **Figure 2.**

To achieve Step 4 of the morphometric analysis, length and weight regressions were preformed. The length and weight relationship of each life history type (i.e., smolt, parr, and unknown) was assessed as another means of visually and statistically comparing the Rainbow Trout collected within the Project area to fish with known life histories in Hecht et al (2015). The regression plots, including the standard weight regression for resident Rainbow Trout from Simpkins and Hubert (1996) are shown in **Figure 3**. Similar to the results shown in the mean condition box plot (**Figure 2**), the length-weight regression indicated that the slope for Rainbow Trout captured within the Project is closely aligned with; 1) the slope of the resident life history parr from Hecht et al (2015), and 2) the standard weight regression for resident Rainbow Trout in Simpkins and Hubert (1996) (**Figure 3**). The slope of the anadromous smolt group from Hecht et al (2015) differs visually from that of the other three regressions (**Figure 3**).

The slopes of the regression lines were compared statistically using a least-squared means estimation with Tukey Kramer post-hoc for comparison between groups. The slopes of the resident parr and anadromous smolt length-weight regressions were significantly different ($p<0.0001$). The slopes for the parr and Rainbow Trout with unknown life history type from the Project area were not significantly different ($p=0.96$). Unlike the analysis using mean body condition, the slopes of the length-weight regressions for smolts and Rainbow Trout captured within the Project area were not significantly different ($p = 0.17$). They did, however differ more than the regression slopes of fish collected within the Project area fish compared to the parr **Figure 3**. A summary of the length-weight regression slopes is presented in **Table 5**.

Table 5. Slope value comparison for linear regression of the base 10 log of weight as a function of fork length by life history type for Rainbow Trout collected within the Project area and presented in Hecht et al. (2015).

Life History Comparison	t-ratio	p-value	Data Source
Parr-Smolt	-15.2	<0.0001*	Hecht et al 2015
Parr-Unknown Project Fish	0.3	0.96	Hecht et al 2015

			Telkwa Coal Ltd.[1]
Smolt-Unknown Project Fish	1.8	0.17	Hecht et al 2015] Telkwa Coal Ltd.[1]

1 Represents Rainbow Trout data collected from streams within and around the Project area; * = significantly different (alpha < 0.05)

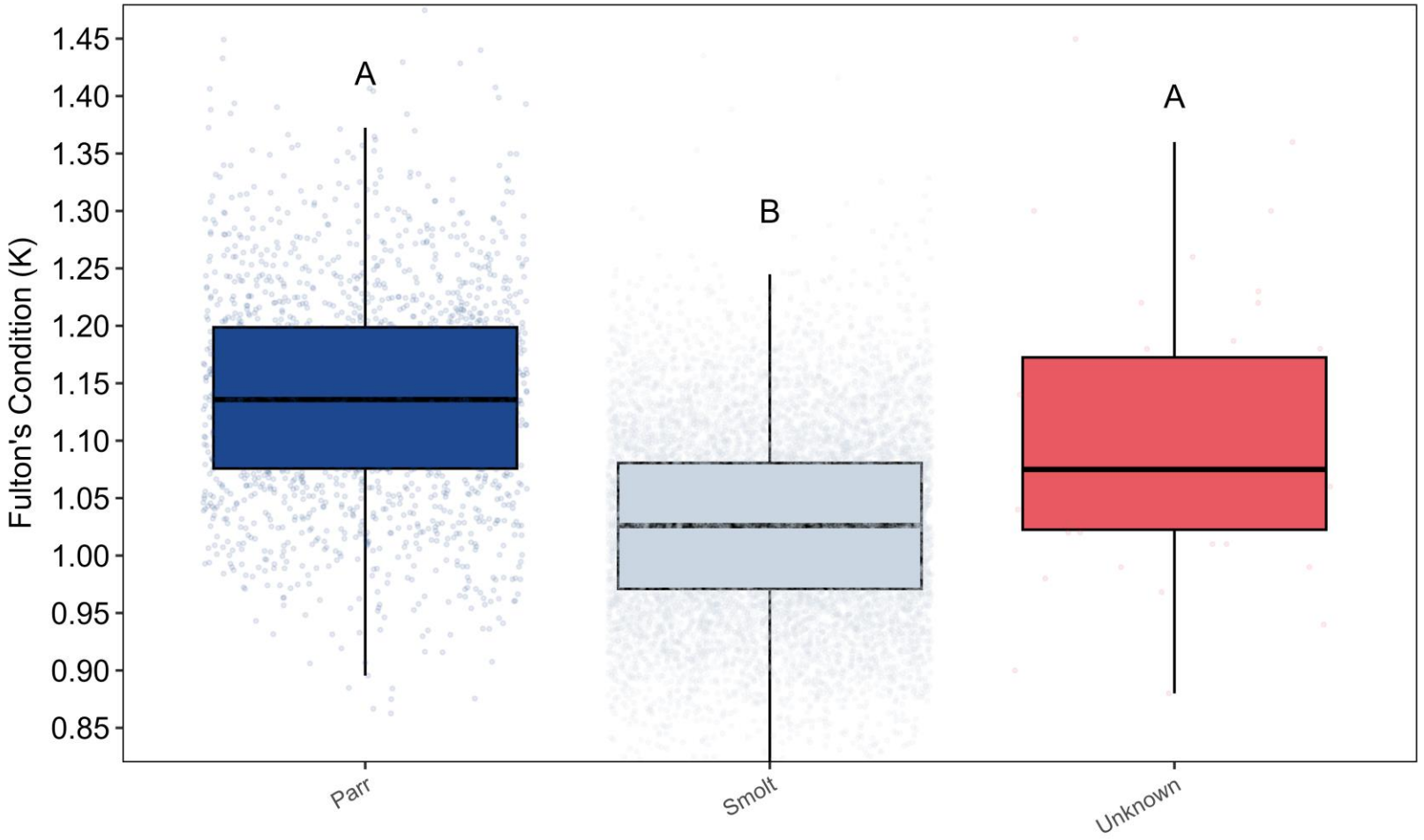


Figure 2. Fulton's Condition (K) of* age 2+ and 3+ *Oncorhynchus mykiss captured in streams in and around the Tenas Project area in the Telkwa River Watershed (■), as well as parr (■) and smolts (■) from Hecht et al 2015. Boxes = interquartile range (IQR), bolded line = mean, whiskers = 1.5*IQR, dots = individual fish. Upper case letters represent statistically significant groups (p<0.05)

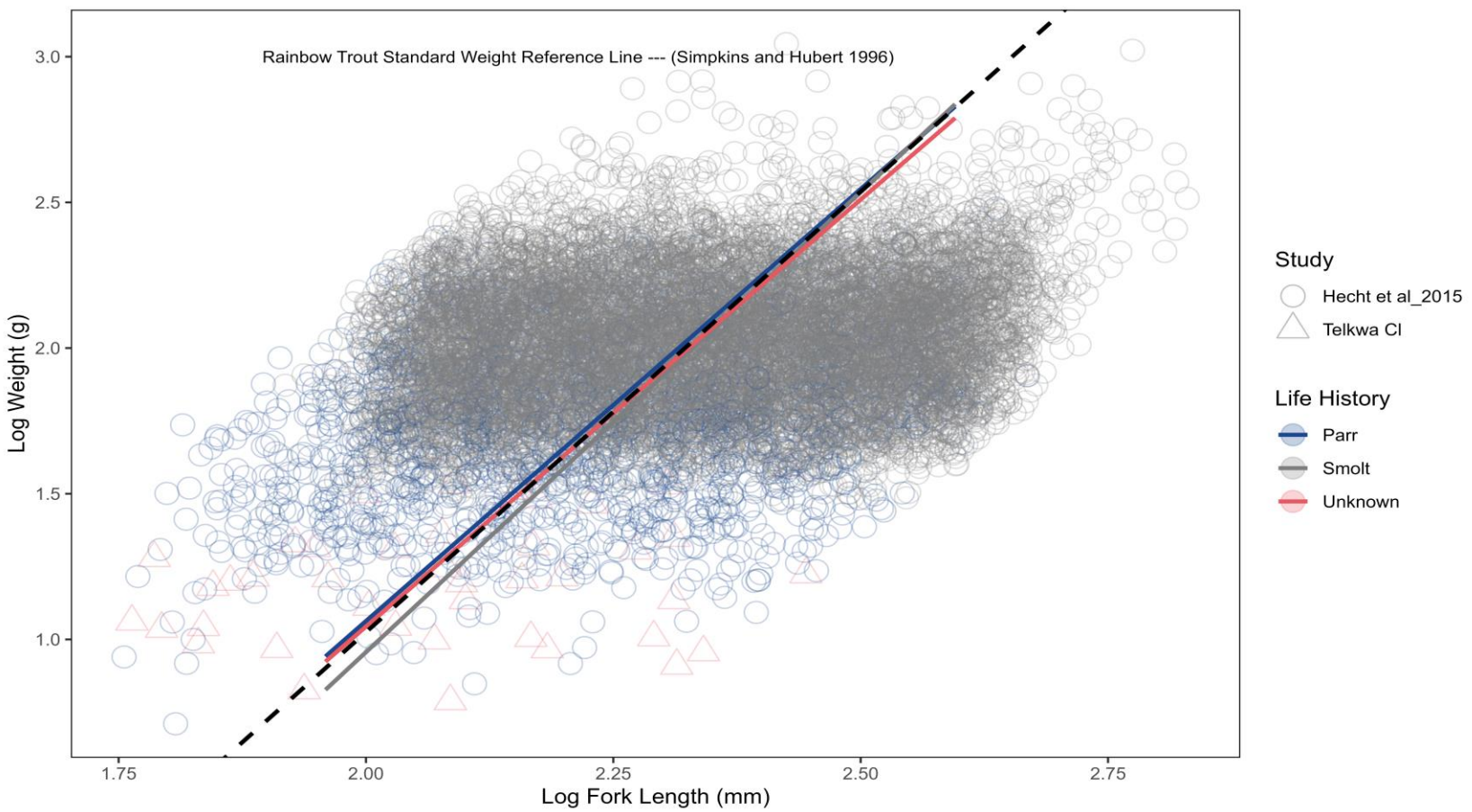


Figure 3. Linear regression of the base 10 logarithm of weight (grams) as a function of fork length (millimetres) for age 2+ and 3+ Rainbow Trout captured within the Project area (△), and as parr (○) and smolts (○) from Hecht et al (2015). Black dashed reference line (- - -) represents the standard weight regression for lotic-dwelling Rainbow Trout (Simpkins and Hubert 1996). Coloured, solid lines represent the line of best fit by life history. Individual fish points were artificially separated by jittering for improved visibility and do not represent their true position relative to the line of best fit.

In the absence of known parentage or the relative composition of a population of Rainbow Trout between anadromous and resident life histories, body condition can be used to elucidate the ecotypes of Rainbow Trout that spawn within a watershed. The results of this study indicate that on average, most Rainbow Trout captured from Telkwa River, Tenas Creek, and Goathorn Creek exhibited a length-weight relationship and body condition that might suggest a resident life history. There are limitations to this approach, whereby it is looking at the population-level metrics, when individual variation could indicate anadromy or residency, and there is potential error associated with weight measurements of fish with top-loading balances due to variable additional water weight, which can influence the condition factor value.

3.6 Visual assessment

Of the nine individuals assessed, six were classified as residents, two as smolts and one as unknown, potentially with intermediary physical characteristics. A summary of the results is presented in **Table 6** and an example of a resident and an anadromous individual of roughly the same size and age is presented in **Plate 1**.

Table 6. Visual assessment of the photographed Rainbow Trout captured within the Project area.

Site	Site Description	Water Body	Life History Type	Number of Individuals
WQS02	Approx. 7 km upstream of confluence with Goathorn Creek	Tenas Creek	Resident	5
WQS06US	Upstream of the confluence with Four Creek	Goathorn Creek	Smolt	2
			Unknown	1
WQS05 (Goathorn)	Immediately downstream of the confluence with Tenas Creek	Goathorn Creek	Resident	1

The visual assessment of skin colouration indicated that the subset of assessed Rainbow Trout captured in Tenas Creek were residents, and that steelhead smolts are likely present within Goathorn Creek during the time of sampling.

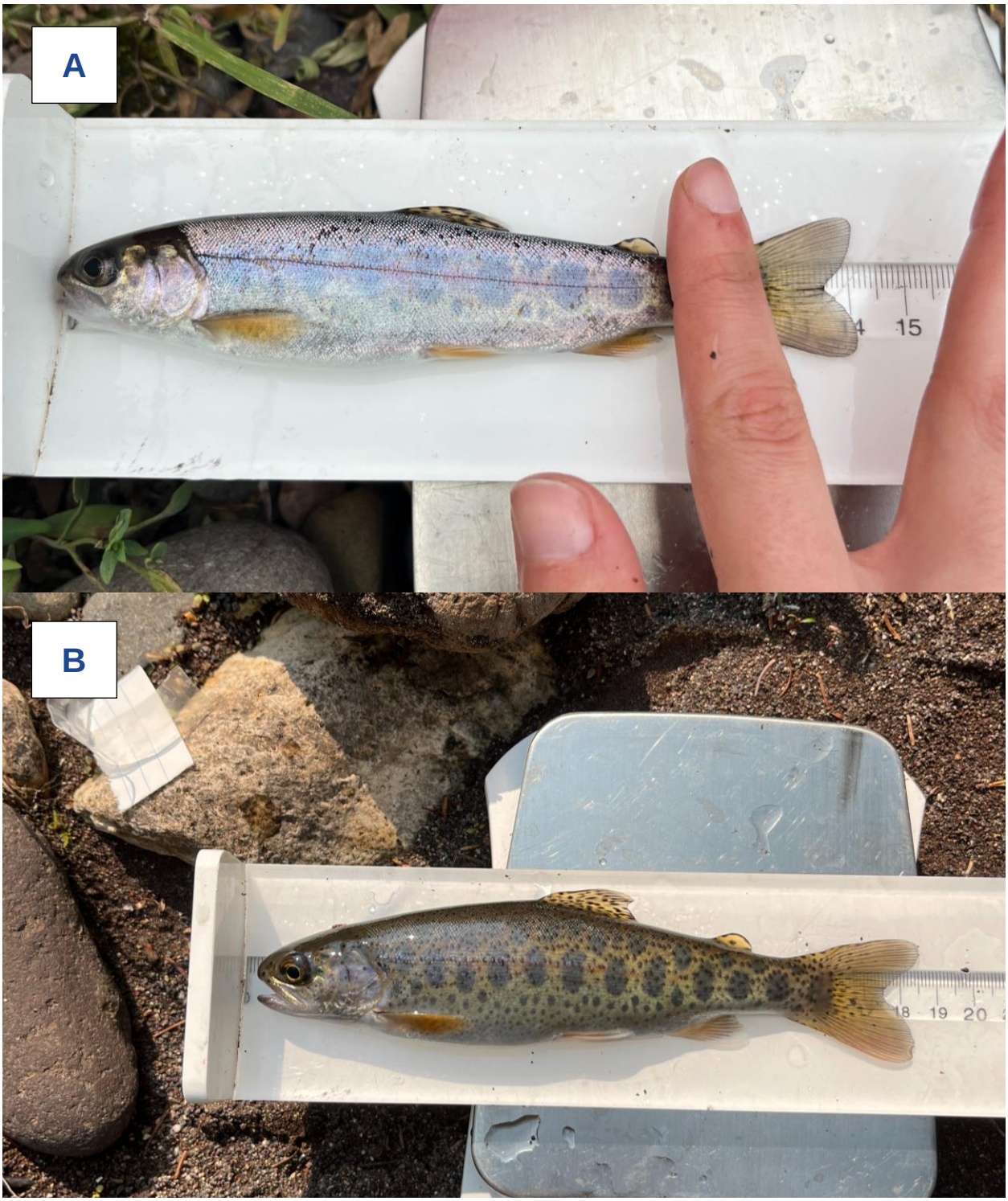


Plate 1. A) Rainbow Trout with a suspected anadromous life history (i.e., smolt). B) Individual with a resident life history.

4. Conclusion

This memorandum was prepared by Palmer on behalf of Telkwa Mining Ltd., formerly Telkwa Coal Ltd., in response to the information request submitted by BC Ministry of Water, Land and Resource Stewardship (WLRS) requesting information on steelhead spawning activity in streams within the Project area. Limited information pertaining to abundance, distribution, and spawning locations of steelhead within these creeks is available. To fill this gap, Palmer preformed a historical analysis of fish habitat information, a Spring Spawner Survey, a Summer Juvenile Survey, a morphometric analysis, a visual assessment for smolting characteristics on photographed fish, and a genetic analysis. The two surveys were performed on Goathorn Creek, Tenas Creek, and Four Creek. The results to these studies are summarized below.

- **Historical Data Review**
  - It is unlikely that steelhead use the small tributary streams in Tenas Creek within the Project area for spawning and rearing due to lack of spawning or rearing habitat.
  - Based on historical Rainbow Trout density information, the majority of steelhead spawning activity likely occurs within within the lower reaches of Tenas (i.e., from Site WQS02 downstream to the confluence with Goathorn Creek), and Goathorn Creek (i.e., from Site WQS06US downstream to the confluence with the Telkwa River) but any further information on abundance and location is unavailable.
- **Spring Spawner Survey**
  - No spawning steelhead or redds were observed in Tenas Creek, Goathorn Creek, or Four Creek. However, freshet and high flows reduced visibility within the streams.
- **Morphometric Analysis**
  - Juvenile (age 2+ and 3+) fish captured within Telkwa River, Goathorn Creek, and Tenas Creek, on average, appeared to be Rainbow Trout with a resident life history.
- **Visual Assessment**
  - Based on a qualitative visual assessment and as indicated by morphometric endpoints, most individuals exhibited characteristics that would indicate Rainbow Trout with a resident life history, with some individuals indicating characteristics of a smolt present.
- **Genetic Analysis**
  - Upon expert consultation, genetic testing was not possible because use of the *Omy5* variant for differentiation between anadromous and resident life histories has not yet been validated for populations within British Columbia.

It is unlikely that tributary streams that overlap with the planned Project footprint support steelhead spawning and rearing. No visual observations of steelhead spawning occurred in Four Creek, or throughout Tenas Creek and Goathorn Creek. However, based on the historical data review and results of morphometric, and visual assessments, it is likely that some steelhead spawning occurs in the lower reaches of Goathorn Creek (i.e., downstream of WQS06US) and Tenas Creek (i.e., downstream of WQS02), consistent with what has been reported previously.

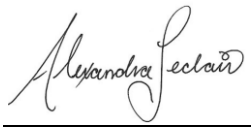
5. Certification

Prepared By:



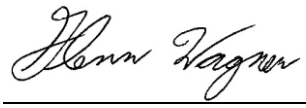
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To:	Dan Farmer	**From:**	Alexandra Leclair
Company:	Telkwa Mining Ltd.	**SLR Consulting (Canada) Ltd.**	
cc:	Jessy Chaplin	**Date:**	July 18, 2025
		Project No.	201.V24219.00000
		Revision	4

RE: Response to comments put forward by the Office of the Wet'suwet'en regarding the Tenas Coal Mine Environmental Assessment

1.0 Introduction

In 2023, Palmer, now SLR Consulting Canada Ltd. (SLR), was retained by Telkwa Mining Ltd. (Telkwa Mining) to respond to Information Requests (IRs) put forward by the Environmental Assessment Office (EAO) and the British Columbia Ministry of Land and Resource Stewardship (WLRS) as part of the adequacy review of the Tenas Project Environmental Assessment Application (the Project). These IRs pertained to the fisheries, hydrology, and hydrogeology chapters within the Project's Environmental Assessment Certificate Application (EAC Application) and were addressed through two technical memoranda prepared by Palmer and submitted to Telkwa Mining (Palmer 2024a [Appendix A], Palmer 2024b [Appendix B]). In February and March of 2025, the Office of the Wet'suwet'en (OW) provided additional comments on the EAC Application's fisheries, hydrology, and hydrogeology chapters, related to Appendices A and B prepared by Palmer.

The purpose of this memorandum is to provide Telkwa Mining with recommend responses to the OW's comments.

2.0 Responses to First Round of Comments Issued by the Office of the Wet'suwet'en

2.1 Comment OW-022

To resolve this IR, Telkwa Mining should:

- Provide all documentation and requested information related to fish spawning;
- Consider forthcoming information from OW aimed at determining whether Telkwa Mining has adequately identified and characterized all impacts related to Steelhead spawning, including the identification of waterbodies of importance to the Houses; and
- Consider forthcoming information from OW aimed at determining whether Telkwa Mining has adequately addressed any adverse impacts to fish spawning in a way that is acceptable and appropriate for OW and the Houses.

Response

All information has been provided related to fish spawning to the OW.

As requested by OW, Telkwa Mining will consider any forthcoming information on Steelhead and

fish spawning habitat including impacts from the OW and the Houses and, as appropriate, will consider how this information informs Project design, monitoring, mitigation, and adaptive management plans. t

Since the information is forthcoming, it will be considered in subsequent regulatory or Project Development processes and incorporated as appropriate in the development of the operational management plans for the Project. The management plans that will be in place for the Project aimed at protecting Fish and Fish habitat will have measures to adapt to incorporate new information at any time whether that be from OW, other Indigenous Nations, regulatory agencies and/or from ongoing monitoring.

2.2 Comment OW-035

The value of Tenas Creek and Goathorn Creek as critical steelhead spawning habitat is unclear. Telkwa Mining must identify critical steelhead spawning habitat before the potential risks of the Project to steelhead can be determined, as per the Information Requests sent by the BC EAO on June 6, 2023.

Response

The 2023 Spring Spawner Survey (Palmer 2024a, Appendix A) was conducted in accordance with accepted field standards and practices for fish habitat assessments in British Columbia. The Steelhead spawning period, however, coincides with the spring freshet, during which environmental conditions such as elevated water levels and high turbidity can reduce visibility. These conditions can result in the non-detection of fish and/or spawning habitat, even when the surveys are carried out in full compliance with provincial standards. Furthermore, in some cases, freshet conditions make sites unsafe to access, and therefore data is not able to be collected.

The absence of observed Steelhead or high-quality spawning habitat during the Spring Spawner Survey does not indicate a change in habitat; instead, it highlights the inherent limitations of conducting surveys during periods of challenging environmental conditions.

It is possible that steelhead spawning habitat exists in Goathorn Creek and Tenas Creek downstream from the Project. There are no barriers preventing fish, including steelhead, from accessing these creeks. While spawning habitat may have been recently assessed as poor in areas previously identified as suitable in the baseline study, this does not rule out the presence of spawning habitat elsewhere in the creeks, nor does it mean that steelhead are unable to spawn there. Telkwa Mining will continue to monitor and study the likelihood of steelhead spawning habitat existing within the entire portions of both Goathorn and Tenas Creeks that are downstream from the Project. It is expected that this monitoring and any additional surveys will be conditions of the EAC.

To address the OW's comment regarding the current use of Goathorn Creek, Four Creek, Tenas Creek, and Helps Creek by Steelhead, abundance surveys will be completed in 2025. This program is comprised of one representative site per reach in each creek and will utilize three-pass depletion electrofishing to calculate abundance estimates of key species. Telkwa Mining will also conduct additional habitat surveys to identify and quantify any critical spawning habitat within Goathorn Creek, Four Creek, Tenas Creek, and Helps Creek in 2025. The habitat assessments will use Fish Habitat Assessment Procedure (FHAP) surveys focused on areas which could support fish spawning.

Since 2022, new data has been added to the Water Model to the end of 2024. The updated models predict no Project-related exceedances of the chronic BC water quality guidelines for the

protection of aquatic life, including steelhead and rainbow trout, besides those parameters in baseline monitoring that are naturally exceeding these same guidelines.

As requested by OW, Telkwa Mining will discuss with OW and the regulators on the appropriate incorporation of the results of these studies regarding Steelhead to Indigenous interests or Indigenous nations into further Project design, monitoring, mitigation, and adaptive management plans. This may occur during Project Development processes and/or be incorporated as appropriate in the development of the operational management plans. The management plans that will be in place for the Project will have measures to adapt the details of the management plans to incorporate new information at any time whether that be from OW, other Indigenous Nations, regulatory agencies or from ongoing monitoring.

2.3 Comment OW-036

As inappropriate analyses were used to characterize the life histories of O. mykiss in the Project Area, the Proponent's assertion that they are on average resident rainbow trout is not supported. The Proponent has not meaningfully addressed the IR and the issue of a lack of knowledge of the extent and value of the streams as critical spawning habitat for steelhead remains outstanding. Telkwa Mining must use an appropriate analysis to characterize the life histories of Oncorhynchus mykiss in the Project Area.

Response

The concerns regarding the morphometric analysis presented in Palmer (2024a, Appendix A) to characterize the life histories of Rainbow Trout (*Oncorhynchus mykiss*) within the Project area are acknowledged. To clarify, the technical report does not assert the absence of either resident Rainbow Trout or migratory Steelhead life history types in Goathorn Creek or Tenas Creek. Rather, the analysis was presented as a supplementary approach to provide further insight into potential Steelhead presence, particularly given that the 2024 Spring Spawner Survey was constrained by site conditions. It is agreed that Steelhead spawning is possible within Goathorn Creek and Tenas Creek because there are no known barriers to fish movement between these systems and the Telkwa River.

Additional habitat surveys that focus on identifying key Steelhead and Rainbow Trout spawning habitat features will be conducted in 2025. The objective of these surveys is to identify areas of potential spawning habitat within Goathorn Creek and Tenas Creek.

As requested by OW, Telkwa Mining will consider any forthcoming information on Steelhead and fish spawning habitat including impacts from the OW and the Houses and, as appropriate, will consider how this information informs Project design, monitoring, mitigation, and adaptive management plans.

This information will be considered in subsequent Project Development processes incorporated as appropriate in the operational management plans for the Project. The management plans that will be in place for the Project aimed at protecting Fish and Fish habitat will have measures to adapt to incorporate new information at any time whether that be from OW, other Indigenous Nations, regulatory agencies and/or from ongoing monitoring.

2.4 Comment OW-051

The Project addressed EFN risk and calculated for each downstream node based on modelled discharge and project water use, but the Proponent hasn't described how/if they will manage flows to avoid high risk levels and maintain environmental flow needs (reduction of <10% of mean average by season) during operation. Please provide this information.

To help OW better assess how Telkwa Mining is protecting the Environmental Flow Needs, provide details on if and how, Telkwa Mining will manage flows to avoid high risk levels and maintain environmental flow needs (reduction of <10% of mean average by season) during operation.

Response

The Project addressed EFN risk and calculated predicted changes in average flows for each downstream node based on modelled discharges and Project water use. Additionally, Telkwa Mining will carry out robust monitoring programs to verify actual effects of the Project compared to modelled values.

Four Creek at the most northerly prediction node may have water flow reductions greater than what fish habitat can sustain based on current information. However, Telkwa Mining will continue during the permitting phase to develop a detailed application with compensation and fish habitat loss. This will be provided to the OW for review.

For other nodes associated with Four Creek the modelled flow reduction is less than the provincial guideline of 10% of where effects to fish habitat are expected. However, Telkwa Mining will have the ability to pump water from the Potable Water Storage Pond during potential low flows in summer and winter to ensure reductions due to the Project stay less than 10% to support fish habitat in Four Creek. This will be supported by a real time flow monitoring system that will be installed in the same location where the culvert that blocks fish passage upstream.

Furthermore, SLR will be completing an updated EFN Assessment approach that will include a review regarding if/how flow reductions will be managed to mitigate potential effects to aquatic environments.

As requested by OW, Telkwa Mining will discuss appropriate incorporation of the results of forthcoming information related to EFN to Indigenous interests or Indigenous nations into Project design, monitoring, mitigation, and adaptive management plans.

The information will be considered in subsequent Project Development processes or incorporated as appropriate in the operational management plans for the Project. The management plans that will be in place for the Project aimed at protecting Fish and Fish habitat will have measures to adapt to incorporate new information at any time whether that be from OW, other Indigenous Nations, regulatory agencies and/or from ongoing monitoring.

2.5 Comment OW-052

Fish abundance estimates for Tenas Creek and Goathorn Creek have not yet been reported. Telkwa Mining must provide fish abundance estimates for Tenas Creek and Goathorn Creek.

Response

It is important to clarify the distinction between fish production and fish abundance.

- **Fish production -** refers to the rate at which new fish biomass is generated within a population over time, primarily through individual growth and reproduction. It provides insight to how rapidly a population is replenishing itself.

  Fish production is a dynamic and complex parameter and is best assessed using variables that influence production – such as fish abundance and food availability.

  Food availability can be partially assessed through abundance of benthic invertebrates.



Benthic invertebrate surveys were presented in the Project's baseline report (ERM 2020).

- **Fish abundance** - represents the number of fish present in a specific area at a given time, offering a snapshot of the status of the population.

To supplement the information presented in the EAC application, an additional fish abundance monitoring program in Tenas Creek and Goathorn Creek will be completed in 2025. This program is comprised of one representative site per reach in each creek and will utilize three- pass depletion electrofishing to calculate abundance estimates of key species.

As requested by OW, Telkwa Mining will discuss appropriate incorporation of the results of forthcoming information related to fish abundance to Indigenous interests or Indigenous nations into Project design, monitoring, mitigation, and adaptive management plans.

The information will be considered in subsequent regulatory or Project Development processes and incorporated as appropriate in the operational management plans for the Project. The management plans that will be in place for the Project aimed at protecting Fish and Fish habitat will have measures to adapt to incorporate new information at any time whether that be from OW, other Indigenous Nations, regulatory agencies and/or from ongoing monitoring.

2.6 Comment OW-053

The conceptual offsetting plan does not provide sufficient information to give confidence of its feasibility and effectiveness at offsetting predicted HADDs.

To address these issues, OW recommends that Telkwa Mining conduct more studies to accurately map where and how fish habitat is being used, especially for trout species. This will include analyzing how decreasing winter baseline flows by 2.7% (Goathorn), 7.6% (Tenas) and 24% (Four) will impact those population-limiting habitats, and how exceeding water quality guidelines in Four and Tenas Creek will further degrade the available habitat.

Additionally, Telkwa Mining should explore the feasibility for an alternate location for planned offsetting activities away from the 1.5 km section of lower Goathorn Creek, which is already very high value steelhead spawning habitat. Instead, plan to improve a lower quality habitat, such as:

- Creating additional overwintering habitat and addressing connectivity issues for Four Creek to restore damage from logging and road building;
- Adding additional off-channel habitat to lower quality and heavily logged reaches of upper Goathorn Creek and its tributaries; and/or
- Addressing severe habitat impacts due to agriculture in Helps and Hubert Creeks.

Response

Department of Fisheries and Oceans (DFO) Harmful Alteration Destruction and/or Disruption (HADD) permit applications for Four Creek, Tenas Creek, and Goathorn Creek, and potential offsetting plans will be provided to OW for review and comment prior to submission to DFO.

Telkwa Mining encourages the OW to become involved in field assessments and the development of potential fish habitat offsetting options for Goathorn Creek, Helps Creek, and Four Creek during the summer 2025 field program.

Under the *Fisheries Act,* proponents are required to provide a Letter of Credit to guarantee the implementation of offsetting measures for fish habitat. The Letter of Credit is provided to Fisheries and Oceans Canada, and the proponent remains responsible until it is confirmed that the offsetting goals have been fully met.

These measure, once implemented, must be monitored over several years to ensure they are effective and sustainable.

An updated offsetting program will be shared and developed during the permitting process that will aim to:

- Create additional overwintering habitat and addressing connectivity issues for Four Creek to restore damage from logging and road building;
- Add additional off-channel habitat to lower quality and heavily logged reaches of upper Goathorn Creek and its tributaries; and/or
- Addressing severe habitat impacts due to agriculture in Helps Creek.

Any potential offsetting will be approved by DFO and designed in collaboration with the OW for indigenous knowledge and input, as well as professional biologists and professional engineers/geoscientists that are experienced in habitat restoration. This will occur during the permitting process. Part of the design process will involve conducting studies and analysis to characterize physical processes that pose a risk to offsetting (e.g., flood magnitudes, sediment transport dynamics, groundwater-surface water interactions).

As requested by OW, Telkwa Mining will discuss appropriate incorporation of the results of forthcoming information related to fish habitat offsetting to Indigenous interests or Indigenous nations into Project design, monitoring, mitigation, and adaptive management plans.

The information will be considered in subsequent regulatory or Project Development processes and incorporated as appropriate in the operational management plans for the Project. The management plans that will be in place for the Project aimed at protecting Fish and Fish habitat will have measures to adapt to incorporate new information at any time whether that be from OW, other Indigenous Nations, regulatory agencies and/or from ongoing monitoring.

2.7 Comment OW-055

There have been insufficient modern surveys to determine the importance of the Project Area to Chinook salmon, pink salmon, bull trout, coho salmon, and steelhead. Telkwa Mining must conduct sufficient additional surveys to determine the importance of the Project Area to Chinook salmon, pink salmon, bull trout, coho salmon, and steelhead.

Response

The comment raised regarding the apparent discrepancies between historical and current fish community data within the Project area is acknowledged. While it is true that Chinook Salmon (*Oncorhynchus tshawtscha*), Pink Salmon (*Oncorhynchus gorbuscha*), and Bull Trout (*Salvelinus confluentus*) were not observed during recent surveys, this absence should not be interpreted as definitive evidence of a shift in community composition or the loss of these species from the system.

These species are anadromous which means that their presence in freshwater systems is typically limited to specific life stages – primarily adult spawning migrations. The timing and frequency of these migrations can vary significantly by species and watershed. For example, Pink Salmon exhibit a strict two-year spawning cycle, meaning that surveys conducted in off- cycle years would not detect their presence. Similarly, spawning runs can be missed if surveys do not align precisely with the timing of fish migration and spawning activity. Therefore, the lack of recent observations is more likely attributed to survey timing and interannual variability rather than a true absence of these species.

There are no known barriers between the Telkwa River, Goathorn Creek, and Tenas Creek that would prevent fish passage. Therefore, it remains reasonable that these systems continue to provide accessible habitat for anadromous species, including Steelhead (*Oncorhynchus mykiss*), Bull Trout, Chinook Salmon, and Pink Salmon.

It is understood that additional data is being requested to further characterize the presence and habitat use of fall-spawning salmonids. Even though the data in the Application is sufficient for the EA process, Telkwa Mining has planned a targeted fall spawner survey program in 2025. This program will include systematic bank walks throughout the spawning window for Chinook Salmon, Pink Salmon, and Bull Trout. Site selection for these surveys will be informed by the results of the proposed summer habitat assessments, ensuring that efforts are focused on areas with the highest potential for spawning activity.

It is important to note that Steelhead spawning occurs in the spring and will therefore require a separate survey. However, given the low success rate of previous spawning surveys, Telkwa Mining believes it is more appropriate that a spawning habitat survey be conducted instead.

As requested by OW, Telkwa Mining will discuss appropriate incorporation of the results of forthcoming information related to modern fish surveys to Indigenous interests or Indigenous nations into Project design, monitoring, mitigation, and adaptive management plans.

The information will be considered in subsequent regulatory or Project Development processes and incorporated as appropriate in the operational management plans for the Project. The management plans that will be in place for the Project aimed at protecting Fish and Fish habitat will have measures to adapt to incorporate new information at any time whether that be from OW, other Indigenous Nations, regulatory agencies and/or from ongoing monitoring.

2.8 Comment OW-056

Steelhead critical spawning habitat has not been identified.

Response

The Steelhead Memorandum (Palmer 2024a, Appendix A) concludes that Steelhead spawning likely occurs in the lower reaches of both Goathorn Creek and Tenas Creek. This also aligns with previously reported data within the Application from Bustard et. al. The concerns raised regarding the analysis presented in Palmer (2024a, Appendix A) are acknowledged and it is important to note that the report does not assert the absence of either life history type within these systems. It is maintained that the presence of Steelhead in Goathorn Creek and Tenas Creek should be assumed, given the absence of barriers to fish passage from the Telkwa River into these creeks.

To supplement the current information and data and to respond to the OW's request to identify areas of potential Steelhead spawning habitat with in Goathorn Creek and Tenas Creek, additional spawner surveys that focus on identifying key Steelhead and Rainbow Trout spawning habitat features will be conducted in 2025.

As requested by OW, Telkwa Mining will discuss appropriate incorporation of the results of forthcoming information related to steelhead critical spawning habitat to Indigenous interests or Indigenous nations into Project design, monitoring, mitigation, and adaptive management plans.

The information will be considered in subsequent regulatory or Project Development processes and incorporated as appropriate in the operational management plans for the Project. The management plans that will be in place for the Project aimed at protecting Fish and Fish habitat will have measures to adapt to incorporate new information at any time whether that be from OW, other Indigenous Nations, regulatory agencies and/or from ongoing monitoring.

2.9 Comment OW-109

Conduct sufficient additional surveys to determine the importance of the Project Area to Chinook salmon, pink salmon, bull trout, coho salmon, and steelhead.

Response

The comment raised regarding the apparent discrepancies between historical and current fish community data within the Project area is acknowledged. While it is true that Chinook Salmon, Pink Salmon, and Bull Trout were not observed during recent surveys, this absence should not be interpreted as definitive evidence of a shift in community composition or the loss of these species from the system.

These species are anadromous which means that their presence in freshwater systems is typically limited to specific life stages – primarily adult spawning migrations. The timing and frequency of these migrations can vary significantly by species and watershed. For example, Pink Salmon exhibit a strict two-year spawning cycle, meaning that surveys conducted in off- cycle years would not detect their presence. Similarly, spawning runs can be missed if surveys do not align precisely with the timing of fish migration and spawning activity. Therefore, the lack of recent observations is more likely attributed to survey timing and interannual variability rather than a true absence of these species.

There are no known barriers between the Telkwa River, Goathorn Creek, and Tenas Creek that would prevent fish passage. Therefore, it remains reasonable that these systems continue to provide accessible habitat for anadromous species, including Steelhead, Bull Trout, Chinook Salmon, and Pink Salmon.

It is understood that additional data is being requested to further characterize the presence and habitat use of fall-spawning salmonids. Even though the data in the Application is sufficient for the EA process, Telkwa Mining has planned a targeted fall spawner survey program in 2025. This program will include systematic bank walks throughout the spawning window for Chinook Salmon, Pink Salmon, and Bull Trout. Site selection for these surveys will be informed by the results of the proposed summer habitat assessments, ensuring that efforts are focused on areas with the highest potential for spawning activity.

It is important to note that Steelhead spawning occurs in the spring and will therefore require a separate survey. However, given the low success rate of previous spawning surveys, Telkwa Mining it is more appropriate that a spawning habitat survey be conducted instead.

As requested by OW, Telkwa Mining will discuss appropriate incorporation of the results of forthcoming information related to modern fish surveys to Indigenous interests or Indigenous nations into Project design, monitoring, mitigation, and adaptive management plans.

The information will be considered in subsequent regulatory or Project Development processes and incorporated as appropriate in the operational management plans for the Project. The management plans that will be in place for the Project aimed at protecting Fish and Fish habitat will have measures to adapt to incorporate new information at any time whether that be from OW, other Indigenous Nations, regulatory agencies and/or from ongoing monitoring.

2.10 Comment OW-110

Identify critical steelhead spawning habitat before the potential risks of the project to steelhead can be determined, as per the Information Requests sent by the BC EAO on June 6, 2023;

- Telkwa Mining must use an appropriate analysis to characterize the life histories of

Oncorhynchus mykiss in the Project Area; the Proponent's assertion that they are, on average, a resident rainbow trout population is not supported.

Response

The Steelhead Memorandum (Palmer 2024a, Appendix A) concludes that Steelhead spawning likely occurs in the lower reaches of both Goathorn Creek and Tenas Creek. This also aligns with previously reported data within the Application from Bustard. The concerns raised regarding the analysis presented in Palmer (2024a, Appendix A) are acknowledged and it is important to note that the report does not assert the absence of either life history type within these systems. It is maintained that the presence of Steelhead in Goathorn Creek and Tenas Creek should be assumed, given the absence of barriers to fish passage from the Telkwa River into these creeks.

To supplement the current information and data and to respond to the OW's request to identify areas of potential Steelhead spawning habitat with in Goathorn Creek and Tenas Creek, additional spawner surveys that focus on identifying key Steelhead and Rainbow Trout spawning habitat features will be conducted in 2025.

As requested by OW, Telkwa Mining will discuss appropriate incorporation of the results of forthcoming information related to steelhead critical spawning habitat to Indigenous interests or Indigenous nations into Project design, monitoring, mitigation, and adaptive management plans.

The information will be considered in subsequent regulatory or Project Development processes and incorporated as appropriate in the operational management plans for the Project. The management plans that will be in place for the Project aimed at protecting Fish and Fish habitat will have measures to adapt to incorporate new information at any time whether that be from OW, other Indigenous Nations, regulatory agencies and/or from ongoing monitoring.

2.11 Comment OW-111

Provide fish abundance estimates for Tenas Creek and Goathorn Creek.

Response

It is important to clarify the distinction between fish production and fish abundance.

- **Fish production** refers to the rate at which new fish biomass is generated within a population over time, primarily through individual growth and reproduction. It provides insight to how rapidly a population is replenishing itself.

  Fish production is a dynamic and complex parameter and is best assessed using variables that influence production, such as fish abundance and food availability.

  Food availability can be partially assessed through abundance of benthic invertebrates. Benthic invertebrate surveys were presented in the Project's baseline report (ERM 2020).

- **Fish abundance** represents the number of fish present in a specific area at a given time, offering a snapshot of the status of the population.

To supplement the information presented in the EAC application, an additional fish abundance monitoring program in Tenas Creek and Goathorn Creek will be completed in 2025. This program is comprised of one representative site per reach in each creek and will utilize three- pass depletion electrofishing to calculate abundance estimates of key species.

As requested by OW, Telkwa Mining will discuss appropriate incorporation of the results of forthcoming information related to fish abundance to Indigenous interests or Indigenous nations

into Project design, monitoring, mitigation, and adaptive management plans.

The information will be considered in subsequent regulatory or Project Development processes and incorporated as appropriate in the operational management plans for the Project. The management plans that will be in place for the Project aimed at protecting Fish and Fish habitat will have measures to adapt to incorporate new information at any time whether that be from OW, other Indigenous Nations, regulatory agencies and/or from ongoing monitoring.

2.12 Comment OW-112

With direction from OW and the Houses, conduct more studies to accurately map where and how fish habitat is being used, especially for trout species:

- This will include analyzing how decreasing winter baseline flows by 2.7% (Goathorn), 7.6% (Tenas) and 24% (Four) will impact those population-limiting habitats, and how exceeding water quality guidelines in Four and Tenas Creek will further degrade the available habitat;
- The estimates of altered habitat identified through these analyses should be listed as a HADD and included in expanded mitigation and offsetting plans.

Response

The comment raised regarding the apparent discrepancies between historical and current fish community data within the Project area is acknowledged. While it is true that Chinook Salmon, Pink Salmon, and Bull Trout were not observed during recent surveys, this absence should not be interpreted as definitive evidence of a shift in community composition or the loss of these species from the system.

These species are anadromous which means that their presence in freshwater systems is typically limited to specific life stages – primarily adult spawning migrations. The timing and frequency of these migrations can vary significantly by species and watershed. For example, Pink Salmon exhibit a strict two-year spawning cycle, meaning that surveys conducted in off- cycle years would not detect their presence. Similarly, spawning runs can be missed if surveys do not align precisely with the timing of fish migration and spawning activity. Therefore, the lack of recent observations is more likely attributed to survey timing and interannual variability rather than a true absence of these species.

There are no known barriers between the Telkwa River, Goathorn Creek, and Tenas Creek that would prevent fish passage. Therefore, it remains reasonable that these systems continue to provide accessible habitat for anadromous species, including Steelhead, Bull Trout, Chinook Salmon, and Pink Salmon.

It is understood that additional data is being requested to further characterize the presence and habitat use of fall-spawning salmonids. Even though the data in the Application is sufficient for the EA process, Telkwa Mining has planned a targeted fall spawner survey program in 2025. This program will include systematic bank walks throughout the spawning window for Chinook Salmon, Pink Salmon, and Bull Trout. Site selection for these surveys will be informed by the results of the proposed summer habitat assessments, ensuring that efforts are focused on areas with the highest potential for spawning activity.

It is important to note that Steelhead spawning occurs in the spring and will therefore require a separate survey. However, given the low success rate of previous spawning surveys, Telkwa Mining it is more appropriate that a spawning habitat survey be conducted instead.

As requested by OW, Telkwa Mining will discuss appropriate incorporation of the results of

forthcoming information related to modern fish surveys to Indigenous interests or Indigenous nations into Project design, monitoring, mitigation, and adaptive management plans.

The information will be considered in subsequent regulatory or Project Development processes and incorporated as appropriate in the operational management plans for the Project. The management plans that will be in place for the Project aimed at protecting Fish and Fish habitat will have measures to adapt to incorporate new information at any time whether that be from OW, other Indigenous Nations, regulatory agencies and/or from ongoing monitoring.

2.13 Comment OW-113

With direction from OW and the Houses, explore the feasibility for an alternate location for planned offsetting activities away from the 1.5 km section of lower Goathorn Creek, which is already very high value steelhead spawning habitat. Instead, plan to improve a lower quality habitat, such as:

- Creating additional overwintering habitat and addressing connectivity issues for Four Creek to restore damage from logging and road building;
- Adding additional off-channel habitat to lower quality and heavily logged reaches of upper Goathorn Creek and its tributaries;
- Addressing severe habitat impacts due to agriculture in Helps and Hubert Creeks.

Response

The offsetting options proposed by the OW will be reviewed and further evaluated. Telkwa Mining would like to work through options with OW during the DFO permitting process.

There is concern with restoring connectivity between Four Creek and Goathorn Creek as it could potentially impact the isolated, self-sustaining population of Dolly Varden (*Salvelinus malma*) upstream of the hanging culvert in Four Creek. The Rainbow Trout from Goathorn Creek could aggressively displace the Dolly Varden population present in Four Creek (Nonis et al. 2023, Taniguchi et al. 2000).

As requested by OW, Telkwa Mining will discuss appropriate incorporation of the results of forthcoming information related to fish habitat offsetting to Indigenous interests or Indigenous nations into Project design, monitoring, mitigation, and adaptive management plans.

The information will be considered in subsequent regulatory or Project Development processes and incorporated as appropriate in the operational management plans for the Project. The management plans that will be in place for the Project aimed at protecting Fish and Fish habitat will have measures to adapt to incorporate new information at any time whether that be from OW, other Indigenous Nations, regulatory agencies and/or from ongoing monitoring.

2.14 Comment OW-114

Provide more details for the offsetting plan that are standard in offsetting plans included in the EA process:

- An estimation of the area of habitat or fish production that would be created by the proposed Project for comparison to the proposed HADD;
- Identify species that would be targeted by offsetting; and
- Conduct ground investigations of the site to examine it for suitability for this plan.

Response

The fish habitat offsetting plan will prioritize fish species native to Tenas Creek, Goathorn Creek, and Four Creek, which may include Rainbow Trout and Dolly Varden. Potential offsetting options will undergo comprehensive review, including ground-based site investigations ecological suitability, hydrological stability, and long-term viability. The offsetting will be based on a robust estimation of the area of habitat or fish production that will be created by the proposed Project for comparison to the proposed HADD.

To obtain a Fisheries Act Authorization, the offsetting plan must include a detailed, construction-ready design. This includes geographic coordinates, site plans, habitat function objectives, and a monitoring strategy to ensure the offsetting measures achieve their intended ecological outcomes (DFO 2019).

Habitat loss estimates within the Project footprint will continue to be refined throughout permitting to inform the final calculation of required habitat offsetting. In accordance with federal guidance documents, a conservative offsetting ratio of 2:1 will be applied – meaning that for every 100m^2 of habitat lost, 200 m^2 of new or restored habitat must be created (DFO 2022).

As requested by OW, Telkwa Mining will discuss appropriate incorporation of the results of forthcoming information related to fish habitat offsetting to Indigenous interests or Indigenous nations into Project design, monitoring, mitigation, and adaptive management plans.

Since the information is forthcoming, it will be considered in subsequent regulatory or Project Development processes and incorporated as appropriate in the development of the operational management plans for the Project. The management plans that will be in place for the Project aimed at protecting Fish and Fish habitat will have measures to adapt to incorporate new information at any time whether that be from OW, other Indigenous Nations, regulatory agencies and/or from ongoing monitoring.

2.15 Comment OW-116

Provide more up-to-date and detailed baseline information on fish and fish habitat in environmental conditions representative of typical conditions. Assumptions on impacts, or a lack thereof, to fish and fish habitat are based on extremely flawed and incomplete studies. Studies should occur in all potentially affected watercourses and occur across multiple seasons.

Response

The comment raised regarding the apparent discrepancies between historical and current fish community data within the Project area is acknowledged. While it is true that Chinook Salmon, Pink Salmon, and Bull Trout were not observed during recent surveys, this absence should not be interpreted as definitive evidence of a shift in community composition or the loss of these species from the system.

These species are anadromous which means that their presence in freshwater systems is typically limited to specific life stages – primarily adult spawning migrations. The timing and frequency of these migrations can vary significantly by species and watershed. For example, Pink Salmon exhibit a strict two-year spawning cycle, meaning that surveys conducted in off- cycle years would not detect their presence. Similarly, spawning runs can be missed if surveys do not align precisely with the timing of fish migration and spawning activity. Therefore, the lack of recent observations is more likely attributed to survey timing and interannual variability rather than a true absence of these species.

There are no known barriers between the Telkwa River, Goathorn Creek, and Tenas Creek that would prevent fish passage. Therefore, it remains reasonable that these systems continue to provide accessible habitat for anadromous species, including Steelhead, Bull Trout, Chinook Salmon, and Pink Salmon.

It is understood that additional data is being requested to further characterize the presence and habitat use of fall-spawning salmonids. Even though the data in the Application is sufficient for the EA process, Telkwa Mining has planned a targeted fall spawner survey program in 2025. This program will include systematic bank walks throughout the spawning window for Chinook Salmon, Pink Salmon, and Bull Trout. Site selection for these surveys will be informed by the results of the proposed summer habitat assessments, ensuring that efforts are focused on areas with the highest potential for spawning activity.

It is important to note that Steelhead spawning occurs in the spring and will therefore require a separate survey. However, given the low success rate of previous Steelhead spawning surveys, it is more appropriate that a spawning habitat survey be conducted instead.

As requested by OW, Telkwa Mining will discuss appropriate incorporation of the results of forthcoming information related to modern fish surveys to Indigenous interests or Indigenous nations into Project design, monitoring, mitigation, and adaptive management plans.

Since the information is forthcoming, it will be considered in subsequent regulatory or Project Development processes and incorporated as appropriate in the development of the operational management plans for the Project. The management plans that will be in place for the Project aimed at protecting Fish and Fish habitat will have measures to adapt to incorporate new information at any time whether that be from OW, other Indigenous Nations, regulatory agencies and/or from ongoing monitoring.

2.16 Comment OW-117

Develop high quality restoration plans for assessment by OW and the Houses, including design of the plan, the selection of species, development of measurable indicators for restoration success and clearly defined objectives including ecosystem productivity. The Proponent should commit to undertake restoration activities until objectives are achieved.

Response

Under the *Fisheries Act,* proponents are required to provide a Letter of Credit to guarantee the implementation of offsetting measures for fish habitat. The Letter of Credit is provided to Fisheries and Oceans Canada, and the proponent remains responsible until it is confirmed that the offsetting goals have been fully met.

These measure, once implemented, must be monitored over several years to ensure they are effective and sustainable.

An updated offsetting program will be shared and developed during the permitting process that will aim to:

- Create additional overwintering habitat and addressing connectivity issues for Four Creek to restore damage from logging and road building;
- Add additional off-channel habitat to lower quality and heavily logged reaches of upper Goathorn Creek and its tributaries; and/or
- Addressing severe habitat impacts due to agriculture in Helps Creek.

Any potential offsetting will be approved by DFO and designed in collaboration with the OW to provide indigenous knowledge and input, as well as professional biologists and professional engineers/geoscientists that are experienced in habitat restoration. This will occur during the permitting process. Part of the design process will involve conducting studies and analysis to characterize physical processes that pose a risk to offsetting (e.g., flood magnitudes, sediment transport dynamics, groundwater-surface water interactions).

As requested by OW, Telkwa Mining will discuss appropriate incorporation of the results of forthcoming information related to fish habitat offsetting to Indigenous interests or Indigenous nations into Project design, monitoring, mitigation, and adaptive management plans.

Since the information is forthcoming, it will be considered in subsequent regulatory or Project Development processes and incorporated as appropriate in the development of the operational management plans for the Project. The management plans that will be in place for the Project aimed at protecting Fish and Fish habitat will have measures to adapt to incorporate new information at any time whether that be from OW, other Indigenous Nations, regulatory agencies and/or from ongoing monitoring.

2.17 Comment OW-119

Plan for the cases of catastrophic failures, including the quantification of potential impacts to fish and fish habitat.

Response

As part of the Environmental Assessment (EA), a Dam Breach Assessment was completed by SRK (2001). The assessment modelled two critical failure scenarios (sunny-day and rainy-day) of West, North, East and Tenas Dams to identify the local and regional impacts of water and sediment released into receiving watercourses. Effects to fish and fish habitat were provided in the EA Application and included:

- Scouring of channel bed and banks,
- Displacement of fish,
- Degradation of spawning habitat,
- Release of acidic or metal-laden water and acid-generating (PAG) substrates, and
- The mapped disturbance area is estimated to be less than 10 km2 and restoration is considered feasible.

To address this comment from OW, Telkwa Mining will prepare a technical memorandum during Project development. The memorandum will discuss available existing importation including fluvial geomorphology, hydrology, habitat mapping, water quality and biological monitoring to outline unplanned post- breach restoration strategies. The memorandum will also discuss potential emergency protocols that address aquatic impacts and ecological resilience.

As requested by OW, Telkwa Mining will discuss appropriate incorporation of the results of forthcoming information related to quantification of catastrophic failures on fish and fish habitat to Indigenous interests or Indigenous nations into Project design, monitoring, mitigation, and adaptive management plans.

The information will be considered in subsequent regulatory or Project Development processes and incorporated as appropriate in the operational management plans for the Project. The management plans that will be in place for the Project aimed at protecting Fish and Fish habitat

will have measures to adapt to incorporate new information at any time whether that be from OW, other Indigenous Nations, regulatory agencies and/or from ongoing monitoring.

3.0 Statement of Limitations

This report has been prepared by SLR Consulting (Canada) Ltd. (SLR) for Telkwa Mining Ltd. (Client) in accordance with the scope of work and all other terms and conditions of the agreement between such parties. SLR acknowledges and agrees that the Client may provide this report to government agencies, interest holders, and/or Indigenous communities as part of project planning or regulatory approval processes. Copying or distribution of this report, in whole or in part, for any other purpose other than as aforementioned is not permitted without the prior written consent of SLR.

Any findings, conclusions, recommendations, or designs provided in this report are based on conditions and criteria that existed at the time work was completed and the assumptions and qualifications set forth herein.

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4.0 Closure

Regards,

SLR Consulting (Canada) Ltd.





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Senior Fisheries Biologist | Managing Principal | Mining Sector Lead for Western Canada

Attachments
Appendix A: Palmer (2024a). BC EAO EAC Application Information Request. Response to BC Ministry of Water, Land, and Resource Stewardship Information Request

Appendix B: Palmer (2024b). Tenas Project EAO Internal Tracking Table Information Requests #498, 500-504, and 520. Expert advice regarding fish and fish habitat within the Project Area

5.0 References

Bustard, D. 1985. Telkwa Coal Project Aquatic Resource Assessment. Prepared by D. Bustard and Associates. Prepared for the Telkwa Coal Project: Smithers, BC.

ERM. 2020. Tenas Project 2017 to 2019 Baseline Report. Prepared by ERM. Prepared for Telkwa Coal Limited. November 2020.

Fisheries and Oceans Canada (DFO). 2019. Applicant's Guide Supporting the Authorizations Concerning Fish and Fish Habitat Protection Regulations. Retrieved from https://www.dfo-mpo.gc.ca/pnw-ppe/reviews-revues/docs/applicants-guide-demandeur-eng.pdf.

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Nonis, A., Hinch, S.G. & Coops, N.C. 2023. Summer physical habitat associations and movement of sympatric juvenile rainbow trout (*Oncorhynchus mykiss*) and Dolly Varden char (*Salvelinus malma*) in coastal streams of British Columbia. *Environ Biol Fish* 106, 1327–1343

Palmer. 2024a. BC EAO EAC Application Information Request. Response to BC Ministry of Water, Land, and Resource Stewardship Information Request. Prepared by Palmer (now part of SLR Consulting Ltd. Canada). Prepared for Telkwa Mining Ltd. January 23, 2024.

Palmer. 2024b. Tenas Coal Mine Information Request #498, 500-504, and 520. Expert advice regarding fish and fish habitat within the Project area. Prepared by Palmer (now part of SLR Consulting Ltd. Canada). Prepared for Telkwa Mining Ltd. June 4, 2024.

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Appendix A Palmer (2024a). BC EAO EAC Application Information Request. Response to BC Ministry of Water, Land, and Resource Stewardship Information Request

Date: January 23, 2024
Project #: 190591

To: Dan Famer, Telkwa Mining Ltd.
From: Daniel King and Alexandra Leclair
cc: Rick Palmer and Glenn Wagner
Re: BC EAO EAC Application Information Request
Response to BC Ministry of Water, Land and Resource Stewardship Information Request

1. Introduction

The BC Ministry of Water, Land and Resource Stewardship (WLRS) has requested steelhead spawning information (e.g., presence and distribution) for streams in and around the Tenas Coal Project (the Project) area. Streams of interest include Goathorn Creek, Tenas Creek, Four Creek and their potentially fish bearing tributaries. The information request pertains to the Project application for an Environmental Assessment Certificate (Telkwa Coal Limited, 2022).

Steelhead are a life-history variant of Rainbow Trout (*Oncorhynchus mykiss*) that migrate to the ocean for several years before returning to their natal streams to spawn (Mcphail, 2007). Rainbow Trout are documented in Goathorn Creek, Tenas Creek, and Four Creek, though Rainbow Trout are only found in the lowest approximately 150 metres of Four Creek. Currently, it is not known whether the Rainbow Trout present within these streams have a resident life history (i.e., entire life cycle occurs in the local system), an anadromous life history (i.e., steelhead), or a combination of both.

Palmer was retained by Telkwa Mining Limited (Telkwa Mining), formerly Telkwa Coal Ltd., to complete a reconnaissance-level field program and desktop assessment to determine whether steelhead spawn in Goathorn Creek, Tenas Creek, Four Creek, or their tributaries potentially affected by the Project. Palmer's approach included:

1. A historical data review of available fish habitat and fisheries information.
2. A Spring Spawner Survey field program to observe any adult steelhead spawning activity within the Project area.
3. A morphometric analysis and visual assessment of juvenile fish captured during a Summer Juvenile Survey field program to determine whether the captured fish were Rainbow Trout or steelhead.

The purpose of this memorandum is to present the data collected during these programs and the results of the steelhead spawning observations and analyses.

2. Methods

2.1 Historical Data Review

The objective of the historical data review was to identify previous accounts of potential steelhead spawning habitat and/or evidence of steelhead spawning or rearing activity within Tenas Creek, Goathorn Creek, Four Creek, and their associated tributaries within the Project area. The following historical datasets and reports were reviewed:

- Telkwa Coal Project Aquatic Resources Assessment (Bustard, 1985)
- Aquatic resource Baseline Studies Telkwa Coal Project (Bustard and Limnotek, 1998)
- Skeena Fish Populations and Their Habitat (Gottesfeld and Rabnett, 2007)
- Tenas Project 2017 to 2019 Baseline Report (ERM, 2019)
- HabitatWizard (B.C. Conservation Data Centre, 2023)

The locations and names of the unnamed tributaries assessed for steelhead spawning habitat and/or evidence of steelhead spawning or rearing activity are listed in **Table 1**.

Table 1. Location and names of unnamed tributaries within the Project study area assessed for steelhead spawning and rearing potential.

Stream Code[1]	Parent Stream	Watershed Code	UTM Zone	UTM Easting	UTM Northing
J250 (TN7)	Tenas Creek	061-4500-000-000-000-000	9N	616700	6052400
W151 (TN15)	Tenas Creek	057-9500-000-000-000-000	9N	615300	6050400
J251 (TN8)	Tenas Creek	061-5200-000-000-000-000	9N	616500	6052700
J248 (TN2)	Tenas Creek	061-4500-000-000-000-000	9N	618400	6054400
J249 (TN6)	Tenas Creek	061-4900-000-000-000-000	9N	618000	6052500
J247 (GT1)	Goathorn Creek	061-3800-000-000-000-000	9N	619700	6055000
Unnamed Trib North (TN11)	Tenas Creek	N/A	9N	615646.3	6051854
Unnamed Trib South (TN13)	Tenas Creek	N/A	9N	615488.9	6051201

1Code derived from sampling location during reconnaissance-level habitat assessments completed by Triton (1998). UTM = Universal Transverse Mercator. N/A = not available. Trib = Tributary. ( ) = brackets indicate naming conventions for tributary streams to Tenas Creek and Goathorn Creek used in the Project Environmental Assessment Certificate Application, Section 4.0 Environmental Effects Assessment, Chapter 6 Fish and Fish Habitat Valued Component

2.2 Spring Spawner Survey

The objectives of the Spring Spawner Survey were to: 1) visually confirm the presence and distribution of spawning steelhead within the Project area during the expected spawning period; and 2) determine whether habitat features utilized by spawning steelhead were present in the water bodies potentially affected by the Project. The Spring Spawner Survey took place May 24-25 2023, and consisted of visual surveys and habitat assessments at the sites listed in **Table 2** and shown in **Figure 1**.

Table 2. Steelhead Survey Locations, 2023.

Water Body	Site Code	UTM Zone	UTM Easting	UTM Northing
Tenas Creek	WQS01	9N	615171	6050438
	WQS02	9N	616914	6053490
	WQS05 - Tenas	9N	620615	6058133
Goathorn Creek	WQS06 – US	9N	620587	6053711
	WQS13	9N	621664	6051778
	WQS05 - Goathorn	9N	620615	6058133
Four Creek	Four Creek Trib	9N	620034	6054076
	WQS03US	9N	619235	6049989
	WQS03DS	9N	620113	6054128

2.2.1 Bank Walk Visual Survey

Bank walk visual surveys were completed at previously established water quality sites WQS01, WQS02, WQS03DS, WQS05 (Goathorn), WQS06, and WQS13 (**Figure 1**). A survey consisted of two field staff walking along the creek bank and instream when necessary, and tallying the number of observed holding, spawning, and spent steelhead as well as the number of observed steelhead redds and carcases. Surveys were conducted for approximately 100 m upstream and downstream at each site. A bank walk survey was not conducted as WQS05 (Tenas) due to low water clarity and the limited ability to visually observe steelhead spawners. A bank walk was not completed at WQS03US because of the impassible barrier to fish migration (i.e., hanging culvert) at WQS03DS, and no historical accounts of Rainbow Trout above this barrier.

2.2.2 Fish Habitat Assessment

A fish habitat assessment was completed at sites WQS01, WQS02, WQS03, and WQS13, WQS05 (Goathorn), and WQS06 (**Figure 1**). Gradient, wetted depth, substrate type, stream morphology, and presence of potential steelhead spawning habitat was measured/assessed at three transects for each site.

The field crew also assessed tributaries near each sample site for potential steelhead spawning habitat.

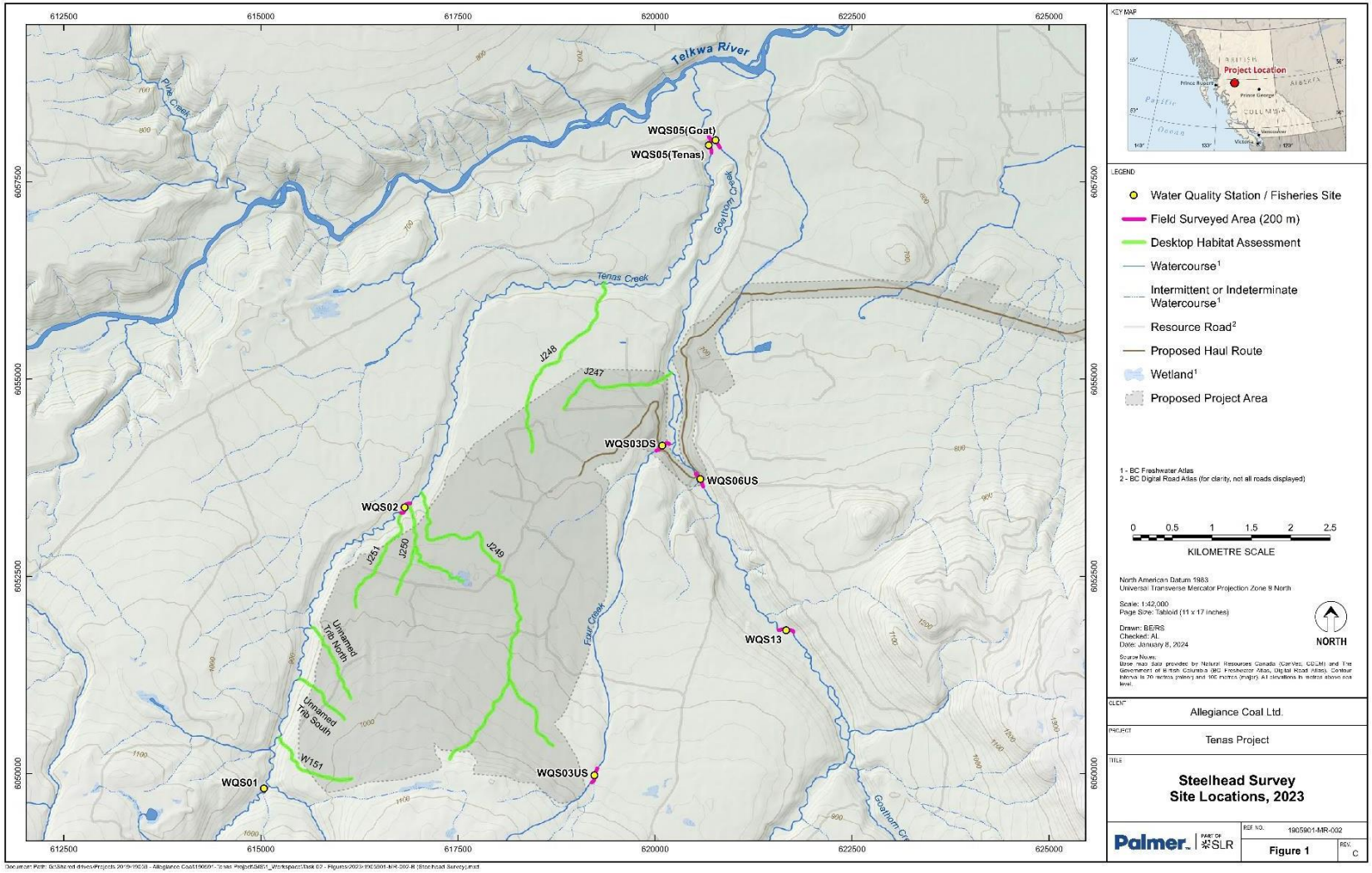


Figure 1. Steelhead Survey Locations, 2023

2.3 Summer Juvenile Survey

The objectives of the Summer Juvenile Survey were to 1) confirm whether immature Rainbow Trout (e.g., young-of-the-year, parr, or smolts) are present within the Project area, and 2) to collect morphometric data and biological samples to support the statistical analysis and potential genetic analysis described in 2.4 and 2.6. The Summer Juvenile Survey took place August 22-25 2023, and consisted of open-site electrofishing at the sites listed in **Table 2** shown in **Figure 1**.

Open-site electrofishing was conducted for approximately 100 m upstream and downstream at a total of seven sites: WQS05 (Tenas), WQS05 (Goathorn), WQS02, WQS03DS, WQS03US, WQS06US, and WQS13. All captured fish were identified to species, measured for fork length, total length, body depth, and weight. Scale samples and adipose fin clips were collected from fish large enough to provide a sample, and a subset of captured fish were photographed.

Site WQS01 (Tenas) was not visited during the Summer Juvenile Survey. This site is only accessible via helicopter and the available landing area was not large enough to safety land the helicopter model available at the time of the survey.

2.4 Morphometric Analysis

The relationship between fork length and weight of Rainbow Trout can differ between life history types, specifically during smoltification when parr transition to an anadromous life history type (i.e., smolt). At this stage, differences in body shape and body condition are conspicuous and can be used to differentiate between Rainbow Trout and steelhead (Hecht et al. 2015). Hetch et al. (2015) analysed body condition data for a multi-generational experimental population of resident Rainbow Trout and steelhead and identified ranges in body condition indicative of each life history classification. The approach for the morphometric analysis in this memo focuses on this difference and uses a combined dataset of the fish collected during the Summer Juvenile Survey and the Project's baseline (ERM 2019) to develop regression models that compare the body condition of fish captured within the Project area to the known body conditions of parr and smolt presented in Hecht et al. (2015).

The morphometric analysis consisted of the following steps: 1) calculation of body condition for Rainbow Trout captured in the Project area, 2) testing for significant differences in body condition between streams and season, 3) comparison of the body condition of Rainbow Trout captured within the Project area to the body condition of parr (resident) and smolt (anadromous) presented in Hecht et al (2015), and 4) comparison of the length-weight relationship of Rainbow Trout within the Project area to a standard weight regression for lotic Rainbow Trout (Simpkins and Hubert 1996).

All statistical analyses were completed in R version 4.3.1 (R Core Team, 2021). All figures were prepared using the ggplot2 R package (Wickham, 2016). Linear mixed effect models were completed using the lme4 R package (Bates et al., 2015), and linear regression analyses were completed using the lsmeans R package (Lenth, 2016). Statistical significance was denoted by an alpha value of ≤ 0.05.

To achieve Step 1, body condition was calculated for fish captured during the Summer Juvenile Survey and the Project's baseline study using Fulton's Condition Factor (Fulton 1904; $\boldsymbol{K = 10^5 \times W / FL3}$ …1). Combining data from the Summer Juvenile Survey and the Project's baseline study increased the sample size and provided a better seasonal representation of the population throughout the year (i.e., June, August and October).

$$K = 10^5 \times W/FL^3 \quad \ldots 1$$

Where K = Fulton's Condition Factor, FL = fork length in millimetres and W = weight in grams.

To achieve Step 2, body condition was tested for seasonal and stream-based differences as a function of age class. When scale samples or age data were not available, a population-specific length-at-age model was used to estimate the age of fish as a function of fork length ($\boldsymbol{Age = FL20-65}$ …2). Only fish that were at the age to potentially undergo smoltification (2+ and 3+) were used in subsequent analyses.

$$Age = {}^{FL}/_{20} - 65 \quad \ldots 2$$

Where W = weight in grams and FL = fork length in millimetres.

A linear mixed effect model with a restricted maximum likelihood (REML) was developed to assess whether age class and stream affected body condition in the captured fish. Sample month was included as a random effect. If no significant effect of age class (between age 2+ and 3+ *Rainbow Trout*) and waterbody on condition was found, the data were combined for use in step 3.

To achieve Step 3, body condition, weight, length, and age data from fish captured during the Summer Juvenile Survey and the Project's baseline study were combined with the dataset of known parr and smolt measurements presented in Hecht et al. (2015). Fish within this combined dataset were then assigned one of three life history stages – parr, smolt, or unknown. Given that the life stage of fish captured within the Project area is unknown, all fish collected from Goathorn Creek, Tenas Creek, Four Creek and the Telkwa River (sampled in 2017 and 2018 only) were assigned to "unknown".

Using this combined dataset, the linear relationship between weight and fork length of each life history stage was modeled with $\boldsymbol{log_{10}\, W = log_{10}\, a + log_{10}\,(FL) \times b}$ …3. This model allowed for a visual representation of how the body condition of the fish captured within the Project area compared to the known data presented in Hecht et al. (2015).

$$log_{10}\, W = log_{10}\, a + log_{10}\,(FL) \times b \quad \ldots 3$$

Where W = weight in grams, FL = fork length in mm, $\log_{10}$ = base 10 logarithm, and for the linear regression coefficients a = intercept and b = slope.

Data were tested for normality and homogeneity of variance and the appropriate parametric or non-parametric statistical analyses were then used to test for condition as a function of life history stage.

To achieve Step 4, the slopes of each life history stage in the model created in Step 3 were estimated and statistically compared between Rainbow Trout life history types, and to the standard weight regression for Rainbow Trout developed by Simpkins and Hubert (1996) ($\boldsymbol{log_{10}\, W_s = -5.023 + log_{10}\,(L) \times 3.024}$ …4). Slopes were compared using least squared means and Tukey's post hoc test with the lsmeans package in R (Lenth 2016). $\boldsymbol{log_{10}\, W_s = -5.023 + log_{10}\,(L) \times 3.024}$ …4 was developed using 81 lotic populations of Rainbow Trout with a minimum sample size of n=20 and demonstrates the length-weight relationship representative of resident, stream-dwelling populations in North America (Simpkins and Hubert 1996).

$$\boldsymbol{log_{10}\, W_s = -5.023 + log_{10}\,(L) \times 3.024} \qquad \boldsymbol{...4}$$

Where W_s = standard weight and L = length in mm

The standard weight regression was included for visual reference and could not be statistically compared to Rainbow Trout data from the Project area, or Hecht et al (2015), because the data used to create the standard weight equation were unavailable following a request to the authors (Simpkins and Hubert, 1996).

2.5 Visual Assessment

The objective of the visual assessment was to identify characteristics of smolting juveniles from photographs of Rainbow Trout captured during the Summer Juvenile Survey. Smolts have highly reflective, silver skin better adapted to the pelagic marine environment due to the deposition of guanine and hypoxanthine in the skin and is highly associated with the overall tendency toward an anadromous life history (Folmar and Dickhoff 1980). This phenotypic change is in stark contrast to the dark coloured, often spotted resident life histories adapted to rocky, shallow freshwater habitats (Ando et al. 2005; Haner et al. 1995). The assessment completed under the scope of the current study was qualitative in nature, as quantitative assessments of individual reflectance require a light-controlled environment with stationary, specialized equipment, which is difficult to accomplish in a remote field setting.

Photos of nine Rainbow Trout individuals, estimated to be between age 2 and 3, were visually classified as either residents, smolts, or unknown based on the following physical characteristics:

- Shiny silver skin (smolt) vs. darkened greener skin (resident)
- Fading or fewer parr marks and melanophores (smolt) vs. clearly defined parr marks and abundant melanophore dots on skin (resident)
- Clearly elongated and slender body and caudal peduncle (smolt) vs. shorter length, deeper body, "football" shaped (resident)

Individuals that were estimated to be age 0+ or 1+ were excluded from this analysis. Photos of individuals captured during the 2017-2019 baseline study were not available at the time of the assessment.

2.6 Genetic Analysis

Adipose fin clips were collected from a subset of Rainbow Trout captured in August 2023 for potential genetic analysis of the presence or absence of the two variants of the *Omy5* chromosome: one associated

with an anadromous life history and the other with resident life history (Pearse et al. 2019). Palmer consulted with Dr. Eric B. Taylor of the UBC Department of Zoology for the application of the *Omy5* variants to the fish collected within the Project area. He was not confident in the use of this chromosomal region to identify anadromous and resident fish as it has not yet been validated for populations within British Columbia (Dr. Eric B. Taylor pers. com.). If another genetic approach is recommended by the BC EAO, the samples collected are available for further analyses upon request.

3. Results and Discussion

3.1 Historical Data Review

Historical datasets and reports including studies on fish habitat and fisheries resources were reviewed for any information relevant to addressing gaps in information in steelhead spawning and rearing within the Tenas Creek and Goathorn Creek watersheds, with a particular focus on smaller creeks that overlap the local study area.

There was no evidence of steelhead spawning and rearing in tributaries to Tenas Creek, Four Creek, and Goathorn Creek within the Project area, based on the available habitat information. All streams for which historical fish and fish habitat were assessed are shown in **Figure 1**.

3.1.1 Tenas Creek

Several first order tributaries are on the east slope of Tenas Creek and have a drainage that partially overlaps with the Project area. Some of these streams have been identified during ecosystem inventories and included in the BC Freshwater Atlas stream network, and others are unnamed tributaries without previous habitat information available. These tributary streams and their likelihood of supporting steelhead spawning and rearing were reviewed moving in an upstream direction from the confluence of Tenas Creek and Goathorn Creek. For clarity and to provide differentiation between the unnamed tributary streams, the site names used during the 1997 ecosystem inventory of the area will be used along with the watershed codes (Triton, 1998).

Creek J248 (Watershed Code 061-4500-000-000-000-000) is a first order tributary which flows north from outside of the northern extent of the Project footprint into Tenas Creek several km upstream of the confluence with Goathorn Creek. The only Project infrastructure planned in the area of this tributary is an Explosives Bin southeast of the tributary, as well as the discharge of a diversion ditch along the west side of the project to transport non-contact site water (ERM, 2019). The habitat in this stream was assessed by Triton (1998) and classified as non-fish bearing with an undefined channel, lack of suitable fish habitat, no riparian tree vegetation due to logging activities and dry at the time of the assessment in July. It is highly unlikely that steelhead spawn and rear within this stream.

Creek J249 (061-4900-000-000-000-000), Creek J250 (061-4500-000-000-000-000), and Creek J251 (061-5200-000-000-000-000) are adjacent first and second order tributary streams that drain north from within the Project footprint into the east slope of Tenas Creek. Creek J249 and J250 were classified as non-fish bearing and no fish were captured in Creek J251 (Triton, 1998). During the baseline study completed by ERM (2019), the non-fish bearing status of these streams was confirmed with no flow or defined channel

found, apart from one of the tributaries where flow went underground approximately 200 meters upstream of Tenas Creek. It is unlikely that steelhead spawn and rear with these streams.

Two unnamed first order tributary streams on the west side of the project footprint and east slope of Tenas Creek have not had detailed habitat assessments completed and the definition of the channel and consistency of the flow throughout the year is unknown. A GIS-based assessment of gradient in the lower 1-200 m of each stream indicated that the approximate gradient was 17% and 28% for the north and south tributaries, respectively (**Figure 1**). A 17% gradient is not impassible, but highly unlikely for steelhead to use the habitat within this stream as spawning and rearing habitat and 28% is considered a barrier to fish migration (Forest Practices Code of British Columbia, 1998). Bustard and Limnotek (1998) provided a high-level description of these tributaries stating that they were small drainages not accessible beyond the steep embankment along Tenas Creek. It is highly unlikely that these two unnamed tributary streams support steelhead spawning and rearing.

The last tributary, Creek W151 (057-9500-000-000-000), is a small first order tributary adjacent to project infrastructure at the southern end of the Project footprint. Within the 100-metre section assessed, no barriers were identified and the measured gradient was shallow enough to support steelhead spawning activity (Triton, 1998). However, no Rainbow Trout or steelhead have been documented in this stream, and it is unknown whether the stream remains wetted all year (Triton, 1998). The gradient in the lower reaches of the stream is estimated to be greater than 33%, which is too steep to support steelhead spawning and rearing.

3.1.2 Goathorn Creek

Creek J247 (Watershed Code 061-3800-000-000-000-000) is a first order tributary to Goathorn Creek which flows east from outside of the northeast end of the Project footprint. Creek J247 will be used for Project effluent discharge (ERM, 2019). The habitat in this stream was assessed by Triton (1998) and classified as non-fish bearing with a gradient barrier at the confluence with Goathorn Creek. No fish habitat observed at this site upstream of the barrier and the channel was dry at the time of the survey. Based on the habitat characteristics described for J247, it is highly unlikely that steelhead or Rainbow Trout use this tributary stream for spawning or rearing.

Apart from Four Creek and Creek J247, no other tributary streams that directly drain into Goathorn Creek are within the project footprint. The lower 1.3 km of Goathorn Creek downstream of the confluence with Tenas Creek has the highest quality habitat for steelhead spawning and rearing, and has shown the highest density of juvenile Rainbow Trout captured during previous studies (Bustard and Limnotek, 1998).There is relatively abundant spawning habitat compared to upstream sections, with a 2-3% gradient, riffle-pool morphology, extensive gravel sections and more pool habitat for rearing (Bustard and Limnotek, 1998).

3.1.3 Four Creek

There is an impassable barrier in Four Creek approximately 150 m upstream of the confluence with Goathorn Creek that precludes access to most of the creek by steelhead. No resident Rainbow Trout have been captured upstream of this barrier in any of the fishing effort previously completed (Bustard, 1985; Bustard and Limnotek, 1998; ERM, 2019; Triton, 1998). Therefore, the sections of Four Creek and the

tributaries to Four Creek within the Project footprint are not expected to have a direct impact on steelhead spawning and rearing.

The lower 150 m section of Four Creek is accessible to Steelhead for spawning and rearing. Juvenile Rainbow Trout have been captured previously in this section (Bustard and Limnotek, 1998).

3.2 Fisheries Information

Relatively little is known about the abundance and spawning locations of steelhead within the Telkwa River watershed compared to populations within the Bulkley River and Maurice River that have been closely studied for several decades (Gottesfeld and Rabnett, 2007). Estimates of steelhead abundance for the Telkwa system have not been determined from direct observations, though Bustard (1985) suggested steelhead spawning populations in the order of 52 in Goathorn Creek, 107 in Tenas Creek and 347 in the lower Telkwa River. These estimates were established using survival rates from parr to smolt and subsequently returning adults. However, the estimates assumed that all juvenile Rainbow Trout captured were steelhead.

There are no impassable barriers between the Bulkey River and the lower reaches of Goathorn Creek and Tenas Creek. This along with the presence of preferred spawning habitat (i.e., gravel substrate with riffle-pool morphology) lend to the assumption that steelhead spawn in these systems. However, the abundance of steelhead and the composition of resident versus migratory ecotypes of Rainbow Trout have not been determined. Assuming some Rainbow Trout captured in previous studies, or all in the case of Bustard and Limnotek (1998), are steelhead then, based on density, Tenas Creek and Goathorn Creek might be important contributors to the steelhead population within the Telkwa River watershed. Most spawning likely occurs in the lower reaches of both as indicated by Rainbow Trout fry and parr densities and habitat characteristics described by Bustard and Limnotek (1998).

Direct observations of steelhead spawning have occurred historically within the Project area. A single redd with stranded fry isolated from the mainstem creek was located during early September 1997 within Tenas Creek (Bustard and Limnotek, 1998). A small-scale radio-telemetry study conducted from 1981-1982 tagged three steelhead overwintering in the Telkwa River near Pine Creek, and at least one of the three fish subsequently spawned upstream in Tenas Creek (Bustard and Limnotek, 1998).

In addition to Tenas Creek and Goathorn Creek, juvenile Rainbow Trout have also been captured in the 150 m section of Four creek downstream of the impassable hanging culvert, though their life history type is unknown. Outside of these larger tributary streams, based on habitat and historical catch data, it is unlikely that any other tributaries that overlap with the Project area support steelhead spawning and rearing.

3.3 Spring Spawner Survey

3.3.1 Bank Walk Visual Survey

No steelhead or redds were observed at any site during the bank walk visual survey. However, due to freshest and heavy flows in Tenas Creek, Goathorn Creek, and Four Creek this year, the visibility within the creeks was low. Although no spawning steelhead were observed within Project area streams, one

season of observations during challenging conditions are not enough to conclude that adult steelhead do not return to this system.

3.3.2 Fish Habitat Assessment

Characterization of fish habitat within Tenas Creek, Goathorn Creek, and Four Creek is summarized in **Table 3**. Suitable steelhead spawning habitat was not observed during the Spring Spawner Survey at any site, with the exception to WQS13 (Goathorn). Tenas Creek had low visibility due to high sediment loads, however, the sites surveyed on this creek contained very little potential resting habitat and no spawning habitat. Four Creek at site WQS03 was narrow, shallow, and contained abundant large woody debris and windthrow.

Table 3. Fish Habitat Characterization, 2023

Site Number	Stream	Gradient (%)	Maximum Depth (m)	Substrate Type (%)				Description
				Fines	Gravel	Cobble	Boulder	
WQS01	Tenas	3.5	0.45	2.5	30	65	2.5	Cascade-glide habitat. LWD cover, mature conifer on both upslope banks, alder lining banks.
WQS02	Tenas	3.2	0.53	5	20	60	15	Cascade-glide-pool habitat. Some undercut banks and LWD, mature conifer on both upslope banks, alder lining banks.
WQS03	Four	2.2	0.12	0	70	30	0	Riffle-glide habitat. Some LWD, mature conifer on both banks. 5 DV observed.
WQS13	Goathorn	1.5	0.70	23	20	40	17	Riffle-glide habitat. LWD and mixed conifer-deciduous on both banks. Good spawning habitat.
WQS05	Goathorn	1.5	0.75	0	0	50	50	Riffle-glide habitat. Mixed conifer-deciduous on both banks.
WQS06	Goathorn	2.5	0.75	0	0	20	80	Cascade- riffle-glide habitat. Mixed conifer-deciduous on both bank, including some alder. Little spawning habitat. 1 small (~5 cm) fish observed (DV or RB).

Notes: LWD = large woody debris; RB = Rainbow Trout; DV = Dolly Varden

Suitable steelhead spawning habitat was not observed in tributaries near the surveyed sites based on the observed stream morphology and gradient. As such, habitat assessments were not completed for tributaries to Tenas Creek, Goathorn Creek, or Four Creek.

While spawning steelhead were not observed at any site during the Spring Spawner Survey, use of Tenas Creek, Goathorn Creek, and the lowest 150 m of Four Creek by spawning steelhead cannot be ruled out, especially at site WQS13 in Goathorn Creek, given that no barriers to fish migration have been identified

between WQS13 and the Telkwa River confluence. Additionally, the presence of gravel in Tenas Creek and Four Creek could provide suitable steelhead spawning habitat during years where spring flows are lower than those observed in 2023. Due to the presence of some potential spawning habitat and the potential use of Tenas Creek, Goathorn Creek, or Four Creek by spawning steelhead, it can not be concluded that steelhead do not use these creeks for spawning and rearing based on the results of the Spring Spawning Survey.

3.4 Summer Juvenile Survey

Rainbow Trout juveniles were captured at all sampled sites in Tenas Creek and Goathorn Creek. No Rainbow Trout were captured in Four Creek. Captured fish were identified to species, measured for fork length, total length, body depth, and weight. Scale samples and adipose fin clips were collected from fish large enough to provide a sample.

Photographs of captured Rainbow Trout were reviewed during a post-field desktop analysis for characteristics of a smolt life history type (e.g., chrome underside, fading parr marks, elongated body, etc.). See **3.6** for a detailed account of the results.

To further assess whether the fish captured during the Summer Juvenile Survey were Rainbow Trout or steelhead, a comprehensive statistical analysis on the measured morphometrics of captured fish was completed. See **3.5** for a detailed account of the results.

3.5 Morphometric Analysis

To achieve Step 1 of the morphometric analysis, body condition was calculated for Rainbow Trout collected during the Summer Juvenile Survey and reported in the Project's baseline study. A summary of the mean condition factor of fish captured within the Project area and for fish known to be either parr or smolts from Hecht et al (2015) can be seen in **Table 4.**

Table 4. Summary table of mean condition factor by life history type for Rainbow Trout collected within the Project area and presented in Hecht et al (2015).

Life History	Sample Size	Mean Condition Factor[1]	Standard Error of the Mean	Connected Letter Display for Significance[2]	Data Source
Smolt	10,042	1.03	0.0008	A	Hecht et al 2015
Parr	1,822	1.14	0.002	B	Hecht et al 2015
Unknown	42	1.10	0.02	B	Telkwa Coal Ltd.[3]

1 Fulton's Condition Factor K (Fulton, 1904); 2 Significant differences (i.e., alpha<0.05) in mean condition denoted by different connected letters; 3 represents Rainbow Trout data collected in streams in and around the Tenas Project area from 2017-2023.

To achieve Step 2 of the morphometrics analysis, the effect of age class and water body (e.g., Tenas Creek) on condition, with month of capture as a random factor, were tested using a REML linear mixed effect model (ERM, 2019). No significant effects of any factors tested on condition were found ($p>0.05$), and the data were pooled for subsequent analyses.

To achieve Step 3, parametric statistical tests were preformed on the combined dataset of fish captured within the Project area and presented in Hecht et al (2015). Condition values were normally distributed according to a visual assessment of normality and within the expected condition values for salmonid fish (Barnham and Baxter 1998). The assumption of homogeneity of variance was tested using Levene's Test and was not found between treatment groups ($F = 38.8$, $p<0.001$). Due to heterogeneity of variance, Welch's ANOVA was used to test for significant differences in condition among life history type (i.e., smolt, parr, and unknown) and significant differences were observed ($F = 1142.6$, $p<0.001$). A Games-Howell post hoc test was then used to determine which life history types were significantly different and condition values between fish with known smolt and parr life histories ($p<0.001$), and between fish captured within the project area with unknown life histories and smolts ($p<0.001$). There was no significant difference in condition between Rainbow Trout parr with a known resident life history and the fish captured in Telkwa River, Goathorn Creek, and Tenas Creek ($p = 0.12$). These results indicate that, based on condition factor, the age 2+ and 3+ fish captured in water bodies in and around the Project area between 2017 and 2023 were, on average, Rainbow Trout with a resident life history. A summary of the mean condition factors by life history type is presented in **Table 4** and **Figure 2.**

To achieve Step 4 of the morphometric analysis, length and weight regressions were preformed. The length and weight relationship of each life history type (i.e., smolt, parr, and unknown) was assessed as another means of visually and statistically comparing the Rainbow Trout collected within the Project area to fish with known life histories in Hecht et al (2015). The regression plots, including the standard weight regression for resident Rainbow Trout from Simpkins and Hubert (1996) are shown in **Figure 3**. Similar to the results shown in the mean condition box plot (**Figure 2**), the length-weight regression indicated that the slope for Rainbow Trout captured within the Project is closely aligned with; 1) the slope of the resident life history parr from Hecht et al (2015), and 2) the standard weight regression for resident Rainbow Trout in Simpkins and Hubert (1996) (**Figure 3**). The slope of the anadromous smolt group from Hecht et al (2015) differs visually from that of the other three regressions (**Figure 3**).

The slopes of the regression lines were compared statistically using a least-squared means estimation with Tukey Kramer post-hoc for comparison between groups. The slopes of the resident parr and anadromous smolt length-weight regressions were significantly different ($p<0.0001$). The slopes for the parr and Rainbow Trout with unknown life history type from the Project area were not significantly different ($p=0.96$). Unlike the analysis using mean body condition, the slopes of the length-weight regressions for smolts and Rainbow Trout captured within the Project area were not significantly different ($p = 0.17$). They did, however differ more than the regression slopes of fish collected within the Project area fish compared to the parr **Figure 3**. A summary of the length-weight regression slopes is presented in **Table 5**.

Table 5. Slope value comparison for linear regression of the base 10 log of weight as a function of fork length by life history type for Rainbow Trout collected within the Project area and presented in Hecht et al. (2015).

Life History Comparison	t-ratio	p-value	Data Source
Parr-Smolt	-15.2	<0.0001*	Hecht et al 2015
Parr-Unknown Project Fish	0.3	0.96	Hecht et al 2015

			Telkwa Coal Ltd.[1]
Smolt-Unknown Project Fish	1.8	0.17	Hecht et al 2015] Telkwa Coal Ltd.[1]

1 Represents Rainbow Trout data collected from streams within and around the Project area; * = significantly different (alpha < 0.05)

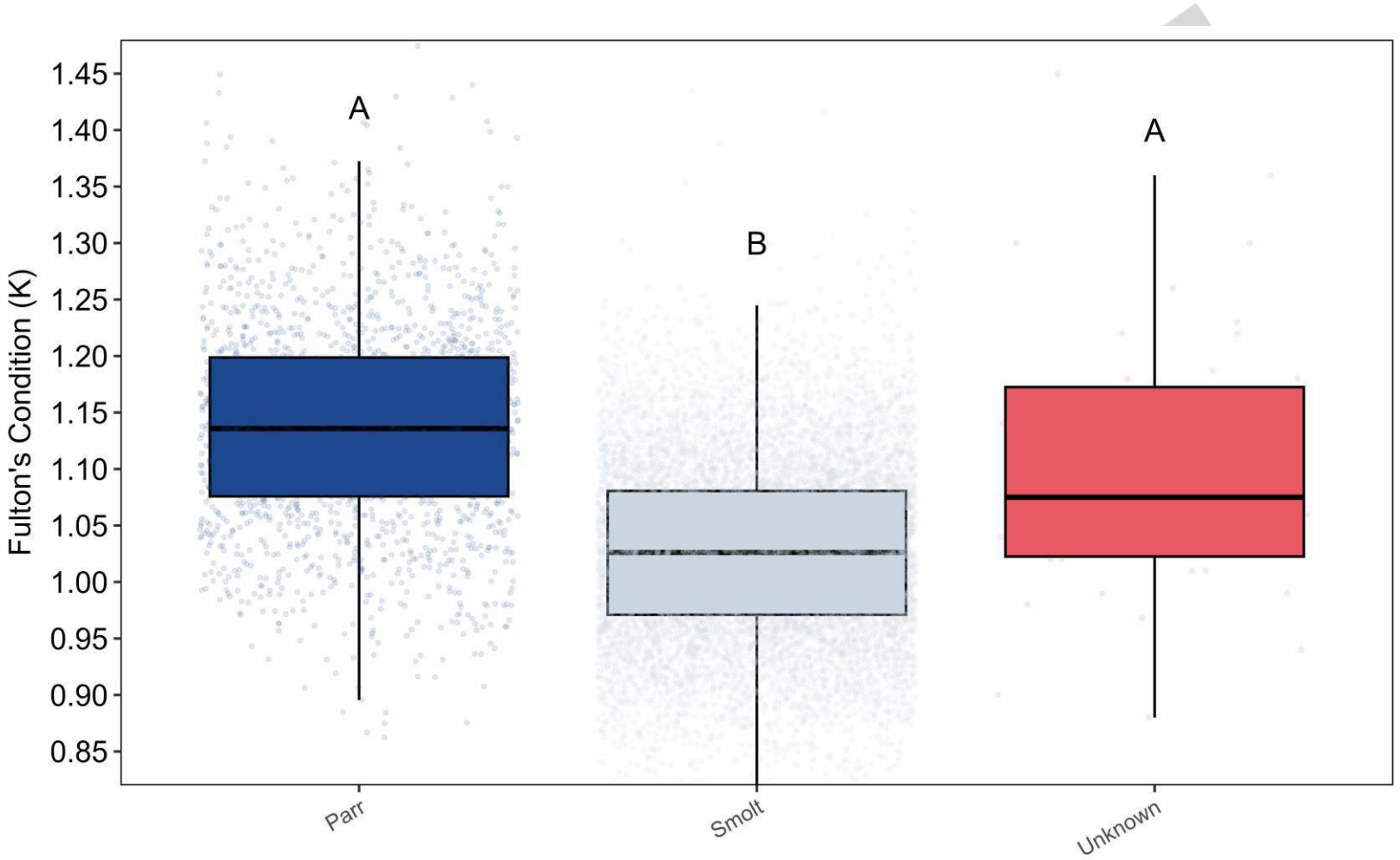


Figure 2. Fulton's Condition (K) of* age 2+ and 3+*Oncorhynchus mykiss captured in streams in and around the Tenas Project area in the Telkwa River Watershed ( ), as well as parr ( ) and smolts ( ) from Hecht et al 2015. Boxes = interquartile range (IQR), bolded line = mean, whiskers = 1.5*IQR, dots = individual fish. Upper case letters represent statistically significant groups (p<0.05)

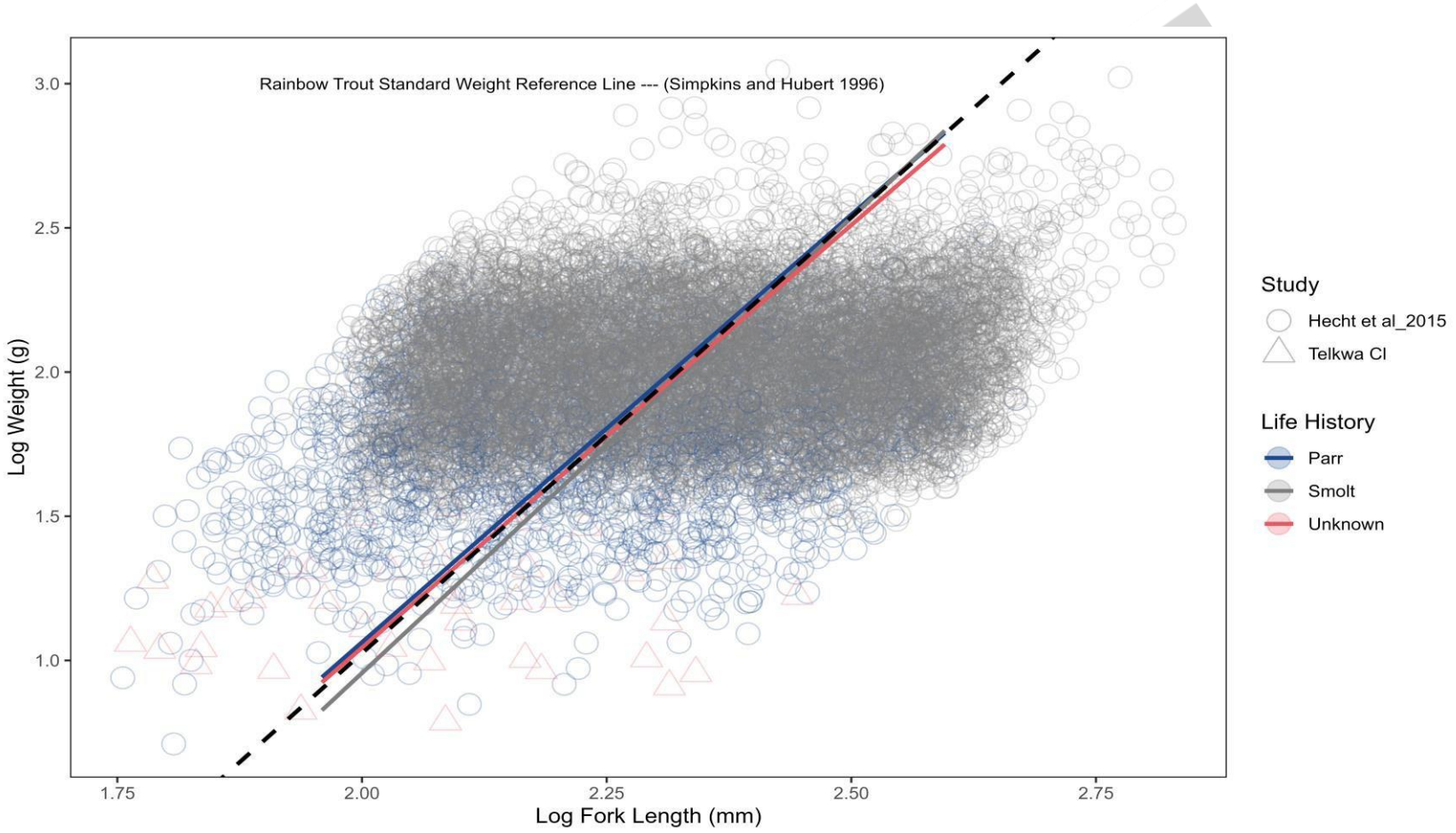


Figure 3. Linear regression of the base 10 logarithm of weight (grams) as a function of fork length (millimetres) for age 2+ and 3+ Rainbow Trout captured within the Project area (△), and as parr (○) and smolts ( ) from Hecht et al (2015). Black dashed reference line (- - -) represents the standard weight regression for lotic-dwelling Rainbow Trout (Simpkins and Hubert 1996). Coloured, solid lines represent the line of best fit by life history. Individual fish points were artificially separated by jittering for improved visibility and do not represent their true position relative to the line of best fit.

In the absence of known parentage or the relative composition of a population of Rainbow Trout between anadromous and resident life histories, body condition can be used to elucidate the ecotypes of Rainbow Trout that spawn within a watershed. The results of this study indicate that on average, most Rainbow Trout captured from Telkwa River, Tenas Creek, and Goathorn Creek exhibited a length-weight relationship and body condition that might suggest a resident life history. There are limitations to this approach, whereby it is looking at the population-level metrics, when individual variation could indicate anadromy or residency, and there is potential error associated with weight measurements of fish with top-loading balances due to variable additional water weight, which can influence the condition factor value.

3.6 Visual assessment

Of the nine individuals assessed, six were classified as residents, two as smolts and one as unknown, potentially with intermediary physical characteristics. A summary of the results is presented in **Table 6** and an example of a resident and an anadromous individual of roughly the same size and age is presented in **Plate 1**.

Table 6. Visual assessment of the photographed Rainbow Trout captured within the Project area.

Site	Site Description	Water Body	Life History Type	Number of Individuals
WQS02	Approx. 7 km upstream of confluence with Goathorn Creek	Tenas Creek	Resident	5
WQS06US	Upstream of the confluence with Four Creek	Goathorn Creek	Smolt	2
			Unknown	1
WQS05 (Goathorn)	Immediately downstream of the confluence with Tenas Creek	Goathorn Creek	Resident	1

The visual assessment of skin colouration indicated that the subset of assessed Rainbow Trout captured in Tenas Creek were residents, and that steelhead smolts are likely present within Goathorn Creek during the time of sampling.

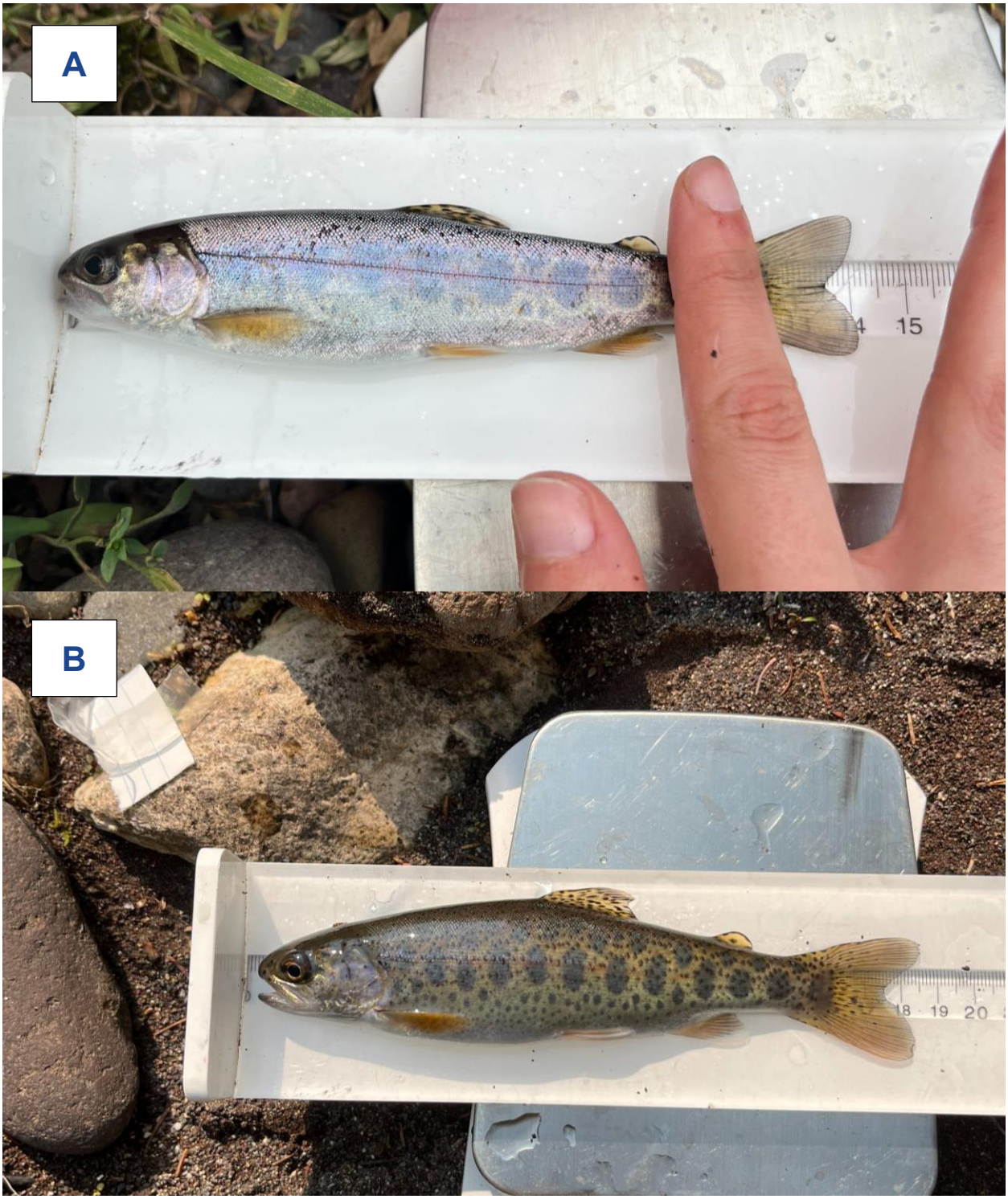


Plate 1. A) Rainbow Trout with a suspected anadromous life history (i.e., smolt). B) Individual with a resident life history.

4. Conclusion

This memorandum was prepared by Palmer on behalf of Telkwa Mining Ltd., formerly Telkwa Coal Ltd., in response to the information request submitted by BC Ministry of Water, Land and Resource Stewardship (WLRS) requesting information on steelhead spawning activity in streams within the Project area. Limited information pertaining to abundance, distribution, and spawning locations of steelhead within these creeks is available. To fill this gap, Palmer preformed a historical analysis of fish habitat information, a Spring Spawner Survey, a Summer Juvenile Survey, a morphometric analysis, a visual assessment for smolting characteristics on photographed fish, and a genetic analysis. The two surveys were performed on Goathorn Creek, Tenas Creek, and Four Creek. The results to these studies are summarized below.

- **Historical Data Review**
  - It is unlikely that steelhead use the small tributary streams in Tenas Creek within the Project area for spawning and rearing due to lack of spawning or rearing habitat.
  - Based on historical Rainbow Trout density information, the majority of steelhead spawning activity likely occurs within within the lower reaches of Tenas (i.e., from Site WQS02 downstream to the confluence with Goathorn Creek), and Goathorn Creek (i.e., from Site WQS06US downstream to the confluence with the Telkwa River) but any further information on abundance and location is unavailable.
- **Spring Spawner Survey**
  - No spawning steelhead or redds were observed in Tenas Creek, Goathorn Creek, or Four Creek. However, freshet and high flows reduced visibility within the streams.
- **Morphometric Analysis**
  - Juvenile (age 2+ and 3+) fish captured within Telkwa River, Goathorn Creek, and Tenas Creek, on average, appeared to be Rainbow Trout with a resident life history.
- **Visual Assessment**
  - Based on a qualitative visual assessment and as indicated by morphometric endpoints, most individuals exhibited characteristics that would indicate Rainbow Trout with a resident life history, with some individuals indicating characteristics of a smolt present.
- **Genetic Analysis**
  - Upon expert consultation, genetic testing was not possible because use of the *Omy5* variant for differentiation between anadromous and resident life histories has not yet been validated for populations within British Columbia.

It is unlikely that tributary streams that overlap with the planned Project footprint support steelhead spawning and rearing. No visual observations of steelhead spawning occurred in Four Creek, or throughout Tenas Creek and Goathorn Creek. However, based on the historical data review and results of morphometric, and visual assessments, it is likely that some steelhead spawning occurs in the lower reaches of Goathorn Creek (i.e., downstream of WQS06US) and Tenas Creek (i.e., downstream of WQS02), consistent with what has been reported previously.

5. Certification

Prepared By:



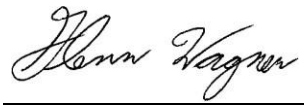
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Fisheries Biologist

Prepared By:



Alexandra Leclair, M.Sc., R.P.Bio
Environmental Biologist, Project Manager

Reviewed By:



Glenn Wager, Ph.D., R.P.Bio
Senior Fisheries Biologist

Approved By:



Rick, M.Sc., R.P.Bio
CEO, Fisheries Biologist

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Appendix B Palmer (2024b). Tenas Project EAO Internal Tracking Table Information Requests #498, 500-504, and 520. Expert advice regarding fish and fish habitat within the Project Area

470 Granville Street, Suite 630, Vancouver, BC V6C 1V5
Tel: 604-629-9075 | www.pecg.ca

Memorandum

Date: June 4, 2024
Project #: 1905903

To: Dan Farmer
Chief Operating Officer
Telkwa Mining Ltd.

From: Glenn Wagner and Rick Palmer, Palmer

cc: James Henderson, Telkwa Mining Ltd.

Re: Tenas Project EAO Internl Tracking Table Information Requests # 498, 500-504, and 520
Expert advice regarding fish and fish habitat within the Project area

1. Introduction

This memorandum has been prepared in response to an Information Request (IR) provided by the Office of the Wet'suwet'en as part of the adequacy review of the previously filed Tenas Project Environmental Assessment Certificat Application (Telkwa Coal Limited 2022). Specifically, this memorandum addresses IR #493, #500, #501, #502, #503, #504, and #520 in the EAO Internal Tracking Table. These IRs, along with Palmer's response to each, are presented in the following sections.

2. Responses to Information Request

Information Request # 498

The Tenas Coal Project does not consider the environmental flow needs (EFN) of these ecosystems.

Client Response:

Telkwa Coal acknowledges the comment. The EFN methods and results are included in subsection 5.2.1.1.6 of the Fish and Fish Habitat Valued Component (S4.0-C6) chapter including EFN criteria used to assess changes in flows. EFN was conducted. We have also provided this for Four Creek.

Palmer Response:

Environmental flow needs criteria were used to assess changes in base flows in Tenas Creek and Four Creek.

Predicted Tenas Creek flow changes were assessed, resulting in a Risk Management Level 1 during spring, early summer, and fall, and Risk Management Level 2 during winter months and late summer.

Predicted flow diversions in Four Creek were assessed, resulting in a Risk Management Level 3 for each given season and Project phase.

Information Request #500

How can TC monitor and offset for loss of fish production when they haven't measured it?

Client Response

Monitoring will include comparison of fish species composition, relative abundance, and fish condition to baseline conditions and will be calibrated to unaffected reference sites. Statistically significant changes in these parameters will be used to determine if the mine is having population level effects on fish.

Palmer Response

Fish abundance, a measure of fish production, was surveyed on Four Creek in 2017-2018 (Telkwa Coal Limited 2022) and an estimated total population of 1,300 Dolly Varden (*Salvelinus malma*) was calculated. Four Creek is the only stream in the Project area with predicted potential effects due to reduced flows.

Additional fish abundance estimate surveys of Tenas Creek, Goathorn Creek, and a reference creek are planned for 2024. Fish abundance of these three streams will be monitored during all phases of the project to determine whether any changes are attributable to the project. Additional variables to be monitored include fish health and distribution.

Information Request # 501

Offsetting projects have a documented 63% failure rate, how will TC ensure that theirs is not one of those?

Client Response

TCL acknowledges the comment. Compliance (offsetting is implemented as described) and effectiveness (fish use, habitat stability, and persistence) monitoring will be used to determine the efficacy of offset habitats and will direct requirements for expanding, enhancing, or augmenting implemented offset habitats.

Palmer Response

Any fish habitat offset that is created in a Fish Offsetting Plan will be designed based on the target fish species and life history stage for which it is intended. Construction monitoring will occur to assure compliance with designs.

Habitat offsets will be monitored for a set time period determined by DFO, during which threshold values of success (e.g., fish presence, aquatic invertebrate community establishment, slope stability) will be used to determine the effectiveness at each site.

Information Request #502

Who will manage WQ and structural issues after the 25-year post-closure period?

Client Response

TCL will be required to manage water quality and maintenance by the amounts provided in the reclamation security bond. The bond is approved by regulatory agencies, and the bond amount (dollars) is reviewed and re-approved every 5 years based on actual costs expended during the past 5 years.

Palmer Comment

Palmer/SLR is not leading the WQ, therefore, no official response is provided.

Typically, mine closure and post-closure phases will include site reclamation and monitoring. The goal of planned reclamation is to restore the site to as close to pre-construction condition as possible, including water quality constituents (e.g., metals, phosphorus, selenium) that are similar to baseline levels and within natural variation for the site.

Information Request #503

Most of the data on fish community and habitat usage is from the 1980s, and their own data shows that it may have changed. Why didn't they survey more than 9 sites in two years?

Client Response

TCL acknowledges the comment. Results of fish community data from project studies was consistent with historical fish community data. Twelve representative sites were sampled to determine fish species distributions and relative abundance. Where potential project effects were identified (i.e., Four Creek), more intensive sampling was conducted (i.e. several fish distribution and multiple pass depletion sites within potentially affected reaches).

Palmer Response

Baseline fish and fish habitat studies were conducted from 2017 to 2020 (Telkwa Coal Limited 2022) on six potentially affected streams over multiple seasons, as per requirements of the Environmental Assessment Act (2002). The studies performed included fish community surveys, fish abundance surveys, fish health, and fish tissue metals analysis. Additional steelhead spawning surveys are being performed in 2023 and 2024 to answer specific questions raised by regulators.

Information Request #504

Where is critical steelhead spawning areas in the project area, and how will they protect them?

Client Response

TCL acknowledges the comment. Important steelhead habitats were historically identified in lower sections of Tenas and Goathorn Creeks. There are no predicted residual effects in these watercourses as a result of water quality, changes in base flows, and/or habitat loss.

Palmer Response

Historical studies by Bustard (1985) suggested steelhead spawning likely takes place in the lower 5 km of Tenas Creek and in the lower 2 km of Goathorn Creek. Spawning surveys performed in 2018 (Telkwa Coal Limited 2022) and 2023 (Palmer 2024) did not observe any actively spawning steelhead. One steelhead carcass was observed in the lower 1 km of Goathead Creek in 2018, downstream of the Aveling Coalmine Road, corroborating steelhead use of the lower reaches, closest to the Telkwa River.

In 2023, Palmer conducted a summer Steelhead survey to determine whether juvenile Steelhead utilized Tenas Creek, Goathorn Creek, and Four Creek (Palmer 2024). Based on a morphometric and visual assessment, juvenile fish captured in Tenas Creek and Goathorn Creek appeared to be resident Rainbow Trout (*Oncorhynchus mykiss*), rather than migratory Steelhead. No Rainbow Trout or Steelhead were captured in Four Creek.

No significant changes in stream flows, water temperature, sediment concentrations, nutrient concentrations, contaminant concentrations, or habitat loss are predicted for the lower 5 km of Tenas Creek or the lower 2 km of Goathorn Creek (Telkwa Coal Limited 2022).

Information Request #520

Have a qualified professional identify lentic areas in the receiving environment which may receive selenium from mine operations, and ensure that background concentrations of selenium in water, sediment, invertebrate, and fish tissues are collected and compiled in those lentic areas.

Client Response

N/A

Palmer Response

There are no lentic (i.e., lakes or ponds) water bodies located in the near-field or far-field receiving environments of the Project. The Project area tributary streams (i.e., Tenas Creek, Four Creek) flow directly into Goathorn Creek, which flows into the Telkwa River. Approximately 7 km east of its confluence with Goathorn Creek, the Telkwa River flows directly into the Bulkley River. The Bulkley River flows approximately 90 km west to the Skeena River, with no lentic areas along the route.

3. Certification

Prepared By:

Glenn Wagner, Ph.D, R.P.Bio.
Senior Fisheries Biologist

Approved By:

Rick Palmer, M.Sc., R.P.Bio
CEO, Senior Fisheries Biologist

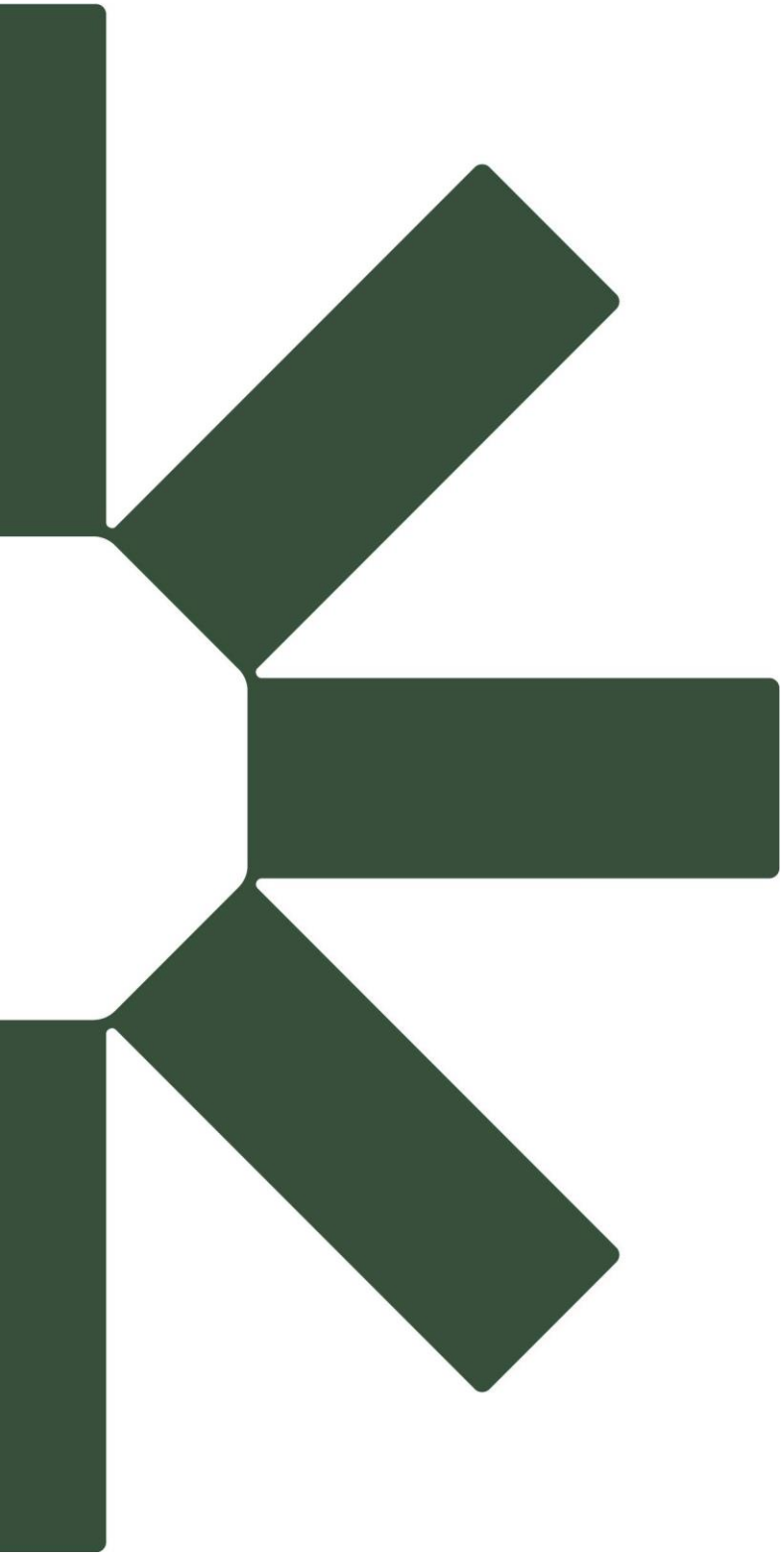
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Making Sustainability Happen

Steelhead Spawning Habitat in Tenas Coal Project Area

In response to BC Ministry of Water, Land, and Resource Stewardship (WLRS) Information Request.



TELKWA MINING LIMITED

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Agenda

- Rainbow Trout vs Steelhead
- Information Request Context
- Components of Analysis
- Methods and Results
- Conclusions



Rainbow Trout vs Steelhead

Rainbow Trout (RB)

- Resident life history variant.
- Entire life cycle occurs in freshwater system.

Steelhead (ST)

- Anadromous life history variant.
- Migrates to saltwater system for portion of life cycle.



Information Request Context

- BC Ministry of Water, Land, and Resource Stewardship (WLRS)
  - Lack of detail on Rainbow Trout (RB) / Steelhead (ST) spawning activity in project area.
  - Only available data is from 1985.
  - Reviewers cannot conclude relevance of the area to ST/RB spawning.
  - Reviewers suggested ground-based surveys to identify evidence of RB/ST spawning activity.

Components of the Analysis

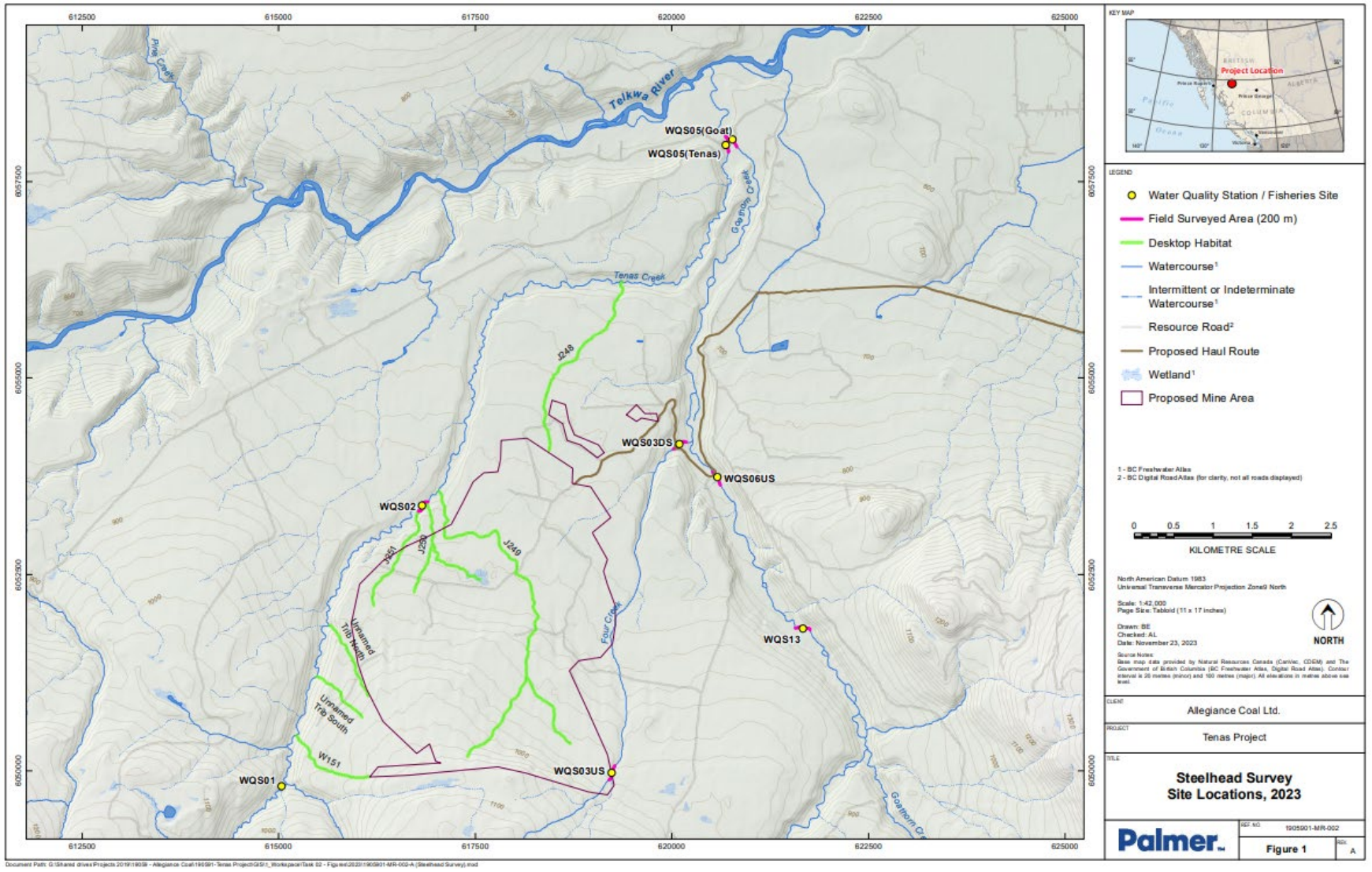
- Historical Data Review
- Spring Spawner Survey
- Summer Juvenile Survey
  - Morphometric Analysis
  - Visual Assessment



Historical Data Review: Methods

Documents Reviewed

- Telkwa Coal Project Aquatic Resources Assessment (Bustard, 1985)
- Aquatic Resource Baseline Studies Telkwa Coal Project (Bustard and Limnotek, 1998)
- Skeena Fish Populations and Their Habitat (Gottesfeld and Rabnett, 2007)
- Tenas Project 2017-2019 Baseline Report (ERM, 2019)
- Habitat Wizard (B.C. Conservation Data Center



Historical Data Review: Results

Tenas Creek Tributaries

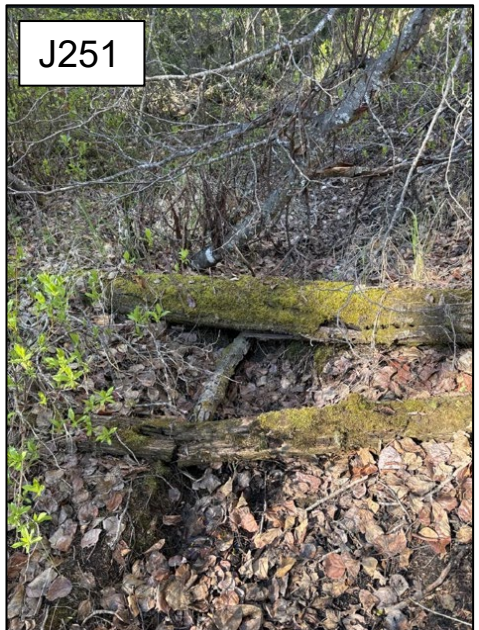
- ~17%-33% gradient
- Non-fish bearing (Triton 1998)
- Unlikely to support ST spawning

Goathorn Creek Tributaries

- Non-fish bearing (Triton 1998)
- Unlikely to support ST spawning

Four Creek

- Hanging culvert near confluence, impassable barrier to upstream fish migration.
- No historical record of ST/RB captured above hanging culvert.







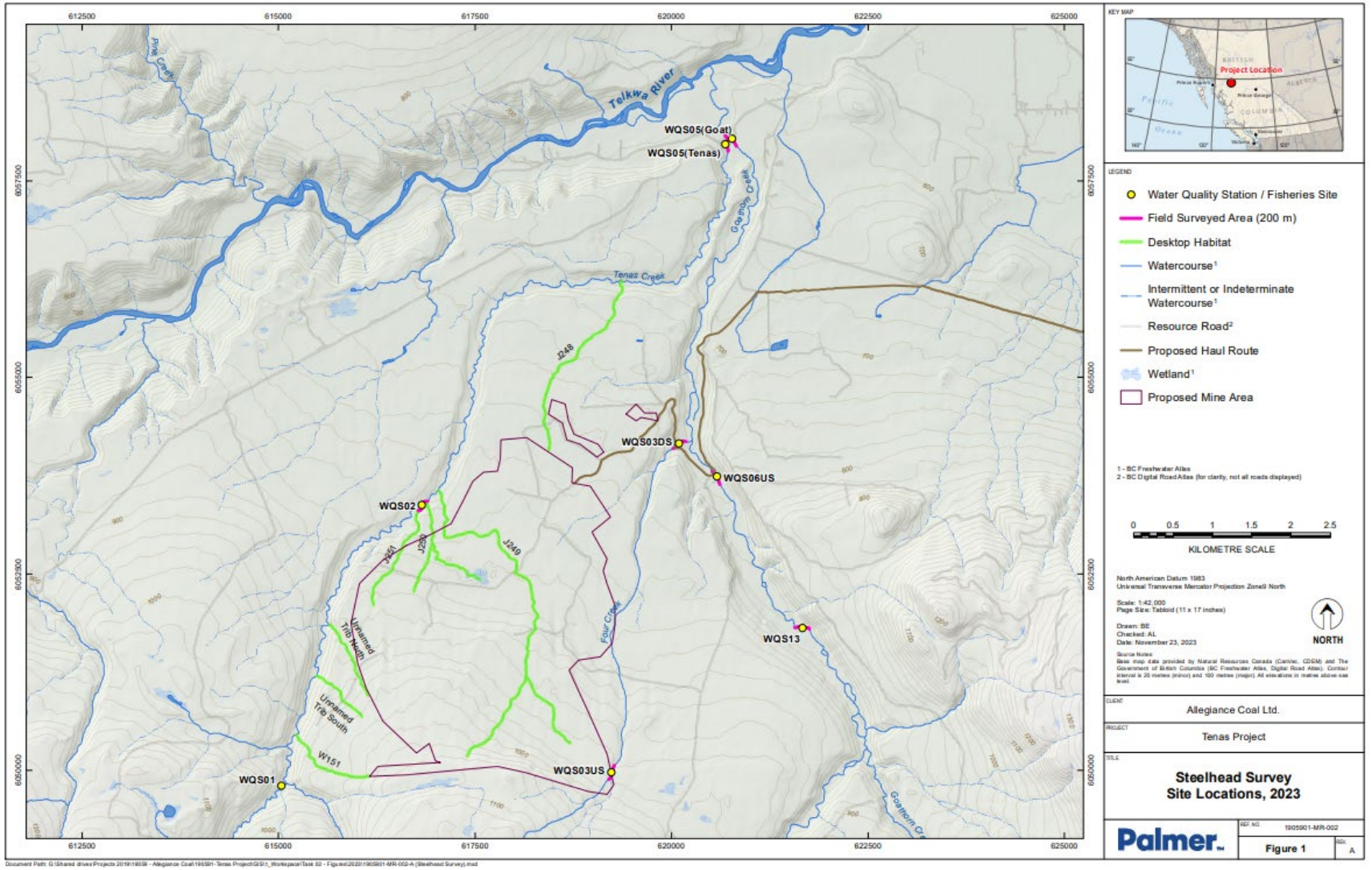
Spring Spawner Survey: Methods

Objectives

- Visually confirm presence and distribution of spawning ST.
- Assess presence of habitat features utilized by spawning ST.

Methods

- Bank Walk Survey.
- Fish Habitat Assessment.



Spring Spawner Survey: Results

Bank Walk Survey

- No ST or redds visually observed.
- Low visibility given freshet high flow.

Fish Habitat Assessment

- Little potential resting habitat.
- Gravel present in Tenas Creek and Goathorn Creek could provide suitable ST spawning habitat.
- ST spawning activity cannot be ruled out in Tenas Creek and Goathorn Creek as there are no barriers to fish migration from the Telkwa River.

Spring Spawner Survey: Results



WQS05 – Goathorn Creek



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Spring Spawner Survey: Results



WQS06US – Goathorn Creek



Spring Spawner Survey: Results



WQS13 – Tenas Creek



Spring Spawner Survey: Results



WQS01 – Tenas Creek



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Spring Spawner Survey: Results



WQS03ds – Four Creek



Summer Juvenile Survey: Methods

Objectives

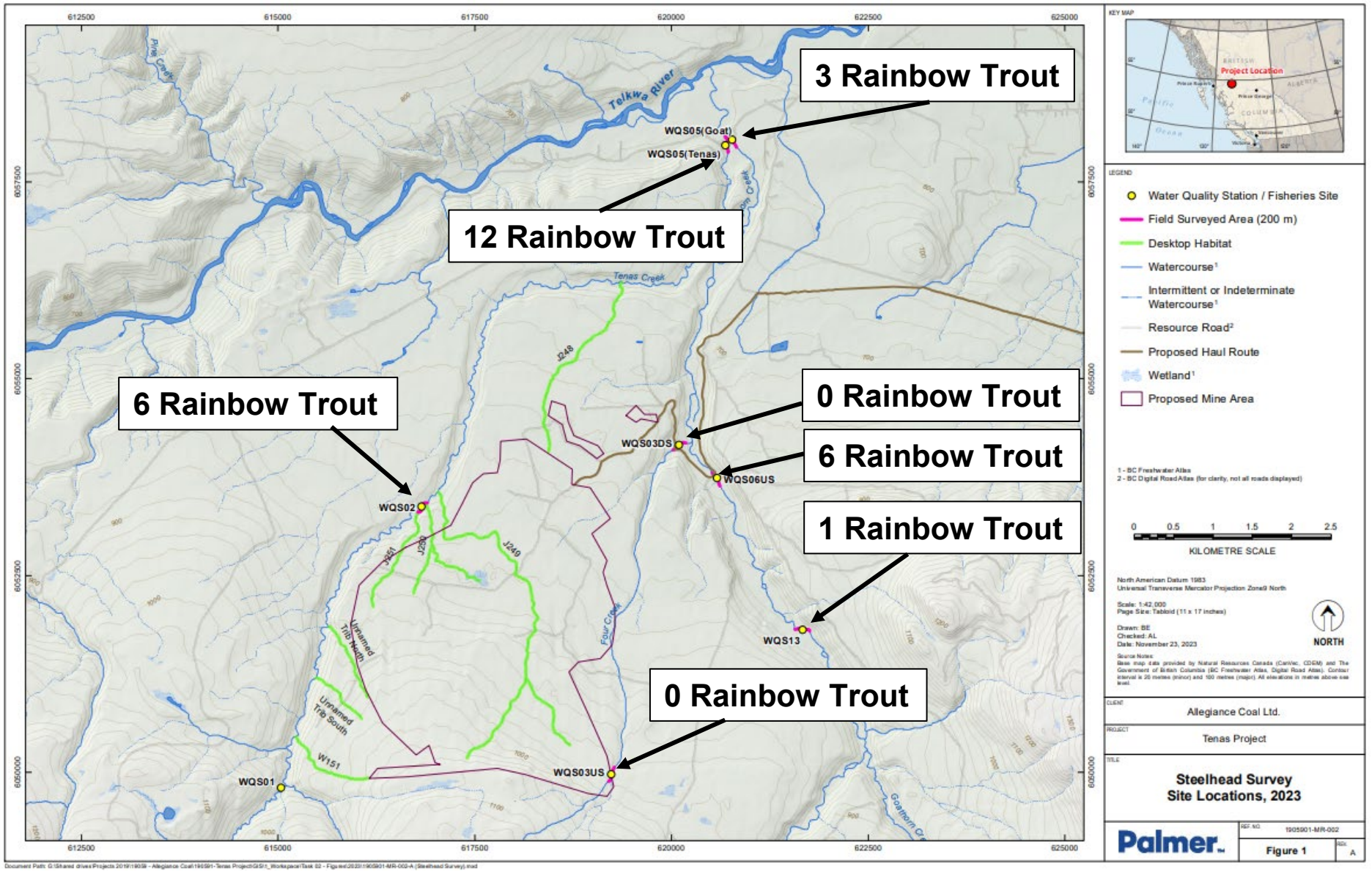
- Confirm whether sub-adult RB are present
- Collect morphometric data and biological samples to support statistical analysis

Methods

- Open site backpack electrofishing
- Morphometrics (fork length, total length, body depth, weight)
- Scales collection for aging analysis



Summer Juvenile Survey: Results



Palmer | PART OF SLR

Morphometric Analysis: Methods

Step 1: Calculate body condition of RB/ST within project area.

Step 2: Test for effect of age and waterbody on body condition.

Step 3: Compare body condition of RB/ST within project area to known resident & anadromous life histories (Hecht et al. 2015)

Step 4: Compare length-weight relationship of RB/ST within the Project area to known RB standard weight regression (Simpkins and Hubert 1996).

Morphometric Analysis: Results

Step 1 and Step 2:

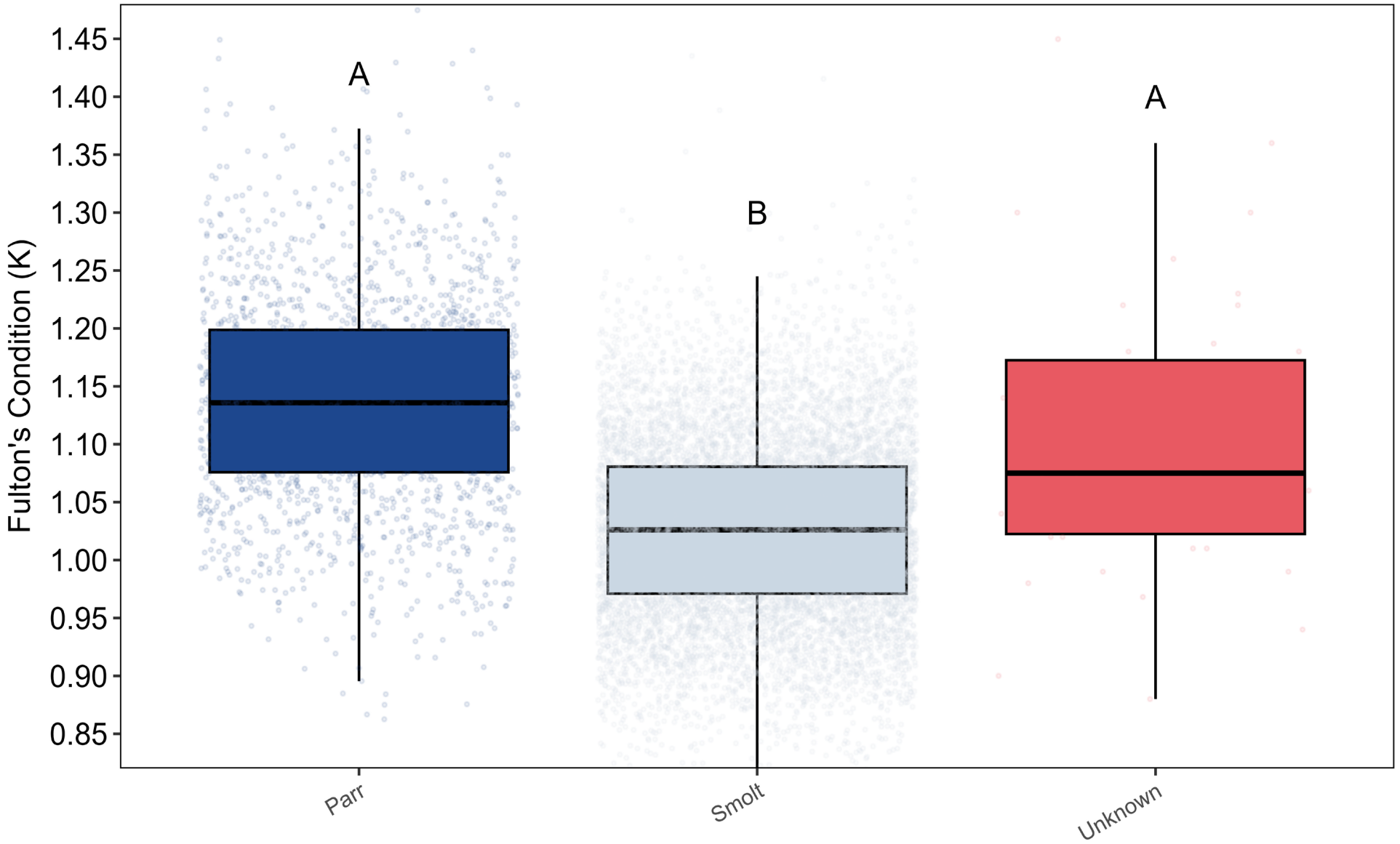
Life History	Sample Size	Mean Condition Factor[1]	Standard Error of the Mean	Letter Display for Significance[2]	Data Source
Unknown	42	1.10	0.02	A	Telkwa Mining Ltd.[3]
Parr	1,822	1.14	0.002	A	Hecht et al. 2015
Smolt	10,042	1.03	0.0008	B	Hecht et al. 2015

[1] Fulton's Condition Factor K (Fulton 1904); [2] Significant difference in mean condition denoted by different connected letters; [3] Represents RB data collected in stream within the Tenas Project area from 2017-2023

- Mean body condition of RB/ST = 1.1.
- Liner mixed effects model revealed no effect of age and waterbody on body condition.

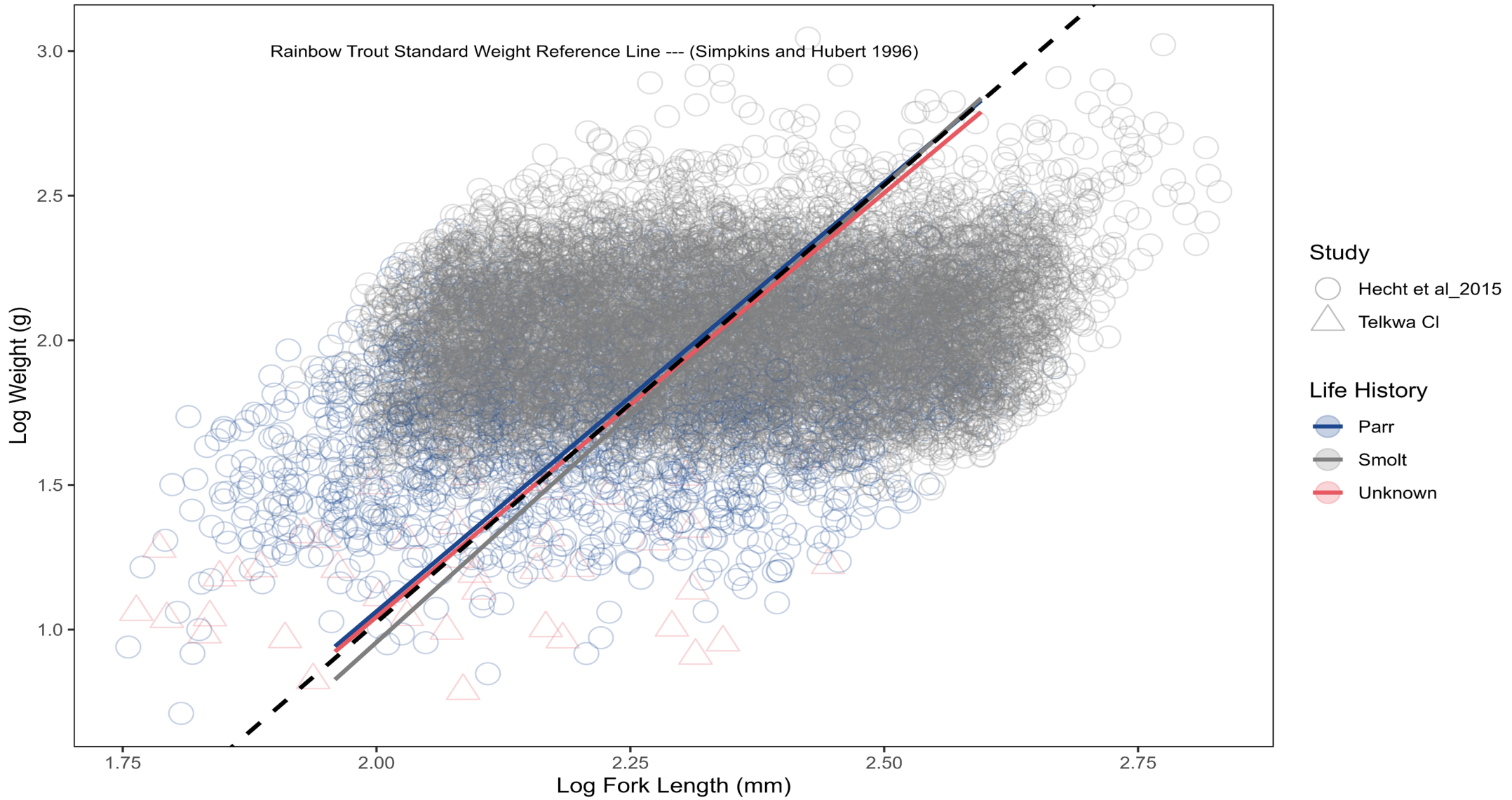
Morphometric Analysis: Results

Step 3:



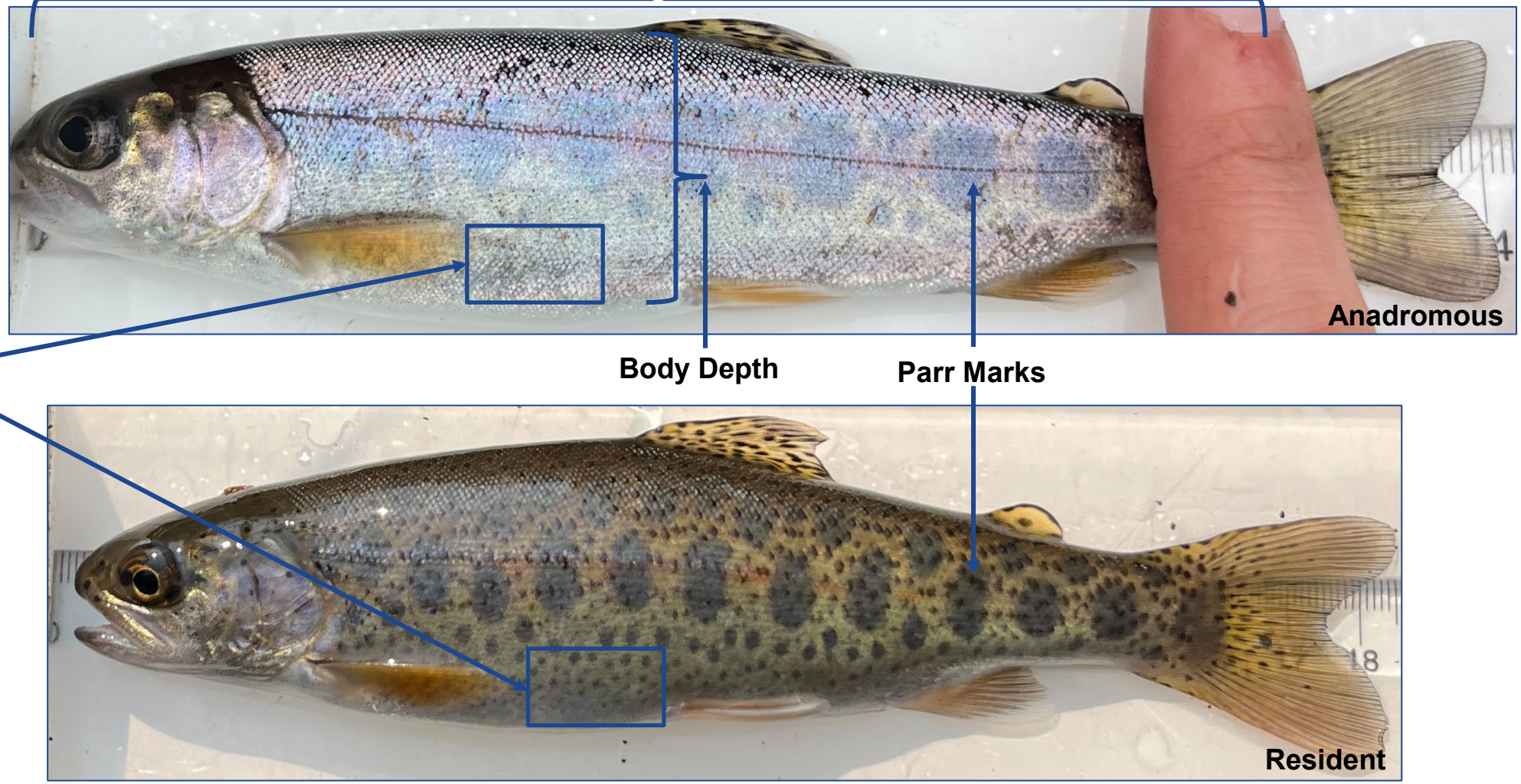
Morphometric Analysis: Results

Step 4:



Palmer PART OF SLR

Visual Assessment: Methods



Visual Assessment: Results

Site	Site Description	Water Body	Life History Type	Number of Individuals
WQS02	Upstream of confluence with Goathorn Creek	Tenas Creek	Resident	5
WQS06US	Upstream of the confluence with Four Creek	Goathorn Creek	Smolt	2
			Resident	1
WQS05 (Goathorn)	Immediately downstream of the confluence with Tenas Creek	Goathorn Creek	Resident	1



Conclusion

Historical Data Review

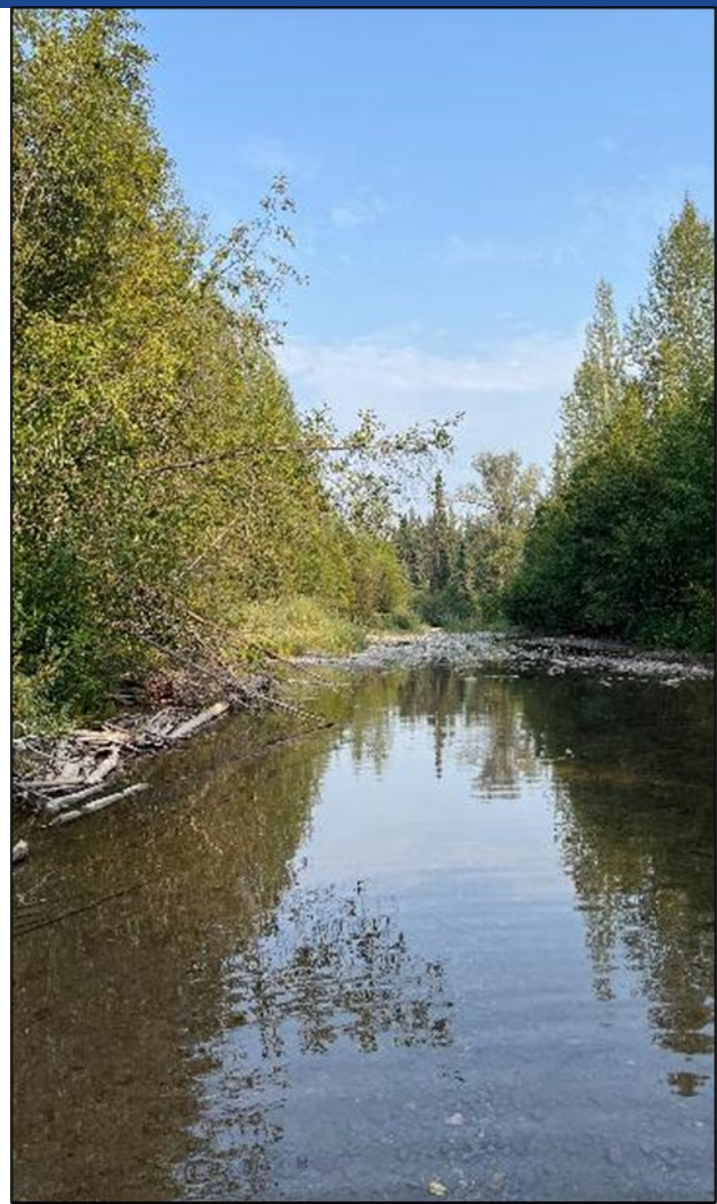
- Unlikely that ST spawn in Tenas Creek tributaries.
- Historical records of ST spawning in Tenas Creek & Goathorn Creek.

Spring Spawner Survey

- No spawning steelhead or redds observed.

Summer Juvenile Survey

- Morphometric Analysis
  - Body condition of fish captured within Project area appear to align with historical body condition of resident RB
- Visual Assessment
  - Most individuals captured within Project area appear to be RB.





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Environmental Biologist, Project Manager
Alexandra.Leclair@slrconsulting.com

Rick Palmer M.Sc., R.P.Bio
Senior Fisheries Biologist
Rick.Palmer@slrconsulting.com

SLR Consulting (Canada) Ltd.
750 W Pender St Suite 1700, Vancouver, BC V6C 2T8

February 24, 2025

Attention: Dan Farmer
Telkwa Mining Ltd.
Suite 1410-409 Granville Street
Vancouver, BC V6C 1T2

SLR Project No.: 201.024219.00000

Revision: 0

RE: Response to Skeena Fisheries Questions Regarding Palmer's Response to WLRS Steelhead Habitat Information Request

1.0 Introduction

Palmer (now part of SLR Consulting Ltd.) was retained by Telwa Mining Ltd (TML) to respond to an Information Request put forward by the BC Ministry of Water, Land, and Resources during the review of the Tenas Coal Mine Environmental Assessment Application (Telkwa Coal Ltd 2022). The reviewers expressed concern over the lack of information available regarding rainbow trout/steelhead trout (*Oncorhynchus mykiss*) spawning use of the streams within the Tenas Coal Project (the Project) project area.

In 2023, Palmer conducted a Spring Spawner Survey and a Juvenile steelhead trout Survey in Tenas Creek, Goathorn Creek, and Four Creek to address the concerns raised by the WLRS (Palmer 2024). The objectives of these studies were to 1) assess rainbow trout spawning habitat and activity in the Project area, and 2) support the conclusions of this study by using morphometric data of captured rainbow rout to differentiate resident and anadromous life history variants.

On January 28, 2025, Palmer presented the results of their study to TML, the First Nations affected by the Project, and a representative from Skeena Fisheries. Skeena Fisheries raised a total of 6 questions during the presentation and requested a formal response from Palmer.

This memo presents the questions raised by Skeena Fisheries, followed by Palmer's response to each.

2.0 Question 1: Rational for Morphometric Analysis

2.1 Skeena Fisheries Question

Please explain more about the reasoning behind choosing this method (the morphometric analysis) of investigating the proportion of the two life histories in the population

2.2 Palmer Response

The WLRS raised concerns that the work completed within the project area to date lacked information on adult rainbow trout/steelhead spawning activity. Though not required to address the concerns raised by reviewers, Palmer completed a morphometric analysis on rainbow trout/steelhead trout within the Project area to support surveys designed to address spawning activity concerns.

Palmer considered three methods to investigate the proportion of the two life histories within the Project area: 1) Genetic analysis, 2) otolith microchemistry, and 3) morphometric analysis. Though genetic analyses have been used to differentiate anadromous steelhead trout from resident rainbow trout, a literature review revealed some uncertainty in this method (Docker and Heath 2003). Given the high costs and uncertainty of the method, genetic analysis was not pursued. Otolith microchemistry analysis was also considered, as this method has been successful at differentiating resident and anadromous life histories in juvenile fish (Zimmerman et al. 2009). However, this method was not pursued due to lethal sampling concerns, high costs, and limited availability of specialized laboratories required for the analyses. Additionally, this level of research was not required to address the reviewer's concerns.

For these reasons, Palmer was of the opinion that the morphometric analysis, in combination with adult spawning surveys and habitat surveys, would provide the detail requested by the reviewers.

3.0 Question 2: Morphometric Analysis Use in Other Published Works

3.1 Skeena Fisheries Question

Has this method (morphometric analysis) been used similarly elsewhere, to determine the life histories of juveniles (other than Hecht et. al).

3.2 Palmer Response

A literature review was conducted to examine the use of morphometric analysis in determining life histories of juvenile rainbow trout. Of the papers found, Hecht et. al. (2015) was the most suitable model for our use given the large sample size of length and weight data presented in the paper.

Morphometric analyses have also been used to differentiate resident and anadromous life histories in juvenile rainbow trout, juvenile Chinook salmon (*Oncorhynchus tshawytscha*), and Brook char (*Salvelinus fontinalis*; Beeman et al. 1995, Campbell et al. 2015, Morinville and Rasmussen 2008).

4.0 Question 3: Sample Size for Each Age Analysis Method

4.1 Skeena Fisheries Question

How many of the fish captured in the project area and used in the morphometric analysis were aged via structures, and how many were estimated based on length?

4.2 Palmer Response

A total of eight fish captured during the 2023 juvenile steelhead trout survey were aged using scales, and a total of twenty fish were aged using a population-specific length-at-age model. All rainbow trout reported in the 2017-2019 Baseline (ERM 2019) were aged using a population-specific length-at-age model.

5.0 Question 4: Total of Mature Resident Fish Captured

5.1 Skeena Fisheries Question

Were any mature resident fish captured?

5.2 Palmer Response

Fish maturity data was not requested by the reviewers in the IR. As such, assessing fish maturity was not a focus of the 2023 steelhead trout spawning survey and the 2023 juvenile steelhead trout survey.

The 2023 steelhead trout spawner survey occurred during high flows when turbidity was high and visibility was low (Palmer 2024). As such, no mature spawning individuals were observed. Given that the 2023 juvenile steelhead trout survey occurred in the summer when fish were not in spawning condition (Palmer 2024), captured fish did not display physical evidence of maturity (e.g., presence of milt, etc.). In fact, most captured fish still displayed parr marks. Given these site conditions and study limitations, age-at-maturity data is the best method to assess maturity of the fish captured during the 2023 juvenile steelhead trout survey.

The age-at-maturity for rainbow trout in Skeena fish populations is 2 to 4 years (Gottesfeld et al. 2002). Of the eight scale samples collected for age analysis in the 2023 juvenile steelhead trout survey, one fish was aged at 2 years, and a total of 2 fish were aged at 3 years. All other scale samples were aged 1 year or younger. Given this, there is evidence to suggest that at least 3 fish captured during the 2023 juvenile steelhead trout survey could be mature, however this can not be concluded without additional analyses.

6.0 Question 5: Sample Size of Captured Rainbow Trout Older than Smolting Age

6.1 Skeena Fisheries Question

How many Rainbow Trout/Steelhead were captured that were older than smolting age (age 3-4)?

6.2 Palmer Response

Two rainbow trout captured in the 2023 juvenile steelhead survey were aged above 3 years. All other fish captured during this survey were aged younger than 3 years.

7.0 Question 6: Location of Adult Fish in the Watershed

7.1 Skeena Fisheries Question

Where are the adult fish in the system?

7.2 Palmer Response

This information was not requested by the reviewers in the IR and may require additional studies to obtain. Given the presence of young fish captured during the 2023 juvenile steelhead trout survey, it is reasonable to infer that there are resident adult rainbow trout in this system that have not been detected during previous field surveys. It is improbable that all the young fish observed during these presented surveys are offspring of anadromous steelhead and not resident rainbow trout.

Statement of Limitations

This report has been prepared by Plamer (now part of SLR Consulting (Canada) Ltd. (SLR)) for Telkwa Mining Ltd (the Client). in accordance with the scope of work and all other terms and conditions of the agreement between such parties. SLR acknowledges and agrees that the Client may provide this report to government agencies, interest holders, and/or Indigenous communities as part of project planning or regulatory approval processes. Copying or distribution of this report, in whole or in part, for any other purpose other than as aforementioned is not permitted without the prior written consent of SLR.

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Closure

Regards,

SLR Consulting (Canada) Ltd.



Ed Desson
Senior Ecologist



Alexandra Leclair, M.Sc., R.P.Bio.
Environmental Biologist, Project Manager



Rick Palmer, M.Sc., R.P.Bio.
Managing Principal, Project Director

References

Beeman, J. W., Rondorf, D. W., Tilson, M. E., & Venditti, D. A. (1995) A Nonlethal Measure of Smolt Status of Juvenile Steelhead Based on Body Morphology. *Transactions of the American Fisheries Society*, *124*(5), 764–769. https://doi.org/10.1577/1548-8659(1995)124<0764:ANMOSS>2.3.CO;2

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Docker, M.F., Heath, D.D. (2003) Genetic comparison between sympatric anadromous steelhead and freshwater resident rainbow trout in British Columbia, Canada. *Conservation Genetics* 4, 227–231. https://doi.org/10.1023/A:1023355114612

ERM (2019). Tenas Project 2017 to 2019 Baseline Report. Prepared by ERM. Prepared for Telkwa Coal Ltd. May 2019.

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Morinville, G.R., Rasmussen, J.B. (2008) Distinguishing between juvenile anadromous and resident brook trout (*Salvelinus fontinalis*) using morphology. *Environ Biol Fish* 81, 171–184. https://doi.org/10.1007/s10641-007-9186-9

Palmer (2024). BC EO EAC Application Information Request; Response to BC Ministry of Water, Land, and Resource Stewardship Information Request. Prepared by Palmer (now part of SLR Consulting Ltd. Canada). Prepared for Telkwa Mining Ltd.

Telkwa Coal Limited. 2022. BC EAO EAC Application – Draft, Section 4.0 Environmental Effects Assessment, Chapter 6 Fish and Fish Habitat Valued Component. Submitted to the BC Environmental Assessment Office. Submitted by Telkwa Coal Limited. Version 1.0

Zimmerman, C. E., Edwards, G. W., & Perry, K. (2009). Maternal Origin and Migratory History of Steelhead and Rainbow Trout Captured in Rivers of the Central Valley, California. *Transactions of the American Fisheries Society*, *138*(2), 280–291. https://doi.org/10.1577/T08-044.1

TELKWA MINING LIMITED

September 24, 2025

Stasia Ferbey, B.Sc.
Project Assessment Director, EAO
By Email: stasia.ferbey@gov.bc.ca

SUBJECT: Response to comments from Skin Tyee First Nation Band Regarding the Tenas Metallurgical Coal Mine Environmental Assessment

Dear Ms. Stasia,

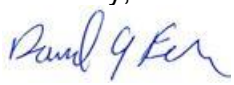
Please find Telkwa Mining Limited (Telkwa Mining) responses to the comments provided by Skin Tyee First Nation (STN) on September 9, 2025 in relation to Telkwa Mining's response to the EAO Steelhead spawning information request provided in August 2025.

Telkwa Mining Ltd. (TML) retained SLR Consulting (Canada) Limited (SLR) to respond to these comments put forward by the Skin Tyee First Nation (STN) which pertained to the fisheries, aquatics, and hydrology of Tenas, Goathorn, and Four Creeks which are the primary watersheds potentially affected by the Project.

The responses have been included in Appendix 1 attached.

Feel free to contact me with any further questions on this topic at 1-604-220-5703 or email at dan.farmer@telkwa-mining.ca.

Sincerely,



Daniel J. Farmer
Project and Development Manager
Telkwa Mining Limited

Cc: File

Encl. Appendix 1: Response to comments from the Skin Tyee First Nation Band regarding the Tenas Metallurgical Coal Project Environmental Assessment

APPENDIX 1: RESPONSE TO COMMENTS FROM THE SKIN TYEE FIRST NATION BAND REGARDING THE TENAS METALLURGICAL COAL PROJECT ENVIRONMENTAL ASSESSMENT

Technical Memorandum

To:	Dan Farmer	**From:**	Kirby Ottenbreit
Company:	Telkwa Mining Limited	**SLR Consulting (Canada) Ltd.**	
cc:		**Date:**	September 24, 2025
		Project No.	201.089602.00001
		Revision	0

RE: Response to comments from Skin Tyee Nation regarding the Tenas Metallurgical Coal Project Environmental Assessment

Introduction

Telkwa Mining Limited (Telkwa Mining) has requested the services of SLR Consulting (Canada) Ltd. (SLR) to help respond to Information Requests (IRs) put forward by the Skin Tyee First Nation (Skin Tyee FN) as part of the review of the Tenas Project Environmental Assessment Application (the Project) and subsequent studies designed to better understand the ecological baseline conditions in the vicinity of the proposed mine. These IRs pertained to the fisheries, aquatics, and hydrology of Tenas, Goathorn, and Four Creeks – the primary watersheds potentially affected by the Project.

The purpose of this memorandum is to provide Telkwa Mining with recommended responses from SLR's Qualified Professionals in fisheries and aquatic sciences to the Skin Tyee FN comments and questions and to complement the table of responses provided in the accompanying response tracking table.

Responses to Information Requests

Comments 1, 3, 4, 5, 9, and 12

1 The 2023 Spring Spawner survey was not sufficient in scope or scale to accurately identify Steelhead spawning habitat, as the survey was restricted to only a two-day period and only 200 m sections of each survey reach were investigated. Repeated surveys should be conducted, and much larger areas of the streams should be surveyed.

3 The question from office of the Wet'suwet'en (OW) regarding potential use of the Project Area by other salmonids was not adequately addressed and should include information regarding use of the Telkwa River that is part of the regional assessment area, as it is known to be utilized by coho, Chinook and pink salmon as a migration pathway and potentially a spawning area. Coho were mentioned in the question and not addressed in the answer despite them being one of the most likely other salmonids to utilize the project area for spawning. Fall spawner surveys will have to be conducted on a much-expanded scope both in terms of area and effort relative to the Steelhead spawner surveys.

4 The relative effort put towards the spawner surveys presented in the "The Steelhead Memorandum (Palmer 2024a, Appendix A)" was insufficient to potentially accurately describe Steelhead spawning in Goathorn and Tenas Creek. A proper survey should be conducted which would involve walks of entire stream reaches on the km scale, not just 100 m sections, and these surveys should be repeated at least three times over a multiple week window as is typical for standard spawning surveys.

5 As with Comment OW 055 the answer fails to address coho salmon which are known to be a widely distributed salmon species in the Skeena River watershed and are known to spawn in the Telkwa River.

9 Proper surveys of both adults and juveniles in Goathorn, Tenas and Four Creek should include repeated surveys, as is noted by the proponent in their answer "spawning runs can be missed if surveys do not align precisely with the timing of fish migration and spawning activity. Therefore, the lack of recent observations is more likely attributed to survey timing and interannual variability rather than a true absence of these species. Expanding the scope of survey timing would allow better characterization of potential spawning activity in these areas. As such STFN would disagree with the statement that "the data in the Application is sufficient for the EA process”

12 Why were the water quality stations chosen as the survey locations, and how was 100 m upstream and downstream chosen as the survey length? Typical spawner surveys consist of walking entire stream reaches as opposed to short segments. Only surveying 600 m of stream length per creek seems like a very limited effort compared to the scope and scale of the project. Based on the number of potential spawning pairs in each creek proposed by Bustard (1985), greater effort would likely be required to observe spawning activity.

Response

In response to requests from First Nations and the regulators in 2022, Telkwa Mining committed to conducting additional fall spawning surveys in 2024 and 2025 for anadromous salmon species and Dolly Varden. The fall surveys comprise a combination of walking, flying (helicopter), and remote aerial surveys (unmanned aerial vehicle [UAV]) along the length of the anadromous reaches of Tenas and Goathorn Creeks, and in the middle reaches of Four Creek. Preliminary results indicate that salmon spawning habitat is sparsely distributed in Tenas Creek and very limited in Goathorn Creek.

Additional fisheries information collected in 2024 and 2025 do not change the results of the Tenas Project effects assessment or alter the “not significant” effects on fisheries of the Tenas Project. Results of these studies will be summarized for the permitting process.

The Telkwa Mining Fish and Fish habitat Yintah Management Directives (YMD) – Enhanced Environmental Management Plan will be amended in collaboration with regulators and the OW during the permitting process.

The information currently reported in the EAC application is adequate for the EA process and this additional information will be summarized for the permitting process.

Comments 2 and 6

2 To accurately assess fish abundance for Tenas and Goathorn Creek an appropriate survey effort would be to have survey reaches throughout each watershed including major tributaries and to survey 3 sites per reach to create an average of variability, these surveys would then be repeated seasonally at a minimum.

6 To accurately assess fish abundance for Tenas and Goathorn Creek an appropriate survey effort would be to have survey reaches throughout each watershed including major tributaries and to survey 3 sites per reach to create an average of variability, these surveys would then be repeated seasonally at a minimum.

Response

In response to requests from First Nations and the regulators, Telkwa Mining committed to conducting fish abundance surveys in 2024 and 2025. Abundance surveys consisted of closed, multiple-pass depletion sampling in all fish-bearing reaches of Goathorn, Tenas, and Four Creeks.

Telkwa Mining understands this request for information to have been met. Furthermore, Telkwa Mining invites Skin Tyee FN to attend field work currently on-going in Goathorn, Tenas and Four Creeks to learn directly more about the fisheries within these systems.

The information currently reported in the EAC application is adequate for the EA process and this additional information will be summarized for the permitting process.

Comment 7

7 The options present by OW are a clear demonstration of the cumulative effects which are already impacting salmonid habitat in the assessment area. The concern around restoring connectivity to Four Creek is flawed according to the reference provided by the proponent. The Nonis et al. 2023 study demonstrates the importance of providing and protecting pool habitats in the area where these species overlap and does not provide any evidence of Dolly Varden being displaced by Rainbow Trout. The Taniguchi et al. 2000 is looking at an introduced rainbow trout population in a small stream in Japan, and only looked at potential redd imposition. As these native species are known to co-occur in these types of systems as demonstrated by Nonis et al. 2023, it seems likely that restoration of Four Creek would return the area to a more natural state and that Dolly Varden and Rainbow Trout would co-occur without significant negative impacts to the Dolly Varden population. The likelihood of this would rely on proper pool habitats being protected and restored in those areas. Reducing project impacts on Four Creek, such as the 24% decrease in winter baseline flows, would have to occur for this restoration to be successful and for sympatric use.

Response

Telkwa Mining is exploring the option of eliminating the existing culvert barrier on Four Creek to allow upstream access for fish from Goathorn Creek as part of offsetting planning for the Project. Changes to water management and updated groundwater/surface water modeling predicts much lower reductions in Four Creek than those presented in the EAC. Please see attached Appendix A for further details of the current groundwater/surface water interactions study.

Comments 8 and 10

8 Offsetting plans should be designed and implemented prior to any impacts to fish habitats, otherwise time lags should be part of the calculation of the appropriate offsetting ratio.

10 Although a Letter of Credit is helpful it does not guarantee that time lags will be accounted for. If significant time lags occur before the habitat becomes functional then additional offsetting should occur to make up for lost productivity. Offsetting plans should be developed in collaboration with the impacted communities and joint monitoring of the effectiveness of these offsetting measures should be undertaken.

Response

If offsetting is required for predicted fish and fish habitat impacts as a result of the Project, offsetting options will be designed and implemented in advance of habitat impacts to fish habitat in accordance with legislation in the federal *Fisheries Act*. In the event this is not practicable, time lag and lost productivity will be considered in the accounting of the habitat balance between habitat impacts and habitat offsetting.

Comment 11

11 To properly plan for catastrophic failures, better data needs to be collected on salmonid habitat and habitat use of downstream area in the Regional Assessment Area and likely beyond. The habitats downstream in the Telkwa, Bulkley and Skeena Rivers represent important migration pathways and juvenile rearing areas for multiple salmon species, and a catastrophic failure could have major impacts depending on the timing and the scale at which it occurs. Considering that the assessment rates the hazard classification as "Very High" for each of the four dams considered, adequate data needs to be collected on downstream salmon habitats with an appropriate assessment area, based on the modelled "Danger areas" presented in the assessment to be able to understand impacts and potential restoration should a failure occur.

Response

In response to requests from First Nations and the regulators, Telkwa Mining committed to conducting expanded spawning surveys, fish abundance surveys, fish habitat surveys, and CABIN sampling, all which were completed in 2024 and 2025.

Additional fisheries information collected in 2024 and 2025 do not change the results of the Tenas Project effects assessment or alter the “not significant” effects on fisheries of the Tenas Project. Results of these studies will be summarized for the permitting process.

Comment 13

13 As only 9 individuals were captured for this analysis it presents very limited utility. (This question concerns the Visual Assessment of captured 0-3 year old rainbow trout to identify individual fish that would likely out-migrate as smolts to the ocean bases on biophysical characteristics).

Response

Telkwa Mining agrees with this comment. Rainbow trout captures were low, particularly in the age class to support the visual assessment. Further rainbow trout sampling has been completed in 2024 and 2025 as result of OW's concern.

The information currently reported in the EAC application is adequate for the EA process and this additional information will be summarized in the permitting process.

Comment 14

14 The use of the Triton 1998 data to assess the tributary streams provides limited insight into their current status and may undervalue the potential habitat. These surveys were conducted following significant impacts of logging to these streams, during an era when logging practices typically failed to prevent impacts. Utilizing this data creates a potential cumulative impact on this watershed whereby these tributaries are undervalued and thus impacts of the current project not sufficiently compensated for relative to a true historical baseline. Even if these streams do not provide direct spawning habitat they likely provide flow and other inputs into downstream spawning and rearing areas.

Response

Tenas Creek tributaries flowing into Tenas Creek from the east (within the proposed mine footprint), were revisited in 2024 to assess channel morphology, continuity, flows, and suitability as fish habitat. This data will be used to supplement and update fish habitat data collected in Triton (1998). Results of the fish habitat surveys will be summarized in the permitting process.

Additional fisheries information collected in 2024 and 2025 do not change the results of the Tenas Project effects assessment or alter the “not significant” effects on fisheries of the Tenas Project. Results of these studies will be summarized for the permitting process.

Comment 15

15 The timing of the Summer Juvenile Survey precludes its usefulness for the morphometric analysis which follows. Steelhead smolts typically out-migrate during the spring, therefore the likeliness of observing individuals in late August which are displaying smolt characteristics is unlikely. As noted in Hecht et al. 2015 "Smolting rainbow trout generally experience higher levels of growth in the spring of their second year just prior to their outmigration when compared to non-smolts" therefore by looking at 2+ and 3+ individuals captured in August, those would represent Rainbow Trout that are more likely to be resident fish.

Response

In response to requests from First Nations and the regulators, Telkwa Mining committed to conducting fish abundance surveys in 2024 and 2025, including rainbow trout/steelhead. Abundance surveys consisted of closed, multiple-pass depletion sampling in all fish-bearing reaches of Goathorn, Tenas, and Four Creeks. Results will be summarized for the permitting process.

Statement of Limitations

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Closure

If you have any questions or concerns regarding this memo, please contact a team member below.

Regards,

SLR Consulting (Canada) Ltd.



Kirby Ottenbreit
Principal Fisheries Biologist



Rick Palmer
Managing Principal, Mining Sector Lead

Attachments Table of Responses
Appendix A: SLR Consulting (Canada) Ltd. 2025. Four Creek Watershed: Groundwater Surface Water Interaction Investigation and Water Balance Model Development. Prepared for Telkwa Mining Limited

Table of Responses

Response to comments put forward by the Skin Tyee Nation regarding the Tenas Coal Mine Environmental Assessment

Telkwa Mining Ltd.

SLR Project No.: 201.089602.00001

September 24, 2025

Skin Tyee Nation
P.O. Box 131
Southbank, BC
V0J 2P0

Proposed Tenas Project Fish and Fish Habitat IR Response Technical Advisory Subcommittee Comments

Comment number	Agency	Date	Fish IR Response Document Name	Section of Document	Comment	TML Response	SLR Response
1	Skin Tyee First Nation	9-Sep-25	Enclosure 1 RESPONSE TO COMMENTS PUT FORWARD BY THE OFFICE OF THE WET'SUWET'EN REGARDING THE TENAS COAL MINE ENVIRONMENTAL ASSESSMENT, SLR	2.2 Comment OW-035	The 2023 Spring Spawner survey was not sufficient in scope or scale to accurately identify Steelhead spawning habitat, as the survey was restricted to only a two day period and only 200m sections of each survey reach were investigated. Repeated surveys should be conducted and much larger areas of the streams should be surveyed.	Additional work has been carried out in 2024 and 2025 related to spawning for trout species. As stated it is not possible to distinguish Steelhead spawning habitat from Rainbow Trout spawning habitat. This will be completed 2025 and the results will be provided in Q2, 2026.	In response to requests from First Nations and the regulators in 2022, TML committed to conducting additional fall spawning surveys in 2024 and 2025 for anadromous salmon species and Dolly Varden. The fall surveys comprise a combination of walking, flying (helicopter), and remote aerial surveys (unmanned aerial vehicle [UAV]) along the length of the anadromous reaches of Tenas and Goathorn Creeks, and in the middle reaches of Four Creek. Preliminary results indicate that salmon spawning habitat is sparsely distributed in Tenas Creek and very limited in Goathorn Creek. Additional fisheries information collected in 2024 and 2025 do not change the results of the Tenas Project effects assessment or alter the "not significant" effects on fisheries of the Tenas Project. Results of these studies will be summarized for the permitting process. The Telkwa Mining is committed to continue to study spawning for trout species and will outline annual monitoring and studies to be conducted as part of the Fisheries Management Plan for the development of the mine . Fish and Fish habitat Yintah Management Directives (YMD) – Enhanced Environmental Management Plan will be amended in collaboration with regulators and the OW during the permitting process. The information currently reported in the EAC application is adequate for the EA process and this additonal information will be summarized for the permitting process.
2	Skin Tyee First Nation	9-Sep-25	Enclosure 1 RESPONSE TO COMMENTS PUT FORWARD BY THE OFFICE OF THE WET'SUWET'EN REGARDING THE TENAS COAL MINE ENVIRONMENTAL ASSESSMENT, SLR	2.5 Comment OW-052	To accurately assess fish abundance for Tenas and Goathorn Creek an appropriate survey effort would be to have survey reaches throughout each watershed including major tributaries and to survey 3 sites per reach to create an average of variability, these surveys would then be repeated seasonally at a minimum.	This was completed in 2024 and a follow up survey planned for 2025 and the results will be provided in Q2, 2026.	In response to requests from First Nations and the regulators, TML committed to conducting fish abundance surveys in 2024 and 2025. Abundance surveys consisted of closed, multiple-pass depletion sampling in all fish-bearing reaches of Goathorn, Tenas, and Four Creeks. TML understands this request for information to have been met. Furthermore, TML invites Skin Tyee FN to attend field work currently on-going in Goathorn, Tenas and Four Creeks to learn directly more about the fisheries within these systems. The information currently reported in the EAC application is adequate for the EA process and this additonal information will be summarized for the permitting process.
3	Skin Tyee First Nation	9-Sep-25	Enclosure 1 RESPONSE TO COMMENTS PUT FORWARD BY THE OFFICE OF THE WET'SUWET'EN REGARDING THE TENAS COAL MINE ENVIRONMENTAL ASSESSMENT, SLR	2.7 Comment OW-055	The question from OW regarding potential use of the Project Area by other salmonids was not adequately addressed and should include information regarding use of the Telkwa River that is part of the regional assessment area, as it is known to be utilized by coho, Chinook and pink salmon as a migration pathway and potentially a spawning area. Coho were mentioned in the question and not addressed in the answer despite them being one of the most likely other salmonids to utilize the project area for spawning. Fall spawner surveys will have to be conducted on a much expanded scope both in terms of area and effort relative to the Steelhead spawner surveys.	This was completed in 2024 and a follow up survey planned for 2025 and the results will be provided in Q2, 2026.	In response to requests from First Nations and the regulators in 2022, TML committed to conducting additional fall spawning surveys in 2024 and 2025 for anadromous salmon species and Dolly Varden. The fall surveys comprise a combination of walking, flying (helicopter), and remote aerial surveys (unmanned aerial vehicle [UAV]) along the length of the anadromous reaches of Tenas and Goathorn Creeks, and in the middle reaches of Four Creek. Preliminary results indicate that salmon spawning habitat is sparsely distributed in Tenas Creek and very limited in Goathorn Creek. Additional fisheries information collected in 2024 and 2025 do not change the results of the Tenas Project effects assessment or alter the "not significant" effects on fisheries of the Tenas Project. Results of these studies will be summarized for the permitting process. The Telkwa Mining is committed to continue to study spawning for trout species and will outline annual monitoring and studies to be conducted as part of the Fisheries Management Plan for the development of the mine . Fish and Fish habitat Yintah Management Directives (YMD) – Enhanced Environmental Management Plan will be amended in collaboration with regulators and the OW during the permitting process. The information currently reported in the EAC application is adequate for the EA process and this additonal information will be summarized for the permitting process.

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4	Skin Tyee First Nation	9-Sep-25	Enclosure 1 RESPONSE TO COMMENTS PUT FORWARD BY THE OFFICE OF THE WET'SUWET'EN REGARDING THE TENAS COAL MINE ENVIRONMENTAL ASSESSMENT, SLR	2.8 Comment OW-056	The relative effort put towards the spawner surveys presented in the "The Steelhead Memorandum (Palmer 2024a, Appendix A)" was insufficient to potentially accurately describe Steelhead spawning in Goathorn and Tenas Creek. A proper survey should be conducted which would involve walks of entire stream reaches on the km scale, not just 100m sections, and these surveys should be repeated at least three times over a multiple week window as is typical for standard spawning surveys.	Additional work has been carried out in 2024 and 2025 related to spawning for trout species. As stated it is not possible to distinguish Steelhead spawning habitat from Rainbow Trout spawning habitat. This will be completed 2025 and the results will be provided in Q2, 2026.	In response to requests from First Nations and the regulators in 2022, TML committed to conducting additional fall spawning surveys in 2024 and 2025 for anadromous salmon species and Dolly Varden. The fall surveys comprise a combination of walking, flying (helicopter), and remote aerial surveys (unmanned aerial vehicle [UAV]) along the length of the anadromous reaches of Tenas and Goathorn Creeks, and in the middle reaches of Four Creek. Preliminary results indicate that salmon spawning habitat is sparsely distributed in Tenas Creek and very limited in Goathorn Creek. Additional fisheries information collected in 2024 and 2025 do not change the results of the Tenas Project effects assessment or alter the "not significant" effects on fisheries of the Tenas Project. Results of these studies will be summarized for the permitting process. The Telkwa Mining is committed to continue to study spawning for trout species and will outline annual monitoring and studies to be conducted as part of the Fisheries Management Plan for the development of the mine . Fish and Fish habitat Yintah Management Directives (YMD) – Enhanced Environmental Management Plan will be amended in collaboration with regulators and the OW during the permitting process. The information currently reported in the EAC application is adequate for the EA process and this additonal information will be summarized for the permitting process.
5	Skin Tyee First Nation	9-Sep-25	Enclosure 1 RESPONSE TO COMMENTS PUT FORWARD BY THE OFFICE OF THE WET'SUWET'EN REGARDING THE TENAS COAL MINE ENVIRONMENTAL ASSESSMENT, SLR	2.9 Comment OW-109	As with Comment OW 055 the answer fails to address coho salmon which are known to be a widely distributed salmon species in the Skeena River watershed, and are known to spawn in the Telkwa River.	see answer to OW-055	In response to requests from First Nations and the regulators in 2022, TML committed to conducting additional fall spawning surveys in 2024 and 2025 for anadromous salmon species and Dolly Varden. The fall surveys comprise a combination of walking, flying (helicopter), and remote aerial surveys (unmanned aerial vehicle [UAV]) along the length of the anadromous reaches of Tenas and Goathorn Creeks, and in the middle reaches of Four Creek. Preliminary results indicate that salmon spawning habitat is sparsely distributed in Tenas Creek and very limited in Goathorn Creek. Additional fisheries information collected in 2024 and 2025 do not change the results of the Tenas Project effects assessment or alter the "not significant" effects on fisheries of the Tenas Project. Results of these studies will be summarized for the permitting process. The Telkwa Mining is committed to continue to study spawning for trout species and will outline annual monitoring and studies to be conducted as part of the Fisheries Management Plan for the development of the mine . Fish and Fish habitat Yintah Management Directives (YMD) – Enhanced Environmental Management Plan will be amended in collaboration with regulators and the OW during the permitting process. The information currently reported in the EAC application is adequate for the EA process and this additonal information will be summarized for the permitting process.
6	Skin Tyee First Nation	9-Sep-25	Enclosure 1 RESPONSE TO COMMENTS PUT FORWARD BY THE OFFICE OF THE WET'SUWET'EN REGARDING THE TENAS COAL MINE ENVIRONMENTAL ASSESSMENT, SLR	2.11 Comment OW-111	To accurately assess fish abundance for Tenas and Goathorn Creek an appropriate survey effort would be to have survey reaches throughout each watershed including major tributaries and to survey 3 sites per reach to create an average of variability, these surveys would then be repeated seasonally at a minimum.	This was completed in 2024 and a follow up survey planned for 2025 and the results will be provided in Q2, 2026.	In response to requests from First Nations and the regulators, TML committed to conducting fish abundance surveys in 2024 and 2025. Abundance surveys consisted of closed, multiple-pass depletion sampling in all fish-bearing reaches of Goathorn, Tenas, and Four Creeks. TML understands this request for information to have been met. Furthermore, TML invites Skin Tyee FN to attend field work currently on-going in Goathorn, Tenas and Four Creeks to learn directly more about the fisheries within these systems. The information currently reported in the EAC application is adequate for the EA process and this additonal information will be summarized for the permitting process.

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7	Skin Tyee First Nation	9-Sep-25	Enclosure 1 RESPONSE TO COMMENTS PUT FORWARD BY THE OFFICE OF THE WET'SUWET'EN REGARDING THE TENAS COAL MINE ENVIRONMENTAL ASSESSMENT, SLR	2.13 Comment OW-113	The options present by OW are a clear demonstration of the cumulative effects which are already impacting salmonid habitat in the assessment area. The concern around restoring connectivity to Four Creek is flawed according to the reference provided by the proponent. The Nonis et al. 2023 study demonstrates the importance of providing and protecting pool habitats in the area where these species overlap, and does not provide any evidence of Dolly Varden being displaced by Rainbow Trout. The Taniguchi et al. 2000 is looking at an introduced rainbow trout population in a small stream in Japan, and only looked at potential red imposition. As these native species are known to co-occur in these types of systems as demonstrated by Nonis et al. 2023, it seems likely that restoration of Four Creek would return the area to a more natural state and that Dolly Varden and Rainbow Trout would co-occur without significant negative impacts to the Dolly Varden population. The likelihood of this would rely on proper pool habitats being protected and restored in those areas. Reducing project impacts on Four Creek, such as the 24% decrease in winter baseline flows, would have to occur for this restoration to be successful and for sympatric use.	Allowing the culvert to be fish passable is one of the offsetting options that Telkwa Mining is conducting additional work on. In terms of flow reduction in Four Creek please review Attachment 7-1	TML is exploring the option of eliminating the existing culvert barrier on Four Creek to allow upstream access for fish from Goathorn Creek as part of offsetting planning for the Project. Changes to water management and updated groundwater/surface water modeling predicts much lower reductions in Four Creek than those presented in the EAC. Please see attached Appendix A for further details of the current groundwater/surface water interactions study.
8	Skin Tyee First Nation	9-Sep-25	Enclosure 1 RESPONSE TO COMMENTS PUT FORWARD BY THE OFFICE OF THE WET'SUWET'EN REGARDING THE TENAS COAL MINE ENVIRONMENTAL ASSESSMENT, SLR	2.14 Comment OW-114	Offsetting plans should be designed and implemented prior to any impacts to fish habitats, otherwise time lags should be part of the calculation of the appropriate offsetting ratio.	Agreed this is a requirement of federal fisheries legislation.	If offsetting is required for predicted fish and fish habitat impacts as a result of the Project, offsetting options will be designed and implemented in advance of habitat impacts to fish habitat in accordance with legislation in the federal Fisheries Act. In the event this is not practicable, time lag and lost productivity will be considered in the accounting of the habitat balance between habitat impacts and habitat offsetting.
9	Skin Tyee First Nation	9-Sep-25	Enclosure 1 RESPONSE TO COMMENTS PUT FORWARD BY THE OFFICE OF THE WET'SUWET'EN REGARDING THE TENAS COAL MINE ENVIRONMENTAL ASSESSMENT, SLR	2.15 Comment OW-116	Proper surveys of both adults and juveniles in Goathorn, Tenas and Four Creek should include repeated surveys, as is noted by the proponent in their answer "spawning runs can be missed if surveys do not align precisely with the timing of fish migration and spawning activity. Therefore, the lack of recent observations is more likely attributed to survey timing and interannual variability rather than a true absence of these species. Expanding the scope of survey timing would allow better characterization of potential spawning activity in these areas. As such STFN would disagree with the statement that "the data in the Application is sufficient for the EA process."	This was completed in 2024 and a follow up survey planned for 2025 and the results will be provided in Q2, 2026.	In response to requests from First Nations and the regulators in 2022, TML committed to conducting additional fall spawning surveys in 2024 and 2025 for anadromous salmon species and Dolly Varden. The fall surveys comprise a combination of walking, flying (helicopter), and remote aerial surveys (unmanned aerial vehicle [UAV]) along the length of the anadromous reaches of Tenas and Goathorn Creeks, and in the middle reaches of Four Creek. Preliminary results indicate that salmon spawning habitat is sparsely distributed in Tenas Creek and very limited in Goathorn Creek. Additional fisheries information collected in 2024 and 2025 do not change the results of the Tenas Project effects assessment or alter the "not significant" effects on fisheries of the Tenas Project. Results of these studies will be summarized for the permitting process. The Telkwa Mining is committed to continue to study spawning for trout species and will outline annual monitoring and studies to be conducted as part of the Fisheries Management Plan for the development of the mine . Fish and Fish habitat Yintah Management Directives (YMD) – Enhanced Environmental Management Plan will be amended in collaboration with regulators and the OW during the permitting process. The information currently reported in the EAC application is adequate for the EA process and this additonal information will be summarized for the permitting process.
10	Skin Tyee First Nation	9-Sep-25	Enclosure 1 RESPONSE TO COMMENTS PUT FORWARD BY THE OFFICE OF THE WET'SUWET'EN REGARDING THE TENAS COAL MINE ENVIRONMENTAL ASSESSMENT, SLR	2.16 Comment OW-117	Although a Letter of Credit is helpful it does not guarantee that time lags will be accounted for. If significant time lags occur before the habitat becomes functional then additional offsetting should occur to make up for lost productivity. Offsetting plans should be developed in collaboration with the impacted communities and joint monitoring of the effectiveness of these offsetting measures should be undertaken.	Agreed this is a requirement of federal fisheries legislation.	If offsetting is required for predicted fish and fish habitat impacts as a result of the Project, offsetting options will be designed and implemented in advance of habitat impacts to fish habitat in accordance with legislation in the federal Fisheries Act. In the event this is not practicable, time lag and lost productivity will be considered in the accounting of the habitat balance between habitat impacts and habitat offsetting.

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11	Skin Tyee First Nation	9-Sep-25	Enclosure 1 RESPONSE TO COMMENTS PUT FORWARD BY THE OFFICE OF THE WET'SUWET'EN REGARDING THE TENAS COAL MINE ENVIRONMENTAL ASSESSMENT, SLR	2.17 Comment OW-119	To properly plan for catastrophic failures, better data needs to be collected on salmonid habitat and habitat use of downstream area in the Regional Assessment Area and likely beyond. The habitats downstream in the Telkwa, Bulkley and Skeena Rivers represent important migration pathways and juvenile rearing areas for multiple salmon species and a catastrophic failure could have major impacts depending on the timing and the scale at which it occurs. Considering that the assessment rates the hazard classification as "Very High" for each of the four dams considered, adequate data needs to be collected on downstream salmon habitats with an appropriate assessment area, based on the modelled "Danger areas" presented in the assessment to be able to understand impacts and potential restoration should a failure occur.	This was completed in 2024 and a follow up survey planned for 2025 and the results will be provided in Q2, 2026.	In response to requests from First Nations and the regulators, TML committed to conducting expanded spawning surveys, fish abundance surveys, fish habitat surveys, and CABIN sampling, all which were completed in 2024 and 2025. Additional fisheries information collected in 2024 and 2025 do not change the results of the Tenas Project effects assessment or alter the "not significant" effects on fisheries of the Tenas Project. Results of these studies will be summarized for the permitting process. During the permitting process, Telkwa Mining will invite Wet'suwet'en peoples (OW, House Cas Yex, Witset FN, Skin Tyee FN, and Wet'suwet'en FN) to collaborate on amending the Tenas Fish and Fish habitat Yintah Management Directives (YMD) – Enhanced Environmental Management Plan.
12	Skin Tyee First Nation	9-Sep-25	Appendix A BC EAO EAC Application Information Request - Response to BC Ministry of Water, Land and Resource Stewardship Information Request	Table 2. Steelhead Survey Locations, 20	Why were the water quality stations chosen as the survey locations, and how was 100m upstream and downstream chosen as the survey length? Typical spawner surveys consist of walking entire stream reaches as opposed to short segments. Only surveying 600m of stream length per creek seems like a very limited effort compared to the scope and scale of the project. Based on the number of potential spawning pairs in each creek proposed by Bustard (1985), greater effort would likely be required to observe spawning activity.		In response to requests from First Nations and the regulators in 2022, TML committed to conducting additional fall spawning surveys in 2024 and 2025 for anadromous salmon species and Dolly Varden. The fall surveys comprise a combination of walking, flying (helicopter), and remote aerial surveys (unmanned aerial vehicle [UAV]) along the length of the anadromous reaches of Tenas and Goathorn Creeks, and in the middle reaches of Four Creek. Preliminary results indicate that salmon spawning habitat is sparsely distributed in Tenas Creek and very limited in Goathorn Creek. Additional fisheries information collected in 2024 and 2025 do not change the results of the Tenas Project effects assessment or alter the "not significant" effects on fisheries of the Tenas Project. Results of these studies will be summarized for the permitting process. The Telkwa Mining is committed to continue to study spawning for trout species and will outline annual monitoring and studies to be conducted as part of the Fisheries Management Plan for the development of the mine . Fish and Fish habitat Yintah Management Directives (YMD) – Enhanced Environmental Management Plan will be amended in collaboration with regulators and the OW during the permitting process. The information currently reported in the EAC application is adequate for the EA process and this additonal information will be summarized for the permitting process.
13	Skin Tyee First Nation	9-Sep-25	Appendix A BC EAO EAC Application Information Request - Response to BC Ministry of Water, Land and Resource Stewardship Information Request	2.5 Visual Assessment	As only 9 individuals were captured for this analysis it presents very limited utility.	Agreed	TML agrees with this comment. Rainbow trout captures were low, particularly in the age class to support the visual assessment. Further rainbow trout sampling has been completed in 2024 and 2025 as result of OW's concern. The information currently reported in the EAC application is adequate for the EA process and this additonal information will be summarized in the permitting process.
14	Skin Tyee First Nation	9-Sep-25	Appendix A BC EAO EAC Application Information Request - Response to BC Ministry of Water, Land and Resource Stewardship Information Request	3.1 Historical Data Review	The use of the Triton 1998 data to assess the tributary streams provides limited insight into their current status and may undervalue the potential habitat. These surveys were conducted following significant impacts of logging to these streams, during an era when logging practices typically failed to prevent impacts. Utilizing this data creates a potential cumulative impact on this watershed whereby these tributaries are undervalued and thus impacts of the current project not sufficiently compensated for relative to a true historical baseline. Even if these streams do not provide direct spawning habitat they likely provide flow and other inputs into downstream spawning and rearing areas.		Tenas Creek tributaries flowing into Tenas Creek from the east (within the proposed mine footprint), were revisited in 2024 to assess channel morphology, continuity, flows, and suitability as fish habitat. This data will be used to supplement and update fish habitat data collected in Triton (1998). Results of the fish habitat surveys will be summarized in the permitting process. Additional fisheries information collected in 2024 and 2025 do not change the results of the Tenas Project effects assessment or alter the "not significant" effects on fisheries of the Tenas Project. Results of these studies will be summarized for the permitting process.
15	Skin Tyee First Nation	9-Sep-25	Appendix A BC EAO EAC Application Information Request - Response to BC Ministry of Water, Land and Resource Stewardship Information Request	3.4 Summer Juvenile Survey	The timing of the Summer Juvenile Survey precludes its usefulness for the morphometric analysis which follows. Steelhead smolts typically outmigrate during the spring, therefore the likeliness of observing individuals in late August which are displaying smolt characteristics is unlikely. As noted in Hecht et al. 2015 " Smolting rainbow trout generally experience higher levels of growth in the spring of their second year just prior to their outmigration when compared to non-smolts" therefore by looking at 2+ and 3+ individuals captured in August, those would represent Rainbow Trout that are more likely to be resident fish.	Agreed	In response to requests from First Nations and the regulators, TML committed to conducting fish abundance surveys in 2024 and 2025, including rainbow trout/steelhead. Abundance surveys consisted of closed, multiple-pass depletion sampling in all fish-bearing reaches of Goathorn, Tenas, and Four Creeks. Results will be summarized for the permitting process.

Appendix A SLR Four Creek Watershed: Groundwater Surface Water Interaction Investigation and Water Balance Model Development

Response to comments put forward by the Skin Tyee Nation regarding the Tenas Coal Mine Environmental Assessment

Telkwa Mining Ltd.

SLR Project No.: 201.089602.00001

September 24, 2025

Four Creek Watershed

Groundwater Surface Water Interaction Investigation and Water Balance Model Development

Telkwa Coal Limited

1415 Hankin Avenue, Telkwa, BC V0J 2X0

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SLR Project No.: 201.V24219.00000

September 5, 2025

Revision: 0

Revision Record

Revision	Date	Prepared By	Checked By	Authorized By
0	September 5, 2025	Glenn Hall / Joanna Borzecki	Tomaso Marangoni / Stefan Gronsdahl	Rick Palmer

Statement of Limitations

This report has been prepared by SLR Consulting (Canada) Ltd. (SLR) for Telkwa Coal Limited (Client) in accordance with the scope of work and all other terms and conditions of the agreement between such parties. SLR acknowledges and agrees that the Client may provide this report to government agencies, interest holders, and/or Indigenous communities as part of project planning or regulatory approval processes. Copying or distribution of this report, in whole or in part, for any other purpose other than as aforementioned is not permitted without the prior written consent of SLR.

Any findings, conclusions, recommendations, or designs provided in this report are based on conditions and criteria that existed at the time work was completed and the assumptions and qualifications set forth herein.

This report may contain data or information provided by third party sources on which SLR is entitled to rely without verification and SLR does not warranty the accuracy of any such data or information.

Nothing in this report constitutes a legal opinion nor does SLR make any representation as to compliance with any laws, rules, regulations, or policies established by federal, provincial territorial, or local government bodies, other than as specifically set forth in this report. Revisions to legislative or regulatory standards referred to in this report may be expected over time and, as a result, modifications to the findings, conclusions, or recommendations may be necessary.



Executive Summary

The Four Creek Watershed Study conducted by SLR Consulting (Canada) Ltd. (SLR), for Telkwa Coal Limited (Telkwa Coal) provides a comprehensive analysis of the Four Creek Watershed, focusing on the impacts of mining activities by Telkwa Coal. The study aims to quantify the expected loss of flow in Four Creek due to mine activities. The Tenas Project is a proposed surface coal mine owned by Telkwa Mining Ltd., located in northwestern British Columbia. The project includes an open pit mine, coal processing plant, water management infrastructure, and ancillary facilities. The study aims to develop an accurate representation of groundwater and surface water processes in Four Creek and assess the impact of mine development on these processes.

Four Creek is a tributary to Goathorn Creek, flowing along the perimeter of the proposed open pit. It supports a resident Dolly Varden fish population and is identified as fish habitat in the Project's Environmental Assessment (EA) application[1].

According to the findings of the EA, the construction and operation of the mine are expected to reduce groundwater contributions to Four Creek by 30-35%, potentially affecting fish habitat due to streamflow reduction.

This study addresses information gaps in hydrogeology and hydrology, specifically for the Four Creek watershed, and aims to refine modelled streamflow losses and habitat loss estimates.

The study comprised of stream discharge measurements, conductivity surveys, groundwater level monitoring, and groundwater and surface water chemistry analyses at selected locations within the Four Creek watershed. These field measurements were then used to calibrate a hydrological model to interpret how proposed mine infrastructure might impact Four Creek's streamflow.

The findings of the field study confirm that Four Creek is a perched system and the watershed model developed by SLR suggests that monthly streamflow is expected to increase anywhere from 4% to 11% from baseline conditions under the operations phase. The increase in streamflow, despite the loss in the overall watershed area due to proposed mine infrastructure, is primarily due to the influence of diversion Channel C02, which capture water from adjacent hillslopes and increase the contributing area of Four Creek. During the closure and post-closure phases, the predicted change in streamflow ranges from a 0% to -7% difference relative to baseline conditions.

[1] In February 2022, Telkwa Mining applied for an EA certificate, which was accepted for review by the Environmental Assessment Office (EAO) in April 2022 (Telkwa Coal Ltd. 2022). The EA application is currently in the development and review stage. Telkwa Mining and their consultants are working on addressing comments from the EAO Technical Advisory Committee and First Nations involved in the Project.

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Appendices

Appendix A **Mini Piezometers MP5S/D**

Appendix B **Summary of 2024 Water Quality Results**

Appendix C **Certificate of Analysis**

Appendix D **Summary of 2024 Field Conductivity Measurements**

Appendix E **Piper Diagrams**

Acronyms and Abbreviations

AV	Area-Velocity
BC	British Columbia
BEC	Biogeoclimatic Ecosystem Classification
Ca	calcium
$CaHCO_3$	calcium bicarbonate
CPP	Coal Processing Plant
cm	centimetre
EA	Environmental Assessment
EAO	Environmental Assessment Office
EFN	environmental flow needs
EOM	End of Mine
ESSF	Engelmann Spruce-Subalpine Fir
FHCP	Fish Habitat Compensation Plan
HCO_3	bicarbonate
HRU	Hydrologic Response Unit
km	kilometre
m	metre
mm	millimetre
masl	metres above sea level
mbgs	metres below ground surface
mbtoc	metres below top of casing
MP	mini piezometer
MW	monitoring well
NRMSE	Normalized Root Mean Square Error
NSE	Nash-Sutcliffe Efficiency
PAG	potential acid generating
PBIAS	Percent Bias
PET	potential evapotranspiration
SBS	Sub-Boreal Spruce
SRK	SRK Consulting
SW	surface water
Telkwa Mining	Telkwa Mining Ltd.
VGH	vertical hydraulic gradient

1.0 Introduction

1.1 Background

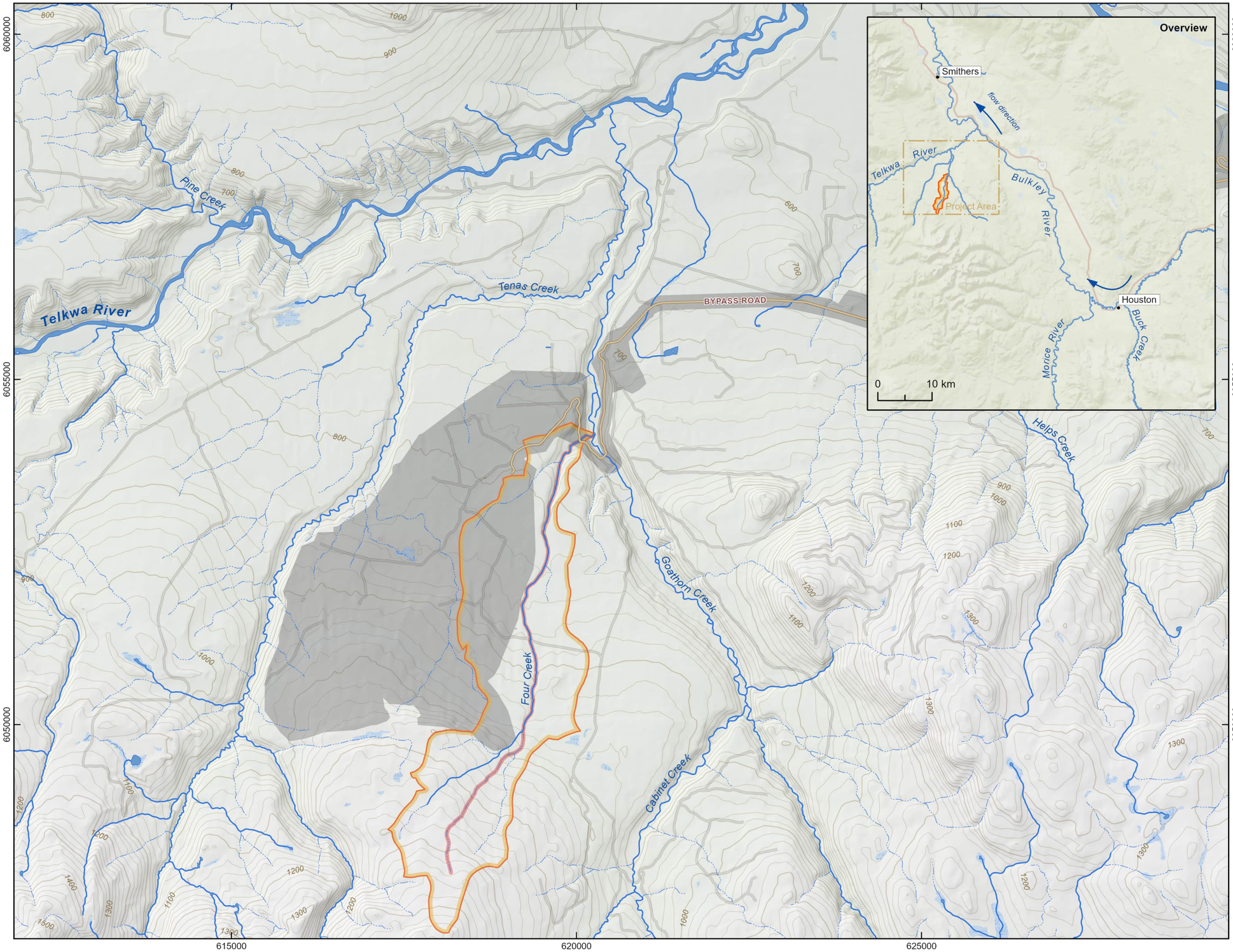
The Tenas Project (the Project) is a proposed surface coal mine owned and operated by Telkwa Mining Ltd. (Telkwa Mining) located 25 kilometres (km) south of Smithers and 7 km southwest of Telkwa in northwestern British Columbia (BC; Figure 1). The Project includes an open pit mine with a coal processing plant, water management infrastructure, ancillary facilities, train infrastructure, and a series of management ponds which will contain submerged, potentially acid-generating materials. The expected life-of-mine is approximately 26.5 years, which includes construction, operation, decommission, and reclamation phases.

The Project entered the BC Environmental Assessment (EA) process in November 2018, with the submission of the Project Description (Telkwa Coal 2022). The Project Description submission included baseline reporting for the period from 2017 to 2019 which characterized the baseline conditions for climate, noise, fish habitat, and groundwater, surface water, and sediment conditions (ERM 2020). In February 2022, Telkwa Mining applied for an EA certificate. The EA application was accepted for review by the Environmental Assessment Office (EAO) in April 2022 and is currently in the development and review stage (Telkwa Coal 2022). As a part of the review process, Telkwa Mining and their consultants are working on addressing comments from the EAO Technical Advisory Committee and First Nations involved in the Project.

1.2 Study Area

The Project lies between Tenas Creek, Goathorn Creek, and Four Creek, each of which are within the Telkwa River watershed (Figure 1). The Telkwa River is a tributary to the Bulkley River, which feeds into the Skeena River, and ultimately drains into the Pacific Ocean approximately 180 km west of the project.

Four Creek is a tributary to Goathorn Creek and flows along the perimeter of the Project's proposed open pit. The creek is approximately 7 km long and flows into Goathorn Creek approximately 4 km upstream of the confluence of Goathorn Creek and Tenas Creek. The upper reaches of Four Creek provide fish habitat that supports a resident Dolly Varden (*Salvelinus malma*) population (Figure 2). For this reason, Four Creek was identified as fish habitat in the Project's EA application (Telkwa Coal 2022).



KEY MAP



LEGEND

- Watercourse[1]
- Intermittent or Indeterminate Watercourse[1]
- Four Creek[1]
- Resource Road[2]
- Proposed Bypass Road
- Wetland[1]
- Proposed Project Footprint
- Four Creek Watershed[1]

1 - BC Freshwater Atlas
2 - BC Digital Road Atlas (for clarity, not all roads displayed)

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KILOMETRE SCALE

North American Datum 1983
Universal Transverse Mercator Projection Zone 9 North

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Source Notes:
Base map data provided by Natural Resources Canada (CanVec, CDEM) and The Government of British Columbia (BC Freshwater Atlas, Digital Road Atlas). Contour interval is 20 metres (minor) and 100 metres (major). All elevations in metres above sea level.

CLIENT
Telkwa Coal

PROJECT
Tenas Project

TITLE
Project Location and Site Overview

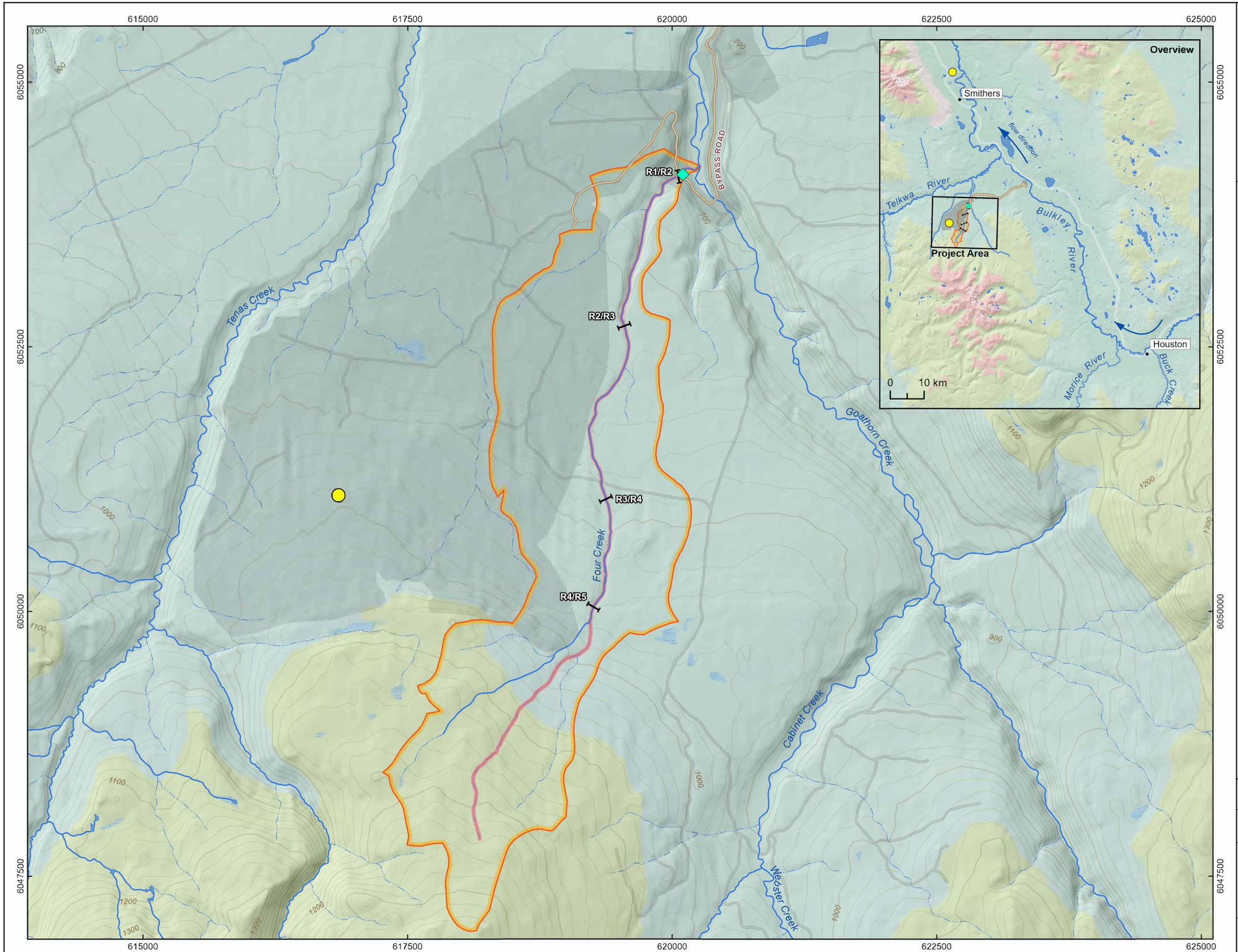
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Figure 1

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KEY MAP



LEGEND

- Hydrometric Station[1]
- Weather Station[1-2]
- Reach Break
- Watercourse[3]
- Intermittent or Indeterminate Watercourse[3]
- Four Creek[3]
- Resource Road[4]
- Proposed Bypass Road
- Wetland[3]
- Proposed Project Footprint
- Four Creek Watershed[3]

Biogeoclimatic Zone[5]

- Boreal Altai Fescue Alpine
- Engelmann Spruce -- Subalpine Fir
- Interior Cedar -- Hemlock
- Sub-Boreal Spruce

1 - Environmental Resources Management (ERM)
2 - Environment Canada
3 - BC Freshwater Atlas
4 - BC Digital Road Atlas (for clarity, not all roads displayed)
5 - BC Government Forest Analysis and Inventory

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Universal Transverse Mercator Projection Zone 9 North

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Checked: GH
Date: September 3, 2025

NORTH

Source Notes:
Base map data from Natural Resources Canada (CanVec, CDEM) and the Government of British Columbia (BC Freshwater Atlas, Digital Road Atlas). Hydrometric and weather station data provided by ERM, except for the Smithers weather station, which is sourced from Environment Canada. Biogeoclimatic Zones provided by the BC Government's Forest Analysis and Inventory Branch. Contour interval: 20 metres (minor), 100 metres (major). All elevations are in metres above sea level.

CLIENT
Telkwa Coal

PROJECT
Tenas Project

TITLE
Four Creek Reach Breaks, Biogeoclimatic Zones, and Weather Station Locations

SLR

REF. NO. 2404901-MR-016-01

Figure 2

REV. 1

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1.3 Natural Function of Four Creek

Four Creek is a small, headwater watercourse that provides habitat to a resident Dolly Varden trout population (Figure 3). The hydrology of Four Creek is shaped by seasonal variability. In winter, most precipitation falls as snow, some of which is intercepted by the forest canopy, reducing the amount that reaches the ground directly. Annual low flows occur during winter months.

Figure 3: Examples of Four Creek channel conditions along various reaches taken on June 4 and 5 2024. Looking upstream at station R-03 (left) and looking downstream at station R-07



In spring, rising temperatures cause the snow to melt, leading to increased runoff. Peak flows, which are important for maintaining channel morphology and flushing fine sediment and debris, typically occur as a result of this snowmelt freshet. Periods of higher flows during freshet provide sufficient wetted habitat to allow for adult salmonid migration and passage throughout the channel network.

Shallow interflow plays a key role in the watershed's hydrology. This subsurface flow, which is above the water table occurs when water infiltrates the thin surficial layer of till and moves laterally through the shallow groundwater system before entering the channel network. Interflow is the key driver of lowflows/baseflow in Four Creek, which is the portion of streamflow that remains during dry periods. These flows are especially important during summer low flow periods that occur between rain events.

The bedrock groundwater system and the deep overburden groundwater flow circulation discharge into the Telkwa River, Tenas Creek and Goathorn Creek.
Four Creek watershed has valleys moderately incised which are not expected to be a discharge location for bedrock groundwater system and the deep overburden groundwater flow circulation.

Annual low flows occur during winter months. Despite lower surface runoff, shallow groundwater helps maintain isolated pools within Four Creek.

1.4 Previous Assessments of Four Creek

The Groundwater Numerical Model presented in the Project's EA application indicated that groundwater was the dominant source of baseflow to Four Creek during the winter months (SRK 2022a), and that the construction and operation of the Project's open pit could draw down the groundwater table in the Four Creek watershed (SRK 2022b). SRK developed a conceptual groundwater model to determine the impact of the proposed mine on baseflows into Four Creek (2022a). SRK Consulting (SRK) modeled two scenarios, a base case that corresponded to the model that achieved the best fit to field data, and a high case that resulted in a 'worst case' reduction in streamflow by maximizing hydraulic conductivities within a minimum generally accepted calibration range (SRK 2022a).

As defined by SRK (2022a), the end of year 7 phase represents the mine during operations. The End of Mine (EOM) scenario represents the mine when it is fully excavated, approximately 22 years into the operation. Their results for the location at the mouth of Four Creek (Four Creek U/S Goathorn Creek) are presented in Table 1.

Table 1: Modeled changes to Four Creek baseflows at "Four Creek U/S Goathorn Creek" station, as presented by SRK (2022a). Changes to net baseflow compared to baseline conditions are presented as percentages.

Model scenario	End of year 7	End of mine
Base case	-14.3%	-10.7%
High case	-50.4%	-25.2%
Note: Modeling results for the post-closure phase were not included in the SRK report (2022a).		

The numerical model was constructed using a finite element mesh comprised of 30 layers, each of them characterized by a constant thickness and saturated conditions. As a consequence, the model's conclusions were based on an assumption that Four Creek surface flow was connected to the deep groundwater aquifer throughout its entire length, and that there was a hydraulic connection through a single hydrostratigraphic unit beneath the creek, down to zones of pit dewatering. This is generally a reasonable assumption, particularly in the absence of specific stream instrumentation and data, which is used in groundwater models at the project scale. The results of the Groundwater Model remain valid at the larger site scales. However, the groundwater model was not intended to represent complex surface water and groundwater interactions over small stream sections, particularly in a more complex perched system.

As a result, the Groundwater Numerical Model overestimates pit dewatering impacts on Four Creek. Given the regional focus of the Groundwater Model, a more detailed, finer-resolution surface water/groundwater interaction study was necessary to better understand the potential impact the project would have on streamflow.

The baseflow estimates produced by the Groundwater Model are used as inputs to the Project's Water and Load Balance Model, which simulates surface water flows during different phases of the mine life and considers the impacts of the following water management (SRK 2022c):

- Construction of East Management Spill Dam;
- Channel C-02: A collection channel that will collect undisturbed runoff upstream of East Management Pond and divert it around the Project and into Four Creek;
- C-05: A collection channel that will divert undisturbed runoff around southern extents of open pit to Four Creek;
- Coal Processing Plant (CPP) and Sedimentation Pond and Spillway; and
- Potential acid generating (PAG) rocks from the pits will be placed into the East Management Pond, which is also partially located within the Four Creek watershed.

Ultimately, the outputs of the Water and Load Balance Model provide a prediction of the expected changes to surface water that will be caused by mine development.

1.5 Study Objectives

The overall purpose of this study is to develop a more detailed representation of the groundwater and surface water processes that generate streamflow in Four Creek, and to better quantify how the proposed mine development will affect those processes and ultimately change streamflow in Four Creek. This study addresses two key objectives:

- Investigate key groundwater processes in the Four Creek watershed, assess groundwater circulation in the till dominated overburden located in the Four Creek Watershed and understand the role of shallow groundwater flow (interflow) pathways within till-dominated overburden; and
- Develop a water balance model that represents key groundwater and surface water processes in Four Creek and can be used to quantify how the proposed mine infrastructure within the Four Creek watershed will affect the Four Creek streamflow.

2.0 Physical Setting

The following sections provide an overview of the physical characteristics of the Four Creek watershed.

2.1 Terrain

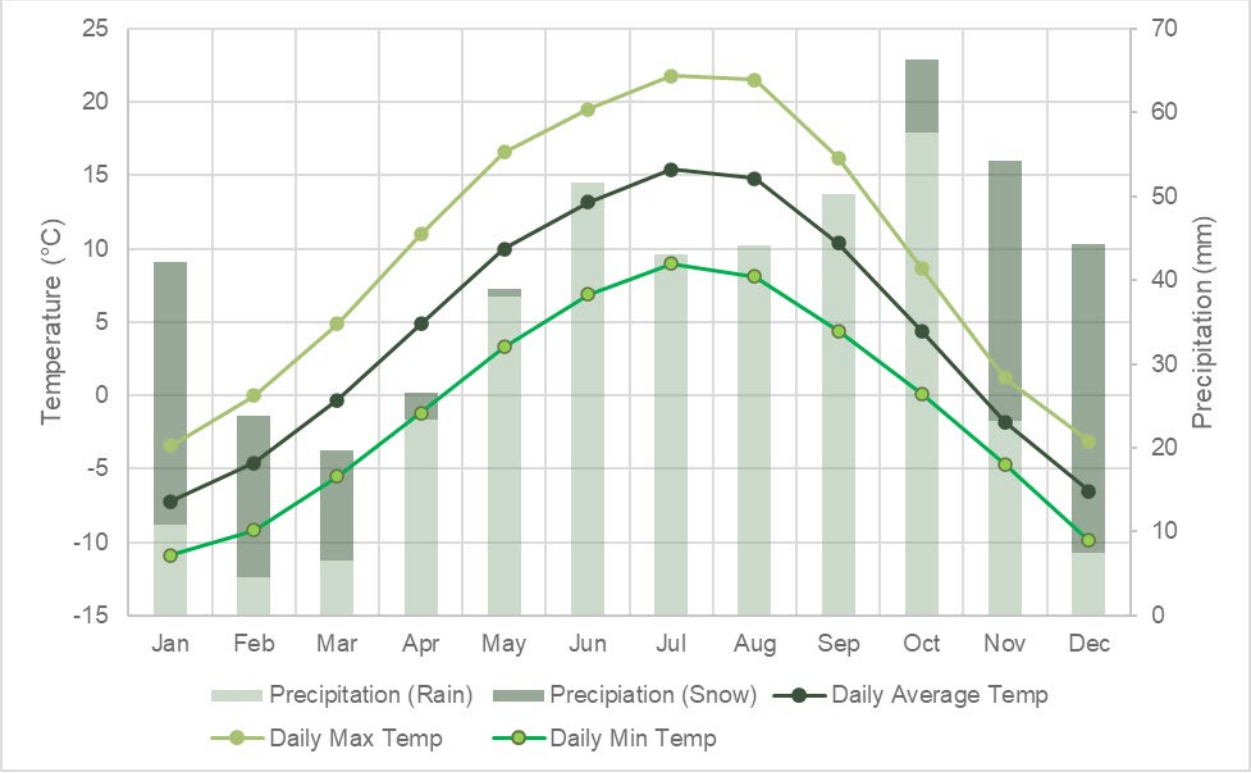
Four Creek lies between Tenas Creek and Goathorn Creek and drains roughly in a north–south direction (Figure 1). Elevations within the Four Creek watershed range from approximately 1,370 metres above sea level (masl) near the headwaters in the south, to about 675 masl at its confluence with Goathorn Creek at the northern end of the watershed.

The proposed open pit is located in southern portion of the watershed, while the proposed East Management Pond is situated in the central/northern part of the watershed. The terrain in the Four Creek watershed predominantly consists of gentle mountain slopes and gentle colluvial aprons at the base of slopes. Bedrock outcrops within the Four Creek watershed are limited and primarily comprise residual knobs (tors) on the hilltops.

2.2 Climate

The nearest long-term climate station is located at Smithers, approximately 20 km north of Goathorn Creek at an elevation of 520 masl. Climatic normals are available at this station for the period between 1991 and 2020 (Environment Canada 2024, Figure 4). The mean annual precipitation recorded was 405 mm, with extreme daily rainfall of 68 mm observed in October 2017.

Figure 4: Climate normals for Smithers BC for the years 1991-2020

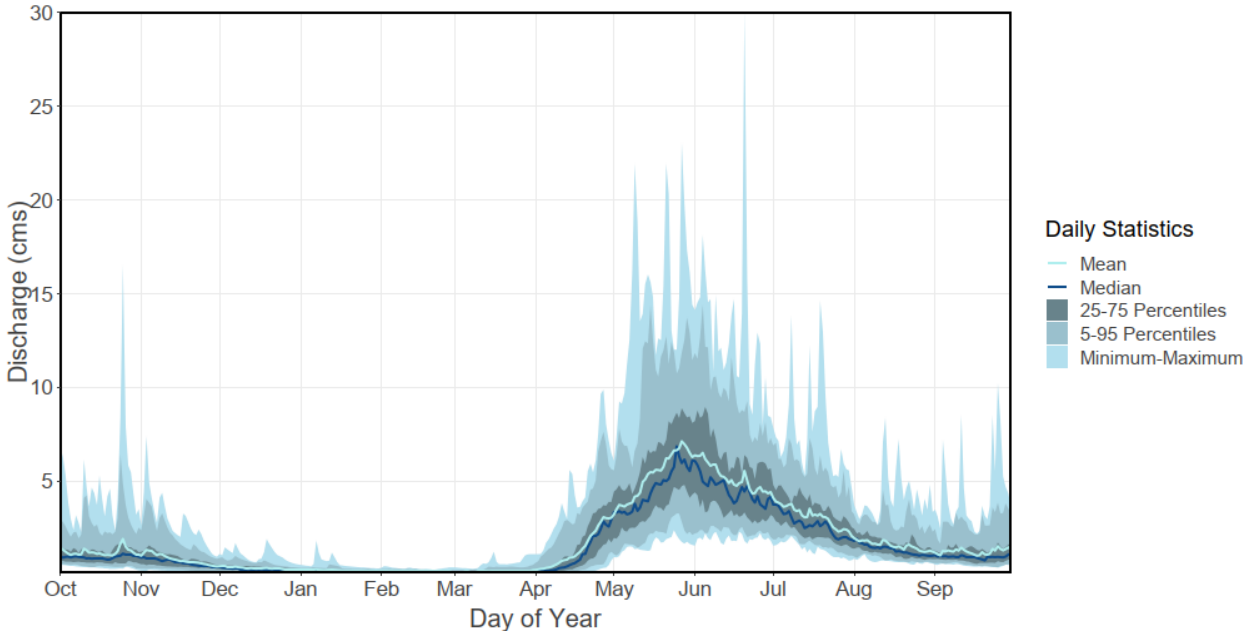


Source: Environment Canada 2024.

2.3 Hydrology

A Water Survey of Canada hydrometric gauge is located on Goathorn Creek, approximately 3.4 km downstream of the confluence with Four Creek (Station 08EE008 named 'Goathorn Creek Near Telkwa') (WaterOffice 2025). The hydrometric gauge has maintained a predominantly continuous discharge record since 1960. Runoff in the Goathorn Creek watershed is primarily influenced by snowmelt, with peak flow periods occurring in spring and early summer (Figure 5). Following the spring freshet, streamflow gradually recedes to low flow conditions that persist during summer months. Portions of Four Creel are regularly disconnected during summertime low flow periods. These summer low flows are regularly interrupted by rainfall events that can also produce secondary peak flows. The most extreme low flow periods typically occur between December and March, when precipitation primarily falls as snow.

Figure 5: Daily discharge statistics for Goathorn Creek at the Water Survey of Canada Gauge (08EE008)



2.4 Groundwater – Surface Water Interactions

Within the Four Creek watershed, the presence of fine till (refer to Section 2.6 for additional information) prevents or reduces water from flowing down to the deeper groundwater system. Consequently, flow in Four Creek is not supported or fed by the groundwater table in the overburden and bedrock.

During low flow periods, the primary source for streamflow in the creek is from the movement through the upper soil layer, above the groundwater table. This process is known as interflow and can result from rainfall or surface water that percolates downward into the shallow subsurface and later reemerges at the surface as it enters the creek. For the purposes of this reporting, baseflow is the water stored within a catchment that sustains streamflow between high rainfall periods and snowmelt periods when surface runoff is limited.

2.5 Forest Characteristics

The Biogeoclimatic Ecosystem Classification (BEC) system classifies ecosystems and forest cover characteristics across BC based on climate, soil, and vegetation characteristics (Pojar et al. 1987). The watershed encompasses two distinct BEC zones: the Sub-Boreal Spruce (SBS) zone and the Engelmann Spruce-Subalpine Fir (ESSF) zone (Figure 2). The SBS zone, characterized by cold winters and warm summers, covers the downslope two-thirds of the watershed. This zone features dense forests with dominant tree species such as hybrid white spruce, subalpine fir, and lodgepole pine. The ESSF zone, located near the upper portion of the watershed, is adapted to colder temperatures and longer winters relative to SBS zones. Precipitation patterns in ESSF zones are dominated by snowpacks ranging from 1 to over 3 metres (m), which can persist into late spring or early summer. This zone supports old-growth forests dominated by Engelmann spruce and subalpine fir.

2.6 Surficial Geology

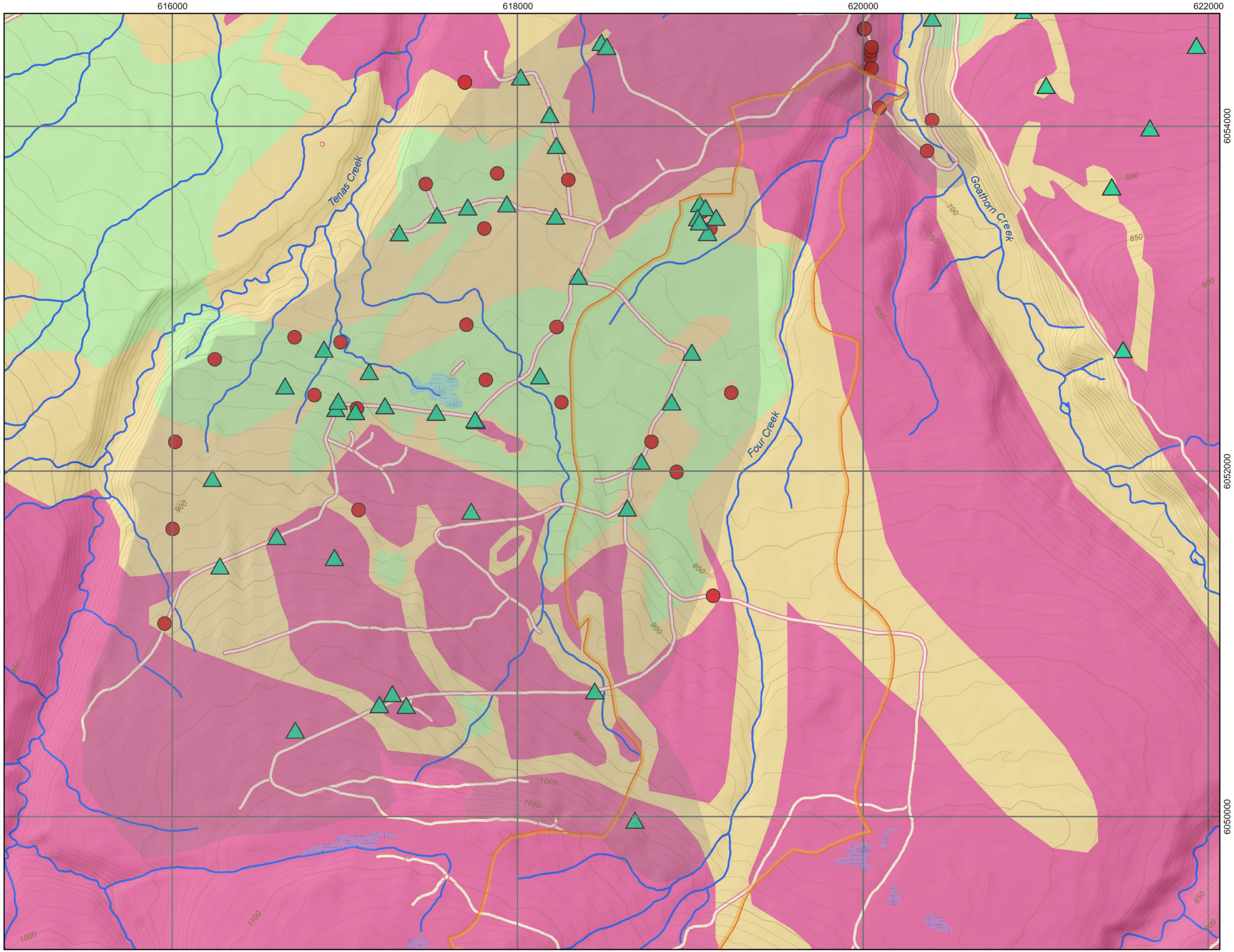
Within the Four Creek watershed, surficial geology primarily consists of glacial clay-silt-rich till and glaciofluvial sand-gravel-rich till.

The surficial geology map (Figure 6) was prepared by SRK and it is included in the EA supporting documents (2022a). The report indicates that the central portion of the watershed and the surficial material underneath the creek channel are generally composed of sand-gravel-rich till, while the upper and lower portions of the watershed predominantly consist of clay-silt-rich till.

The clay-silt-rich till typically contains silt, clay, and fine sand with some gravel. It is commonly very stiff to hard in consistency with low to medium plasticity. Areas with this type of surficial soil are typically more prone to water retention, resulting in lower infiltration rates. Water tends to accumulate or move more slowly through these soils, leading to predominant surface runoff and interflow (due to the fine till acting as a restrictive layer).

The sand-gravel-rich till was assessed as dense to very dense through standard penetration testing during sonic drilling (SRK 2022a). This material is less fine, allowing water to move through it more easily compared to fine-grained soils. These areas can have a more pronounced impact on hydrology because water infiltrates faster and may flow vertically toward the deep groundwater system not connected to Four creek, which results in a reduction of the baseflow.

In addition, the surficial geology map indicates that the stream incises down into a glacial till deposit which has the potential to restrict the movement of water between the creek and the surrounding subsurface.



KEY MAP



LEGEND

- Test Pit[1]
- Sonic[1]
- Watercourse[2]
- Wetland[2]
- Proposed Project Footprint
- Four Creek Watershed[2]

Surficial Geology[1]

- Upper Till
- Lower Till
- Sand and Gravel

1 - SRK Consulting/Telkwa Coal, January 2021 - Disclaimer: all mapped features are approximate and should be used for discussion purposes only.
2 - BC Freshwater Atlas

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Universal Transverse Mercator Projection Zone 9 North

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Source Notes:
Base map data provided by Natural Resources Canada (CanVec, CDEM) and The Government of British Columbia (BC Freshwater Atlas, Digital Road Atlas). Surficial Geology (georeferenced) from Allegiance Coal and SRK Consulting, January 2021. Contour interval is 10 metres (minor) and 50 metres (major). All elevations in metres above sea level.

CLIENT
Telkwa Coal

PROJECT
Tenas Project

TITLE
Surficial Geology

SLR

REF. NO. 2404901-MR-006

Figure 6

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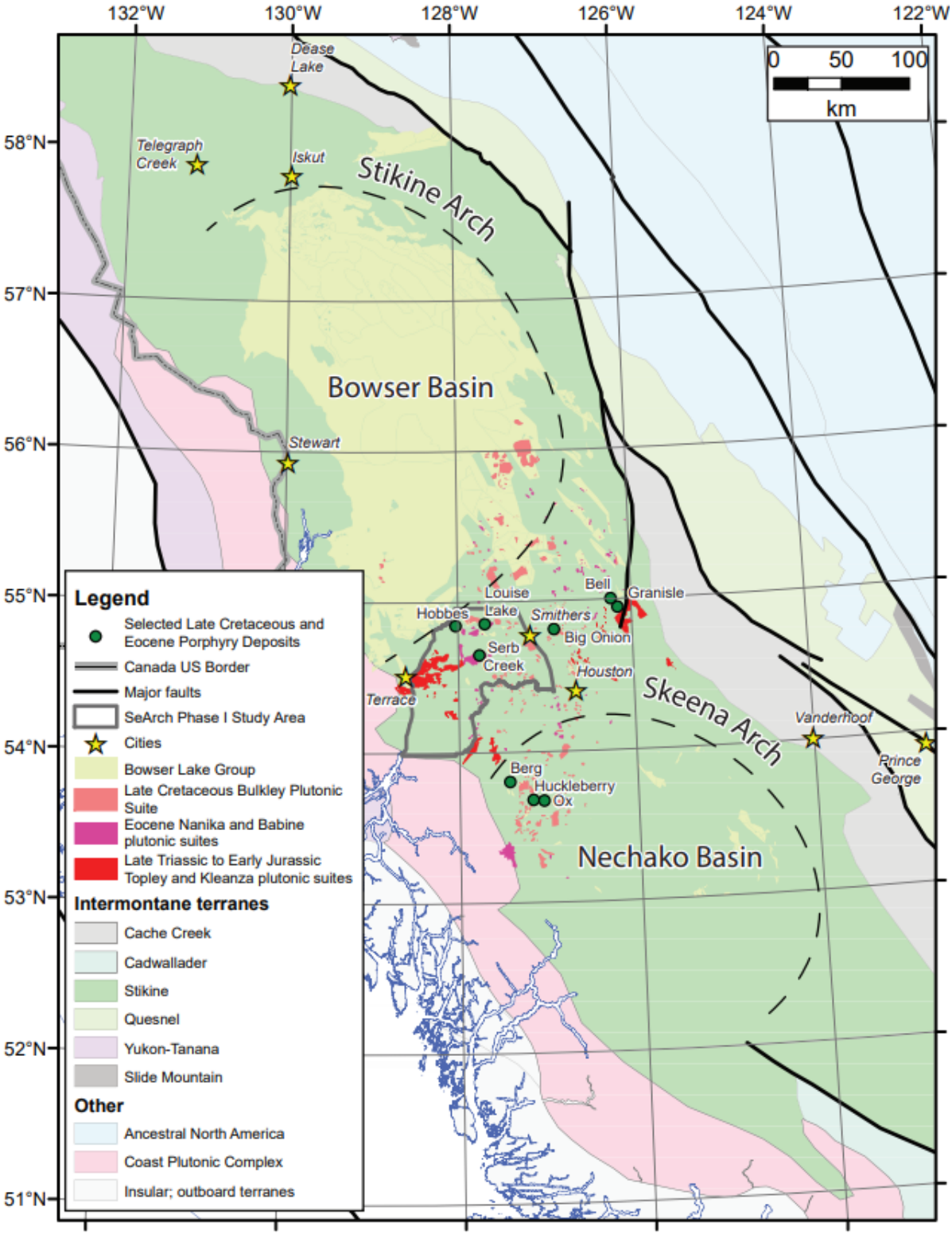
2.7 Bedrock Geology

The study area is in the northeast/southwest trending Skeena Arch, which separates older (Jurassic) sedimentary rocks of the Bowser Basin in the north from the younger (Cretaceous) sedimentary rocks of the Nechako Basin to the south. The Skeena Arch represents a magmatic arc that has produced a diverse range of mineral deposits in West Central BC. The regional geology map is included in Figure 7.

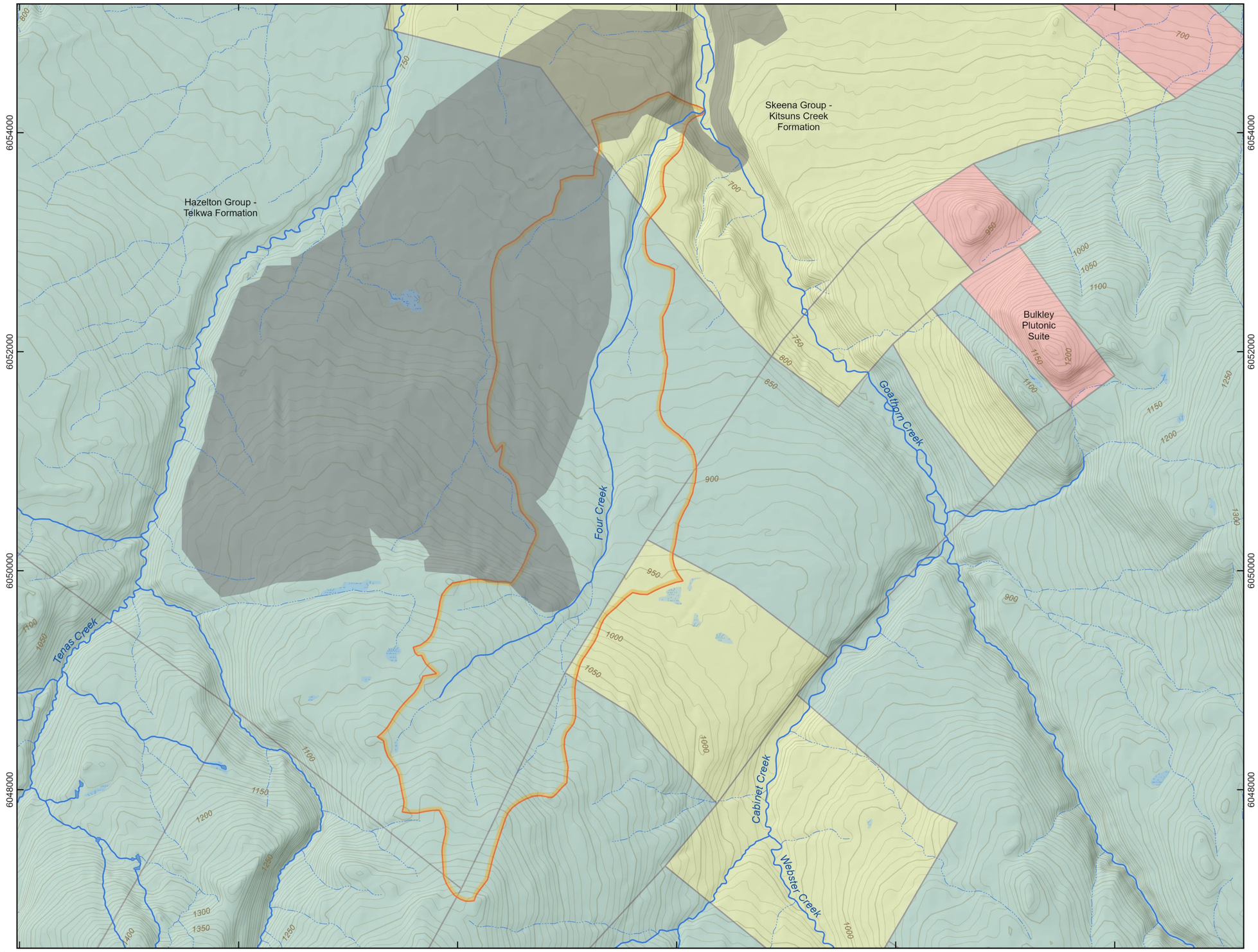
The Four Creek watershed is mostly comprised of the Telkwa formation, which is a volcanic rocks geologic formation part of the Hazelton Group and is made up of subaerial and marine volcanic, sedimentary, and pyroclastic rocks. The upper portion of the watershed, where the open pit will be developed, comprises of sandstone, conglomerate and coal (defined as Unit 1 in Figure 8). Similarly, the lower portion of the watershed, at the confluence between Four Creek and Goathorn Creek, the bedrock comprised of Unit 1 and marine mudstone and siltstones (defined as Unit 2 in Figure 8).

As part of the EA study, SRK identified that the bulk of recharge to the bedrock system occurs from the infiltration of precipitation and runoff in the upland area of the Tenas Creek and Goathorn Creek watersheds, where the silt-clay-rich till coverage is limited. SRK also noted that locally the groundwater can be disconnected (i.e., perched) above the bedrock groundwater system.

Figure 7: Geology Map



Source: Geoscience BC Report 2022-09 – BCGS Open File 2019-09 – MDRU Publication 458.



KEY MAP



LEGEND

- Watercourse[1]
- Intermittent or Indeterminate Watercourse[1]
- Wetland[1]
- Proposed Project Footprint
- Four Creek Watershed[1]

Geological Unit - Mesozoic Era[2]

Cretaceous Period

- Intrusive Rocks; undivided
- Sedimentary Rocks; coarse clastic

Jurassic Period

- Volcanic Rocks; calc-alkaline

1- BC Freshwater Atlas
2- BC Geological Survey

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KILOMETRE SCALE

North American Datum 1983
Universal Transverse Mercator Projection Zone 9 North

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NORTH

Source Notes:
Base map data provided by Natural Resources Canada (CanVec, CDEM) and The Government of British Columbia (BC Freshwater Atlas, Digital Road Atlas). Bedrock Geology provided by British Columbia Geological Survey (BC Digital Geology which includes compiled field mapping from 50K to 250K scale). Contour interval is 10 metres (minor) and 50 metres (major). All elevations in metres above sea level.

CLIENT: Telkwa Coal

PROJECT: Tenas Project

TITLE: **Bedrock Geology**

SLR

REF. NO. 2404901-MR-020

Figure 8

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3.0 Groundwater and Surface Water Investigation

Groundwater and surface water are often studied and managed separately; however, they are connected through the hydrologic cycle. The direction and rate at which water is exchanged between surface water and groundwater can vary both in space and time as result of several factors such as topographic position, seasonality, and sediment type. The gradient between surface water and groundwater in the overburden strongly influences surface and subsurface groundwater exchange.

This study relies on empirical data collection and analysis to assess the nature of groundwater processes that contribute to discharge in Four Creek. Specifically, surface water levels, shallow groundwater levels, discharge measurements, and water quality data are used to investigate and compare the streamflow contributions from interflow and deeper groundwater flow systems in overburden and bedrock.

3.1 Methods

Historical information, collected by SRK and ERM as part of the Environmental Assessment process, was reviewed and analyzed to complete this study (SRK 2022, 2022b, 2022c; ERM 2020, 2025).

A field program was conducted to support the modeling and historical literature review efforts. The objectives of the field program were to characterize and monitor shallow groundwater/surface water interactions in Four Creek, and provide additional groundwater, and surface water quantity and quality data beyond the information collected during the original baseline program.

A summary of the tasks completed for each trip in included in Table 2.

Table 2: Summary of field work completed at Four Creek

Field Dates	Tasks
2024/07/03 – 2024/07/10	• Assessed the status of the Monitoring Wells (MW) and Mini Piezometers (MPs). • Measured Water Levels (WLs). • Installed shallow and deep MPs in proximity to Water Quality Station WQS-20. • Collected groundwater samples and physical parameters from select MWs, MPs, and Surface Water (SW) Stations.
2024/09/04 – 2024/09/11	• Measured Water Levels in MWs and MPs. • Collected groundwater samples and physical parameters from select MWs, MPs, and SW Stations. • Performed a temperature, conductivity, and flow survey along Four Creek and identified potential overwintering locations for vulnerable species.
2024/10/16 – 2024/10/17	• Collected groundwater samples and physical parameters from select MPs and SW stations. • Performed a temperature, conductivity, and flow survey along Four Creek.

3.1.1 Discharge Measurements

The Area-Velocity (AV) method was used to estimate discharge at Four Creek during the June, September, and October 2024 field trips, adhering to BC Hydrometric Standards (RISC 2018).

Area-velocity measurements were collected along suitable cross sections (e.g., transects that perpendicularly intersect the stream) with relatively uniform bed characteristics and low turbulence conditions. The identification of suitable cross-sections was conducted by experienced field personnel for each visit. Depth and velocity measurements were collected using an acoustic Doppler velocimeter (Sontek FlowTracker2). Manual area-velocity streamflow measurement procedures were consistent with the Standards (RISC 2018) and included:

- A tag-line measuring tape across the cross-section perpendicular to the direction of flow.
- A minimum of 20 vertical depth and velocity measurements were collected, unless restricted by the channel width and the resolution of the field equipment. Vertical measurement points were spaced so that no more than 10% of total streamflow was accounted for by any single measurement point. This typically resulted in scenarios where velocity measurements were more closely spaced in deeper, faster moving water.
- If depths were <1.0 m, velocity was measured at a 0.6 m depth from the water surface. If the depth was >=1.0 m, velocities were measured at 0.2 m and 0.8 m depths from the water surface. Velocity measurements were averaged for a minimum of 40 seconds.

The volumetric flow rate of each panel was then calculated as the product of the cross-sectional area of the panel and the average velocity measured within that panel. The flow rate for a river transect was determined by summing the flow rates of all the panels in that transect.

$$Q = \Sigma A_i V_i$$

Where $\boldsymbol{Q}$ denotes the volumetric flow rate for the whole transect, $\boldsymbol{A_i}$ denotes the cross-sectional area of the i^{th} panel, and $\boldsymbol{V_i}$ denotes the average velocity of the i^{th} panel. Each panel was 10 centimetres (cm) in width, with depths from zero to 36 cm (October 2024 survey).

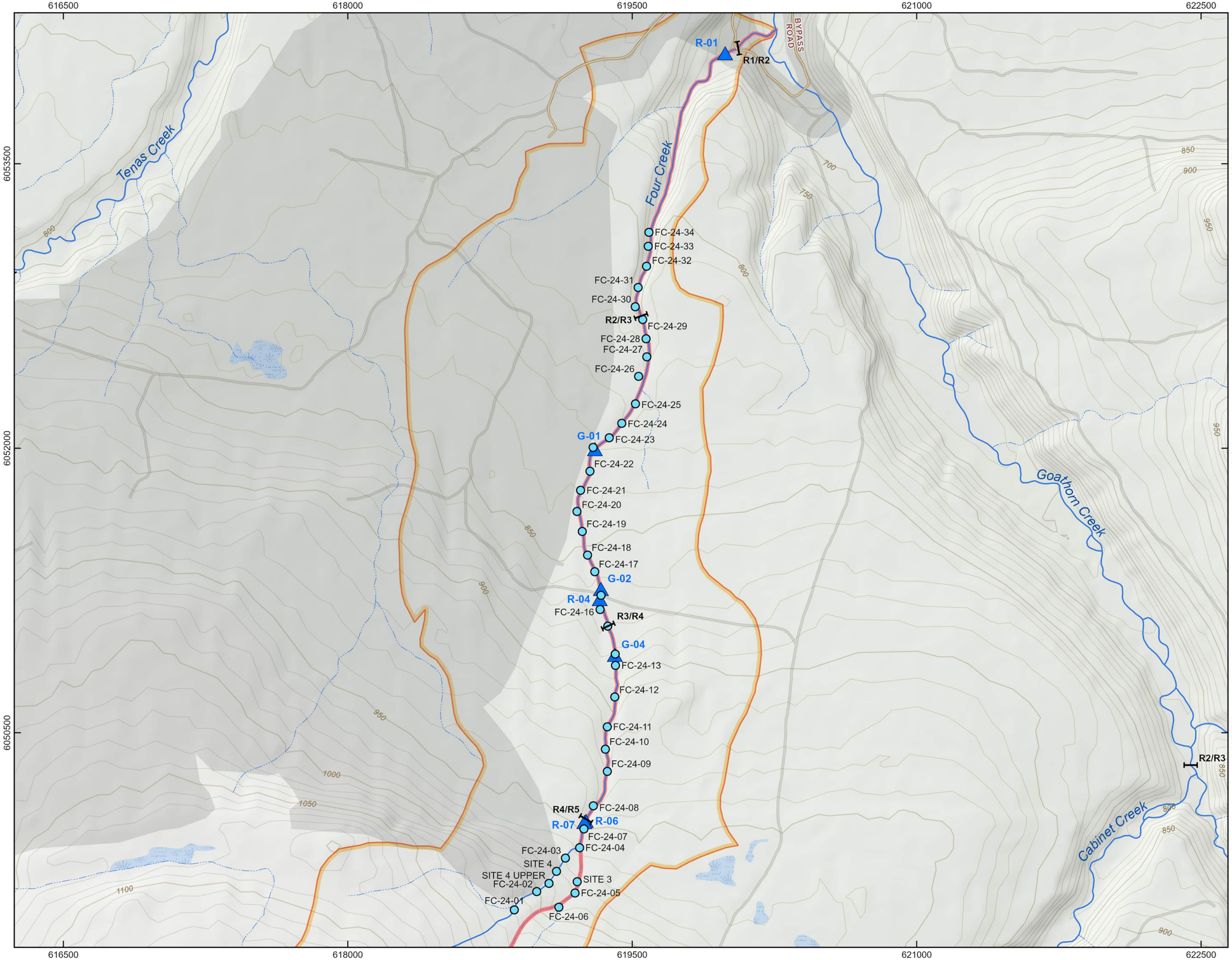
Discharge measurements were taken at select transects along the length of Four Creek from the headwaters down to the Goathorn Creek confluence. Changes in discharge rates between these measurement stations can indicate whether the stream lost water out to the aquifer (downstream discharge is less than upstream discharge) or if the stream gained water ream discharge is greater than upstream discharge).

3.1.2 Conductivity Survey

The analysis of electrical conductivity in various components of a watershed (i.e., creeks, rivers, ponds and reservoirs, bedrock groundwater, overburden groundwater, and intermittent flow) is an efficient and rapid preliminary investigation technique that can provide insight into both the flow path the water has taken through the watershed and its provenance. As water moves through soil and/or rock in the subsurface, it dissolves minerals and salts it encounters along its flow path. The longer the water remains in contact with the rock, the greater the degree of dissolution and the higher the concentration of free ions in the water. These free ions enable the water to conduct electricity, so the higher the concentration of free ions, the higher the electrical conductivity.

Changes in conductivity along a stream reach can help identify mixing zones of groundwater and surface water. Creek water tends to have lower conductivity than groundwater (circulating both in bedrock and overburden).

In September 2024, SLR Consulting (Canada) Ltd. (SLR) completed a survey of a four-kilometer stretch of the Four Creek channel, including two 500 m segments along the contributing headwater reaches in the southern, higher elevation portion of the catchment. Conductivity and flow measurements were collected at 100 m intervals using a YSI multiparameter probe. Additional conductivity measurements were collected in June 2024 and October 2024 (Figure 9).



KEY MAP



LEGEND

- Conductivity Measurement Location
- SEFA Flow Measurement
- Reach Break
- Watercourse[1]
- Intermittent or Indeterminate Watercourse[1]
- Four Creek[1]
- Proposed Bypass Road
- Resource Road [2]
- Wetland[1]
- Proposed Project Footprint
- Four Creek Watershed[1]

1 - BC Freshwater Atlas
2 - BC Digital Road Atlas (for clarity, not all roads displayed)

0 0.25 0.5 0.75 1

KILOMETRE SCALE

North American Datum 1983
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NORTH

Source Notes:
Base map data provided by Natural Resources Canada (CanVec, CDEM) and The Government of British Columbia (BC Freshwater Atlas, Digital Road Atlas). Contour interval is 10 metres (minor) and 50 metres (major). All elevations in metres above sea level.

CLIENT
Telkwa Coal

PROJECT
Tenas Project

TITLE
Conductivity/Discharge Locations from Manual Creek Surveys

SLR

REF. NO. 2404901-MR-008-01

Figure 9

REV. 1

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3.1.3 Groundwater Monitoring and Hydraulic Gradients

3.1.3.1 Monitoring Wells

SLR selected the monitoring wells (MW) listed in Table 3 to characterize overburden and bedrock groundwater circulation within or in close proximity to the Four Creek watershed. All the monitoring wells were installed by other consultants as part of the baseline hydrogeology characterization of the Tenas Project to support the EA process.

The monitoring well depths were designed to characterize groundwater circulation in both the shallow and deep overburden, as well as in the bedrock. It should be noted that some of the selected monitoring wells are located outside the Four Creek watershed; they were chosen for the study due to their proximity and the limited number of MWs within the Four Creek watershed.

The location of the monitoring wells is depicted in Figure 10.

Table 3: Scope of Work and list of Monitoring Wells for the Four Creek study

Well ID	UTM Coordinates (Zone 9N)		Depth to Bottom (mbtoc)	Lithology	Notes
	Easting (m)	Northing (m)			
T95R-64	618278	6050597	94.0	Bedrock (Coal seam #1)	To characterize groundwater circulation in the deep bedrock in the ore zone-
T19-18S	619237	6050602	47.2	Overburden	To characterize groundwater circulation in the deep overburden, located within Four creek watershed
T19-19S	618775	6052171	47.2	Overburden + Bedrock	To characterize groundwater circulation in the deep overburden and deep bedrock, located within Four creek watershed
18-02S (GEO11)	618921	6051995	19.5	Overburden	To characterize groundwater circulation in the overburden, located within Tenas creek watershed
TOB96-02-06	618466	6051947	33.5	Overburden	To characterize groundwater circulation in the deep overburden, located within Tenas creek watershed
TOB96-01-05	619014	6050602	10.5	Overburden	To characterize groundwater circulation in the overburden, located within Four creek watershed
T18-01D	617840	6050689	59.9	Bedrock	To characterize groundwater circulation in the deep bedrock in the ore zone, located within Tenas creek watershed

Well ID	UTM Coordinates (Zone 9N)		Depth to Bottom (mbtoc)	Lithology	Notes
	Easting (m)	Northing (m)			
T95R-40	618188	6051460	52.2	Bedrock	To characterize groundwater circulation in the deep overburden, located within Tenas creek watershed

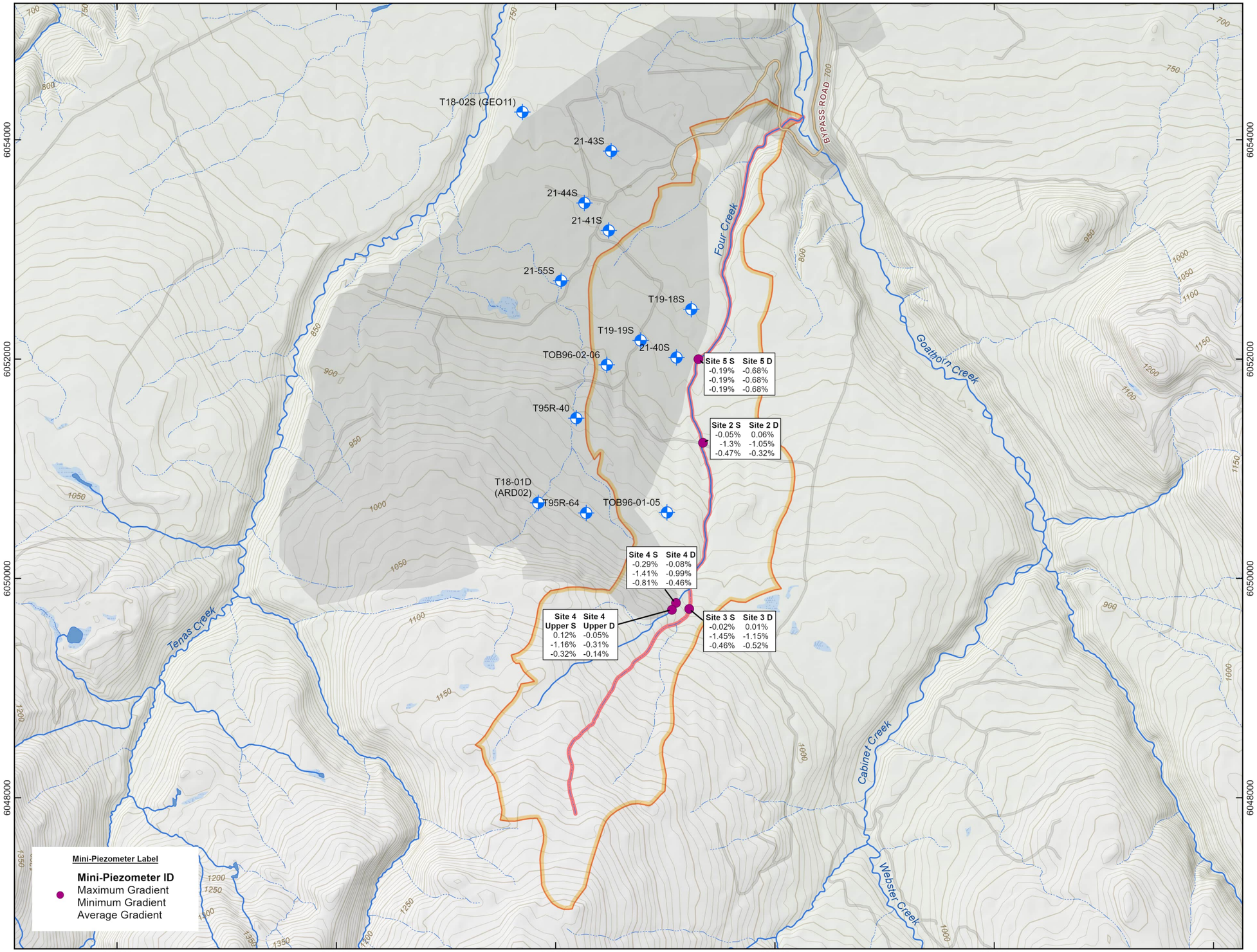
3.1.3.2 Mini-Piezometers

Cassiar Geoscience Consulting Ltd installed four nested Solinst mini piezometers (MPs) within Four Creek as part of a preliminary surface water/groundwater study at specific locations within the Four Creek watershed. The initial focus of the MP installation was to determine whether Four Creek, around the proposed Tenas pit, is supported by groundwater or surface water (i.e., recharge or discharge features). The location and installation details of each MP are provided in Figure 10 and Table 4, respectively.

In 2024, SLR installed one additional nested MP (shallow and deep) to further characterize the surface water/groundwater interaction in proximity to the water management pond. Prior to each MP installation, hand augers were used to extract the upper 1-1.5 m of soil for characterization, providing a broad assessment of surficial geology and soil permeability in the valley. The details of the two MPs installed by SLR are included in Appendix A.

Table 4: Mini-Piezometer Installation Details

ID	Date	UTM Coordinates (Zone 9N)		Elevation (masl)	Stick-Up (m)	Total Depth (mbtoc)	Source
		Easting (m)	Northing (m)				
Site 2 Shallow	05-Nov-21	619343	6051237	864	0.54	1.12	Cassiar 2021
Site 2 Deep	05-Nov-21	619343	6051237	864	1.16	2.16	Cassiar 2021
Site 3 Shallow	19-Nov-21	619218	6049722	973	0.61	1.11	Cassiar 2021
Site 3 Deep	19-Nov-21	619218	6049722	973	0.99	1.84	Cassiar 2021
Site 4 Shallow	18-Nov-21	619097	6049776	980	0.7	1.12	Cassiar 2021
Site 4 Deep	18-Nov-21	619097	6049776	980	1.17	2.1	Cassiar 2021
Site 4 Upper Shallow	18-Nov-21	619060	6049713	980	0.65	1.15	Cassiar 2021
Site 4 Upper Deep	18-Nov-21	619060	6049713	980	1.06	1.86	Cassiar 2021
Site 5 Deep	04-Jul-24	619297	6052003	831	0.62	2.55	SLR 2024
Site 5 Shallow	04-Jul-24	619297	6052003	831	0.75	1.44	SLR 2024



KEY MAP



LEGEND

- Mini-Piezometer
- Monitoring Well
- Watercourse[1]
- Intermittent or Indeterminate Watercourse[1]
- Four Creek[1]
- Proposed Bypass Road
- Resource Road[2]
- Wetland[1]
- Proposed Project Footprint
- Four Creek Watershed[1]

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Universal Transverse Mercator Projection Zone 9 North

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CLIENT
Telkwa Coal

PROJECT
Tenas Project

TITLE
Monitoring Well Locations and Mini-Piezometer Locations

SLR

REF. NO. 2404901-MR-007

Figure 10

REV. 1

Document Path: G:_Projects\Tenas\1_Workspace\Task 02 - Figures\2025\(2025-04) Four Creek Environmental and Hydrology Figures\(2025-04) GW and SW Modelling Figures.aprx

3.1.3.3 Groundwater Level Monitoring

Monitoring groundwater levels over time enables both temporal (i.e., seasonal or over time) and spatial (i.e., relationships between different areas or geological formations) assessments of groundwater flow and transport. The purpose of groundwater level monitoring is to evaluate the response of groundwater levels to precipitation, stream stage fluctuations, snowmelt, and other external influences.

3.1.3.4 Manual Measurements

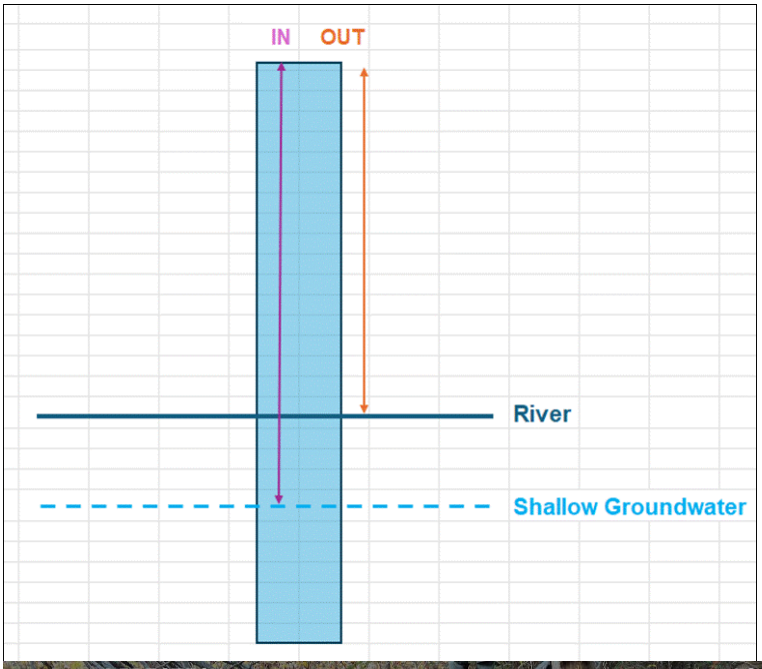
To measure water levels manually, a water level meter is lowered into the MP or MW until the probe detects water. The groundwater level is then recorded as the distance from the top of the casing of the MP or MW down to the water surface. These can be converted to elevation measurements when the top of casing elevation is known.

For MPs, both groundwater levels (referred to as the IN measurement) and creek surface water (referred to as the OUT measurement) were measured using a staff gauge or tape measure (Figure 11). This processed was repeated at each MP location for consistency.

Manual measurements serve two purposes:

- Correcting Sensor Drift: Water levels within each MP and MW were manually measured to account for natural drift in the pressure transducers.
- Vertical Hydraulic Gradient: Water levels in the creek adjacent to each MP were measured to calculate the vertical hydraulic gradient in the streambed.

Figure 11: (Top) Schematic of the MP groundwater level (IN) and surface water (OUT) measurements. (Bottom) Field photo of the deep (image left) and shallow (image right) MPs at Site 2.





3.1.3.5 Vertical Gradients

The vertical hydraulic gradient (VHG) is calculated to quantify the difference in hydraulic head between two or more points in the vertical direction within a watershed system. This was calculated based on the measured difference between the surface water of the creek and groundwater levels measured in the shallow and deep MPs relative to the separation distance between the creek bed and the mid-point of the MP screened interval.

The VHG equation was determined for each MP and uses measured water levels and discrete discharge measurements. The VGH was calculated using the following equation:

$$VHG = \frac{(H_2 - H_1)}{L}$$

Where:

- VHG = vertical hydraulic gradient
- H_1 = hydraulic head at the surface water
- H_2 = hydraulic head at the lower mini-piezometer / upper mini-piezometer
- L = vertical distance between the midpoints of the screened interval

The difference between the water levels in the MP and the surface water indicates direction of flow:

- Positive Vertical Gradient: Water level in the MP is higher than the creek, meaning shallow groundwater is discharging into the creek in the immediate vicinity of the MP.
- Negative Vertical Gradient: Water level in the MP is lower than the creek, meaning water from the creek is seeping into the streambed and recharging shallow groundwater in the vicinity of the MP.
- Neutral Vertical Gradient: Water level in the MP and the water level in the creek are similar (+/- 2 cm) meaning that the creek is neither gaining or losing significant volumes of water to/from the groundwater table.

In case of the MP being dry, the bottom of the MP was assumed to be the water level for the purpose of estimating the vertical gradient.

3.1.3.6 Pressure Transducer Installation

MP Site 2D, Site 3D, Site 4D, Site 4upD, Site 5D and Site 5S were equipped with Solinst pressure transducers to continuously measure groundwater pressure and record groundwater levels at a frequency of one reading every hour for the duration of the study. A separate transducer for barometric pressure was installed for barometric compensation of the collected pressure data. Pressure transducers were also installed at selected monitoring wells. Pressure transducer installation details are summarized in Table 5.

Table 5: Mini-Piezometer Pressure Transducer Installation Information

Transducer Make and Model	Serial Number	Mini Piezometer	Depth of Installation (mbtoc)
Solinst Model 3001 Levelogger 5 M5	214561	Site 2D	1.62
Solinst Model 3001 Levelogger 5 M5	214265	Site 3D	1.58
Solinst Model 3001 Levelogger 5 M5	2145258, replaced by 2110511 in Oct 2023	Site 4D	1.63
Solinst Model 3001 Levelogger 5 M5	2145264	Site 4UD	1.61
Solinst Model 3001 Levelogger 5 M5	2147359	Site 5S	1.25*
Solinst Model 3001 Levelogger 5 M5	2171776	Site 5D	1.50
Note: mbtoc – metres below top of casing * inferred			

Table 6: Monitoring Well Pressure Transducer Installation Information

Transducer Make and Model	Serial Number	Monitoring Well	installation notes
Solinst Model 3001 Levelogger 5 M10	2065044	T95R-64	Transducer installed in 2017
Solinst Model 3001 Levelogger 5 M10	2065063	TOB96-02-06	Transducer installed in 2017
Solinst Model 3001 Levelogger 5 M10	2145258	TOB96-01-05	Installed in July 2024 by Cody Cameron (Cassiar Gesocience Consulting Ltd.)
Solinst Model 3001 Levelogger 5 M5	2195947	T19-18S	Installed in July 2024 by Cody Cameron (Cassiar Gesocience Consulting Ltd.)

3.1.3.7 Groundwater Sampling

The specific pumping method selected at each location was designed to minimize agitation of sediments in the monitoring well, which is common in manual pumping methods, and was adjusted to a pumping rate that allowed for minimal drawdown. These methods provided samples representative of groundwater conditions.

In July 2024, monitoring well T95R-64 was partially pumped using a Monsoon XL submersible pump, but the sampling was completed using a bailer and hand pumping with a Waterra Footvalve as the submersible pump stopped working during the initial purging. Monitoring wells TOB96-02-06 and TOB96-01-05 were sampled using a peristaltic pump, while T95R-40 and T18-01D were sampled by hand pumping with a Waterra Footvalve. A bailer was used to sample T19-18S due to the depth of the water level making hand pumping difficult.
The mini-piezometers were sampled using a combination of Waterra® Foot Valves and 1” bailers. No purging was conducted at all MP locations due to the limited amount of water in the steel pipe (1”).

In September 2024, monitoring wells T95R-64, T94R-40, TOB96-02-06, T19-18S, and T18-01D were sampled using a combination of a Monsoon XL submersible pump and bailers. Physical

parameters were measured throughout the duration of purging. Mini-piezometers at Site 2S, Site 4 Upper S, Site 4 Upper D, and Site 5 were sampled using a peristaltic pump, with groundwater levels and surface water levels monitored. Groundwater physical parameters were taken at each MP except Site 3 Deep and Site 5 Deep due to limited water. Site 2 Shallow, Site 4 Upper Shallow, Site 4 Upper Deep, Site 5 Deep, and Site 5 Shallow were sampled using a peristaltic pump.

Grab samples were collected at surface water sites Site 2, Site 4 Upper, and Site 5.

Throughout the purging process, in situ parameters were regularly monitored using a YSI multiparameter meter and a turbidity meter. The recorded in situ parameters included pH, temperature, dissolved oxygen, redox potential, conductivity, and turbidity. In situ parameters were continually recorded throughout purging until they stabilized over at least three consecutive recordings.

Once the purging conditions were met and the final in situ parameters were recorded, the water sample for laboratory analysis was collected. Samples for dissolved parameters were filtered in the field using a 0.45 µm in-line Waterra™ filter connected to the sampling tubing. Required preservatives were added to the appropriate sample bottles by the laboratory (Caro Analytical Services) in the appropriate concentrations and volumes.

The 2024 sampling events and collected samples from MWs, MPs, and surface water (SW) stations are summarized in Table 7.

Table 7: Groundwater Samples collected during each sampling event

Monitoring Location ID		Sampling Season	
		July 2024	September 2025
T95R-64		✓	✓
T19-18S		✓	✓
T19-19S		[a]	[a]
18-02S (GEOG11)		[b]	[b]
TOB96-02-06		✓	✓
TOB96-01-05		✓	✓
T95R-40		✓	✓
21-41S		[c]	[a]
Site 2	Shallow	✓	✓
	Deep	-	-
	Surface Water	✓	✓
Site 3	Shallow	-	-
	Deep	-	-
Site 4	Shallow	-	-
	Deep	-	-

Monitoring Location ID		Sampling Season	
		July 2024	September 2025
Site 4 Upper	Shallow	✓	✓
	Deep	✓	✓
	Surface Water	-	✓
Site 5	Shallow	✓	✓
	Deep	-	✓
	Surface Water	✓	✓

✓ = Groundwater sample was collected
[a] = Sample not taken as well was dry
[b] = Sample not taken as well was broken
[c] = Location not visited

3.1.3.8 Duplicate Samples

To evaluate the repeatability and reliability of the sample results, duplicate water samples and trip blanks were collected and analyzed for the same parameters as the primary samples (Table 8).

Table 8: Summary of Duplicate Samples

Duplicate	T95R-64	T18-01D	T95R-40
DUP-A	Jul-24	-	Sep-24
DUP-B	Sep-24	Jul-24	-

3.2 Water Quality and Quantity Results

The following sections describe the results of the groundwater, interflow and surface water quantity and quality data collected in 2024 by SLR.

In addition, data collected from previous consultants have been reviewed and analyzed to create a more robust Four Creek watershed Conceptual Site Model.

Groundwater quality is discussed by providing a general overview of major ion chemistry, physical and chemical parameters, nutrients, and dissolved metals. A complete summary of the groundwater results is included in Appendix B, and Certificate of Analysis reports from the laboratory are included in Appendix C.

3.2.1 Discharge Measurements

A summary of the discrete discharge measurements collected in June 2024, September 2024, and October 2024, is shown in Table 9, Table 10 and Table 11. Several sections along Four Creek were dry during the September 2024 field trip. The dry sections are depicted in Figure 12.

Discharge vs Distance graphs were produced for each field trip completed in 2024 (Figure 13 to Figure 15). The results for the June 2024 and September 2024 field trips clearly indicate that Four Creek, during low flow conditions, is overall a losing creek. A losing creek is defined when

water lost through the riverbed exceeds the water gained through interflow / groundwater recharge.

The October 2024 field trip graph indicates that the discharge of Four Creek increases with distance down-reach moving towards the Goathorn confluence. This trip was conducted during wet conditions, with an average discharge of 13.6 L/s.

The analysis of the September 2024 discharge vs distance graph (Figure 14) shows an alternating of gaining and losing sections, even if as previously stated the overall trend indicates that Four Creek is a losing creek. Changes between gaining / losing section are likely associated with measurements uncertainty rather than to different contributions from the interflow or changes in the riverbed grain size distributions, because conductivity measurements have been consistent in all the sections (Refer to Section 3.1.2). The September program had to occur over two days due to time constraints. The most recent precipitation event prior to the survey was 1.8 mm on 2024/09/02, and an additional rainfall event of 7.7 millimetres (mm) occurred in-between the two survey days on 2024/09/07. This precipitation had the potential to bias the results of survey towards higher discharge measurements during the second day of the survey, especially as that second day of the survey was focused on the down-reach sections of Four Creek.

Table 9: June 2024 field trip – Discharge measurements

Location ID	Easting (m)	Northing (m)	Distance Up-Reach [1] (m)	Discharge (m^3/s)
R-01	619990	6054083	321	< 0.001
G-01	619303	6051996	2,661	< 0.001
G-02	619335	6051258	3,445	< 0.001
R-04	619329	6051205	3,498	< 0.001
G-04	619408	6050911	3,805	< 0.001
R-06	619255	6050034	4,729	0.003
R-07	619248	6050030	4,737	0.004
[1] Distance up-reach from the Goathorn Creek confluence.				

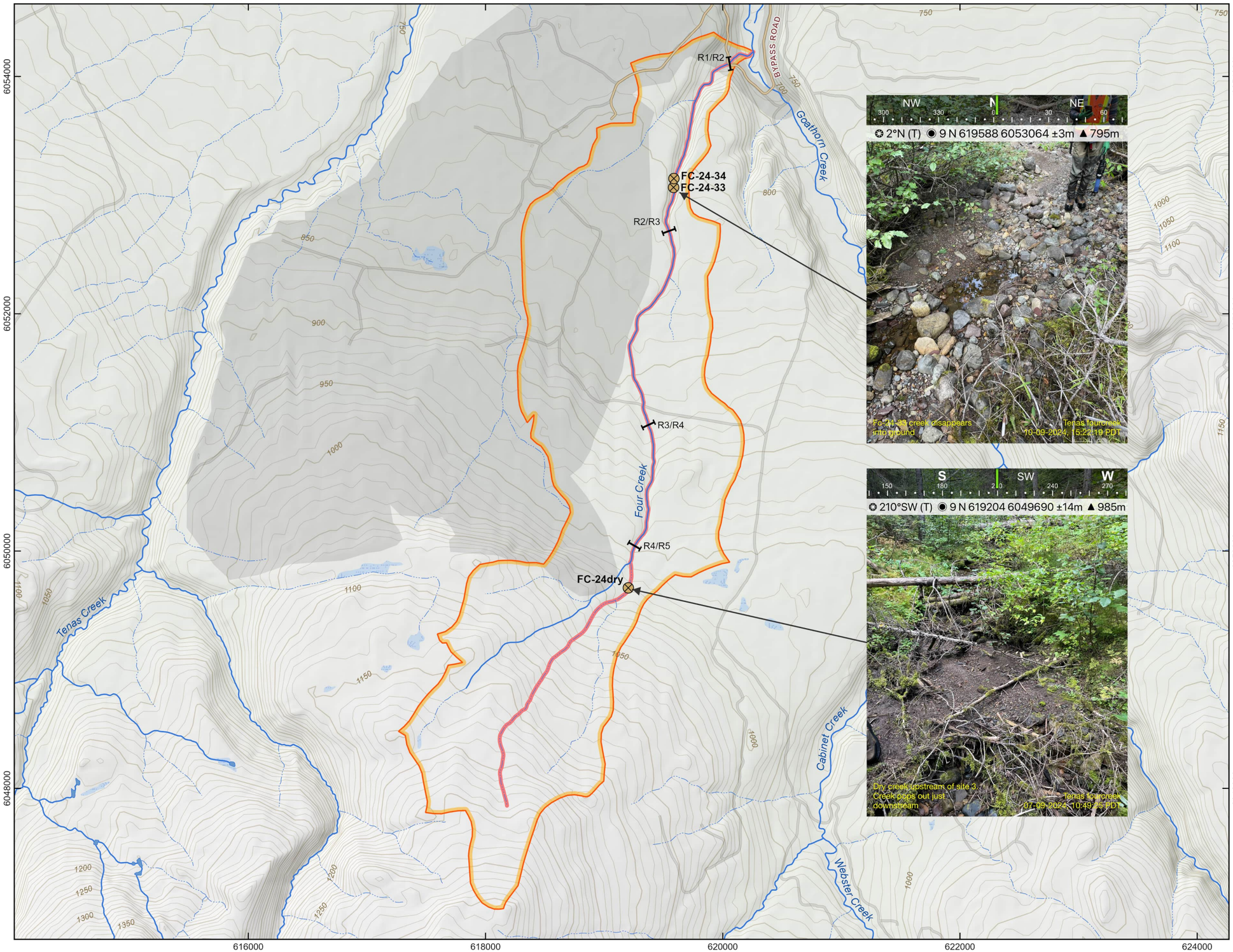
Table 10: September 2024 field trip – Discharge measurements

Location ID	Easting	Northing	Distance Up-Reach [1] (m)	Altitude (masl)	Discharge (m^3/s)
FC-24-01	618878	6049566	4,738	1,021	-
FC-24-02	618997	6049663	4,891	995	-
SITE 4 UPPER	619061	6049705	4,968	993	-
SITE 4	619100	6049769	5,043	984	-
FC-24-03	619147	6049839	5,127	972	0.003
FC-24-04	619222	6049894	5,220	956	0.002
SITE 3	619210	6049714	5,127	980	< 0.001
FC-24-05	619198	6049655	4,946	985	0.001

Location ID	Easting	Northing	Distance Up-Reach [1] (m)	Altitude (masl)	Discharge (m^3/s)
FC-24-06	619113	6049580	4,886	986	0.002
FC-24-07	619245	6049992	4,773	951	0.003
FC-24-08	619295	6050114	4,672	947	0.001
FC-24-09	619368	6050296	4,540	932	0.001
FC-24-10	619358	6050413	4,344	929	0.003
FC-24-11	619368	6050531	4,227	907	0.005
FC-24-12	619408	6050688	4,108	907	0.005
FC-24-13	619412	6050855	3,946	896	< 0.001
FC-24-14	619410	6050915	3,779	889	0.002
FC-24-15	619371	6051062	3,719	873	< 0.001
FC-24-16	619330	6051150	3,567	868	0.005
SITE 2	619336	6051224	3,470	859	0.002
FC-24-17	619302	6051349	3,396	853	0.004
FC-24-18	619264	6051437	3,266	846	0.004
FC-24-19	619237	6051561	3,171	850	0.001
FC-24-20	619208	6051667	3,044	854	0.005
FC-24-21	619228	6051778	2,934	843	0.001
FC-24-22	619277	6051878	2,821	837	< 0.001
SITE 5	619294	6052004	2,662	828	0.003
FC-24-23	619379	6052055	2,582	829	0.002
FC-24-24	619445	6052131	2,483	826	< 0.001
FC-24-25	619517	6052234	2,383	822	0.002
FC-24-26	619534	6052379	2,257	811	0.001
FC-24-27	619577	6052482	2,111	813	< 0.001
FC-24-28	619573	6052577	1,999	-	0.001
FC-24-29	619555	6052679	1,904	811	< 0.001
FC-24-30	619516	6052746	1,701	806	0.001
FC-24-31	619531	6052847	1,723	790	0.002
FC-24-32	619576	6052959	1,621	797	0.002
FC-24-33	619585	6053065	1,500	779	< 0.001
FC-24-34	619588	6053139	1,394	785	< 0.001
[1] Distance up-reach from the Goathorn Creek confluence.					

Table 11: October 2024 field trip – Discharge measurements

Location ID	Easting (m)	Northing (m)	Distance Up-Reach [1] (m)	Discharge (m^3/s)
Site 4U	619061	6049705	5,126	0.033
Site 3	619210	6049714	5,061	0.050
Site 4	619100	6049769	5,052	0.033
Upper Headwater Confluence (UHC)	619222	6049894	4,878	0.009
R-06	619251	6050031	4,729	0.017
G-04	619408	6051094	3,805	0.014
R-04	619331	6051202	3,498	0.012
SITE 2	619336	6051224	3,478	0.012
G-02	619331	6051260	3,445	0.012
G-01	619299	6051994	2,661	0.013
SITE 5	619294	6052004	2,662	0.013
FC-24-27	619577	6052482	2,080	0.012
FC-24-30	619516	6052746	1,701	0.019
R-01	619985	6054080	321	0.016



KEY MAP



LEGEND

- Dry Section
- Reach Break
- Watercourse[1]
- Intermittent or Indeterminate Watercourse[1]
- Four Creek[1]
- Proposed Bypass Road
- Resource Road [2]
- Wetland[1]
- Proposed Project Footprint
- Four Creek Watershed[1]

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CLIENT
Telkwa Coal

PROJECT
Tenas Project

TITLE
Dry-Section Locations

SLR

REF. NO. 2404901-MR-009

Figure 12

REV. 1

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Figure 13: Discharge vs Distance - 2024/06/05

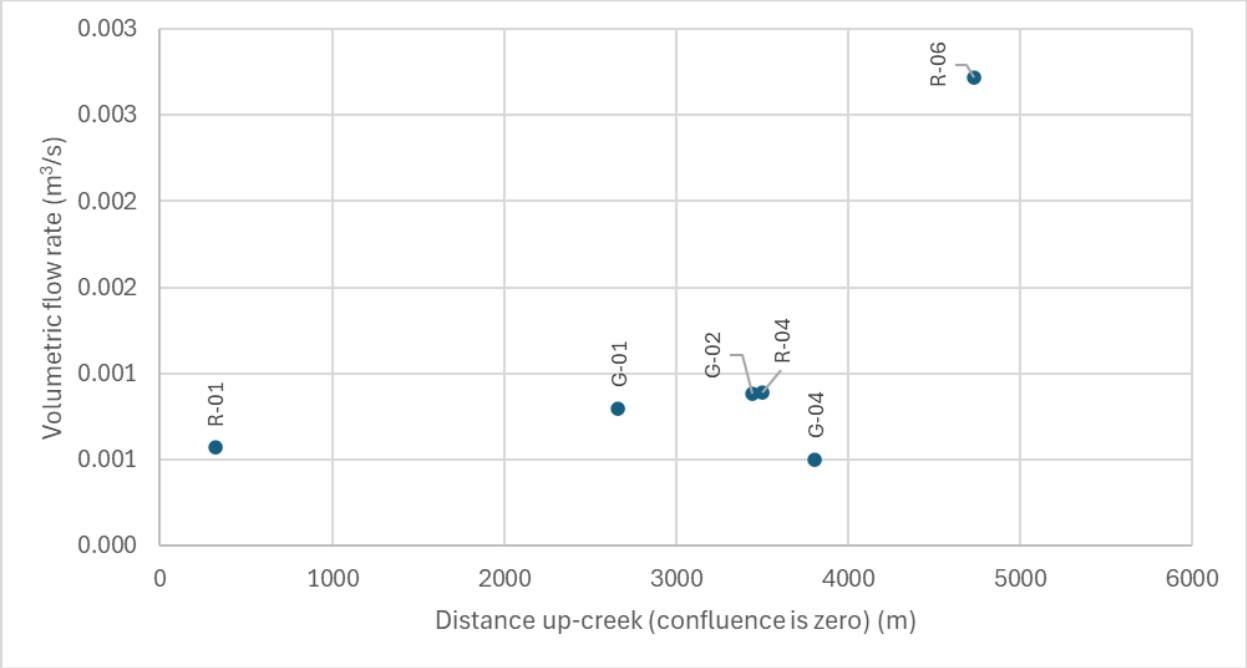


Figure 14: Discharge vs Distance – 2024/09/07 and 2024/09/11

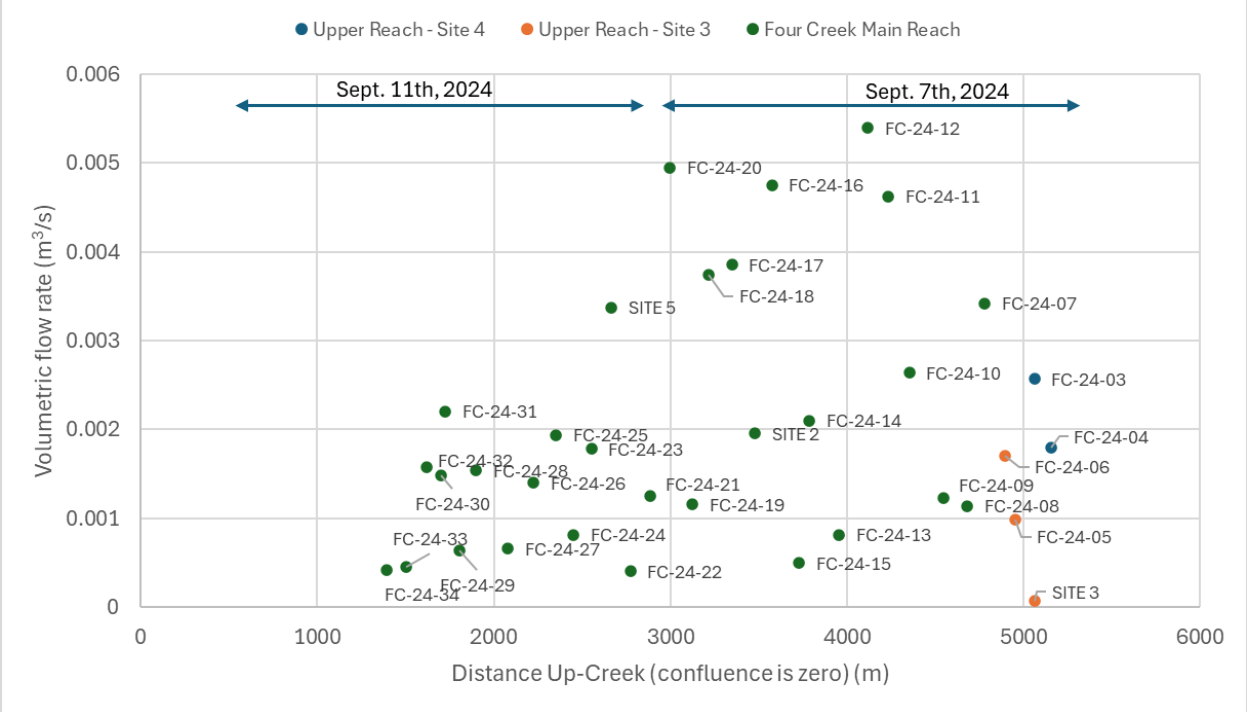
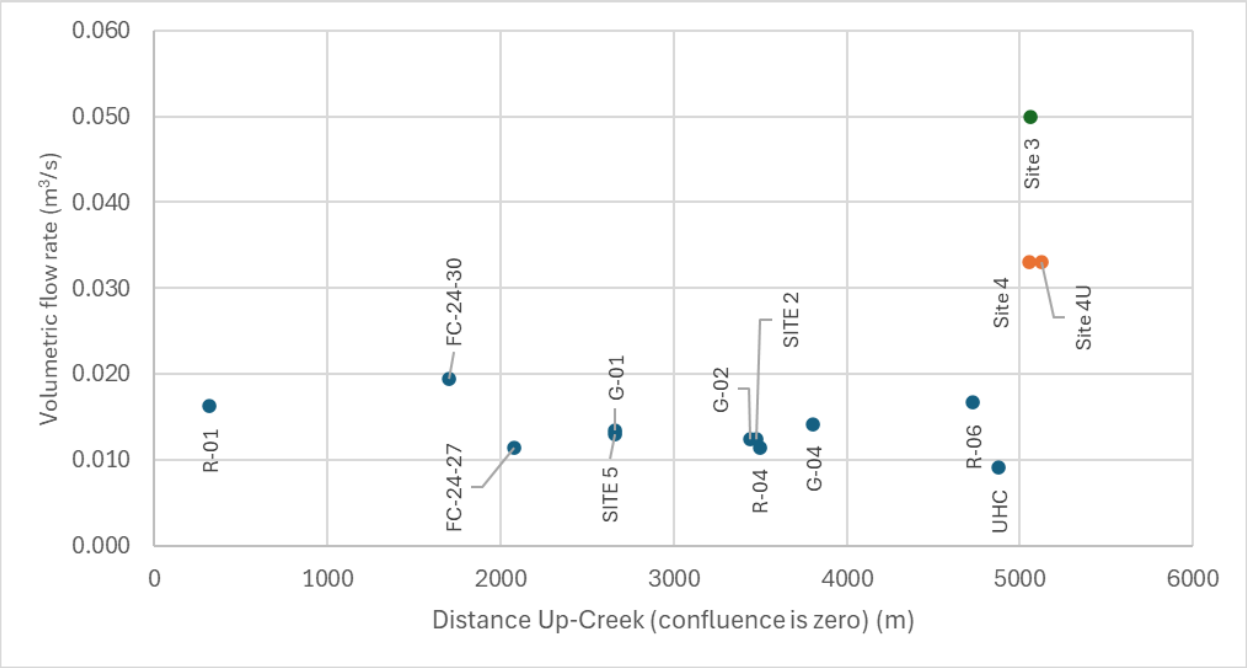


Figure 15: Discharge vs Distance – 2024/10/17



3.2.2 Field Parameter - Conductivity

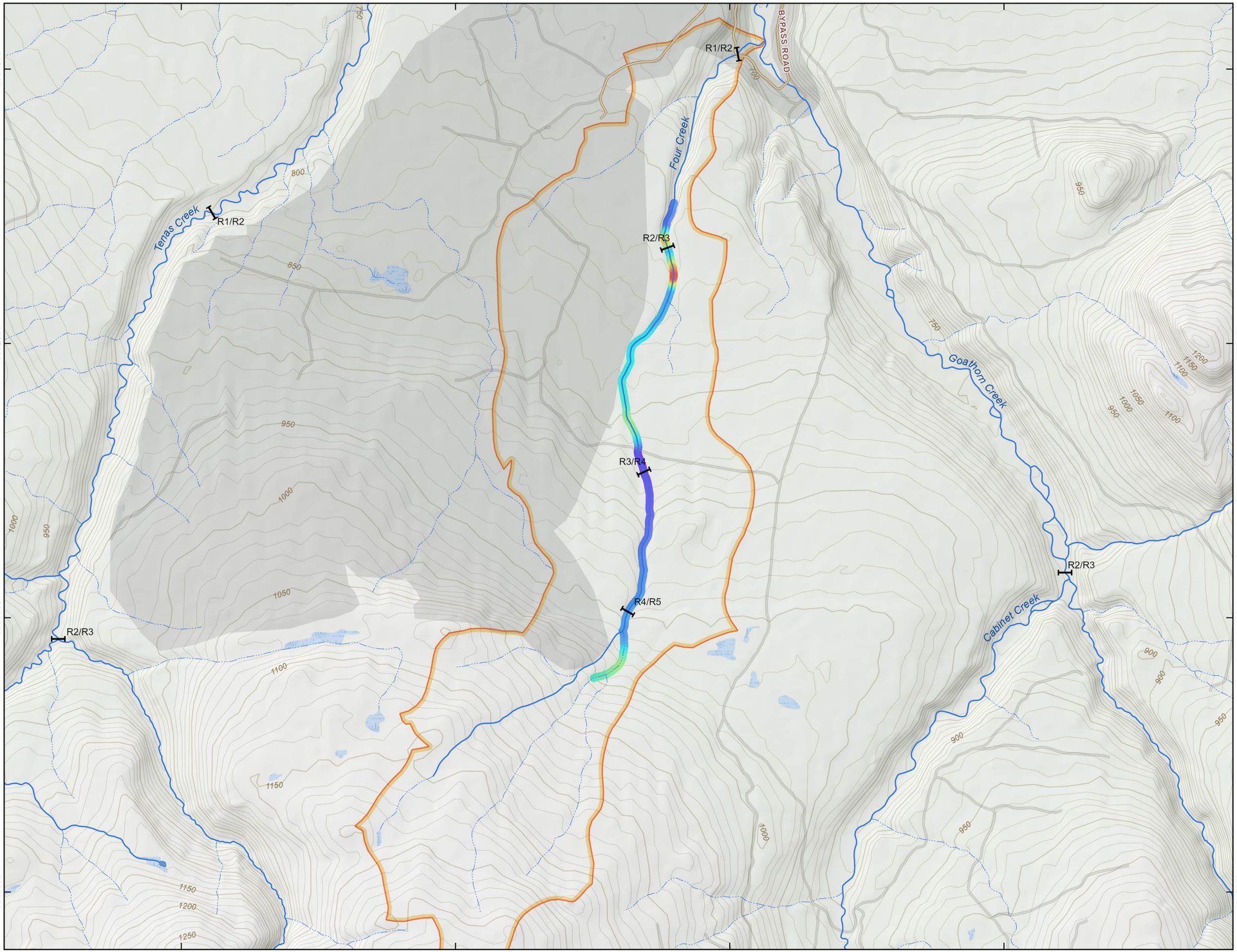
3.2.2.1 September 2024 Survey

The results of the map conductivity survey conducted in September 2024 are included in Table 12 and depicted in Figure 16. The conductivity map was created by interpolating conductivity data points listed in Appendix D, using kriging methodology and Surfer software.

Table 12: Conductivity survey of Four Creek - September 2024

Location ID	Easting (m)	Northing (m)	Date (YYYY/MM/DD)	Specific Conductance (µS/cm)	Conductivity (µS/cm)
FC-24-01	618878	6049566	2024/09/07	373.5	251.8
FC-24-02	618997	6049663	2024/09/07	432.1	285.8
SITE 4 UPPER	619061	6049705	2024/09/07	370.4	253.7
SITE 4	619100	6049769	2024/09/07	374.9	256.7
FC-24-03	619147	6049839	2024/09/07	368.6	253.7
FC-24-04	619222	6049894	2024/09/07	376.0	259.3
SITE 3	619210	6049714	2024/09/07	425.2	290.7
FC-24-05	619198	6049655	2024/09/07	453.3	307.9
FC-24-06	619113	6049580	2024/09/07	432.7	292.3
FC-24-07	619245	6049992	2024/09/07	378.1	263.0
FC-24-08	619295	6050114	2024/09/07	374.6	260.8
FC-24-09	619368	6050296	2024/09/07	370.8	258.9
FC-24-10	619358	6050413	2024/09/07	367.1	257.7
FC-24-11	619368	6050531	2024/09/07	361.6	252.6
FC-24-12	619408	6050688	2024/09/07	352.3	246.2
FC-24-13	619412	6050855	2024/09/07	347.3	244.3
FC-24-14	619410	6050915	2024/09/07	345.4	242.1
FC-24-15	619371	6051062	2024/09/07	340.4	239.9
FC-24-16	619330	6051150	2024/09/07	339.1	245.6
SITE 2	619336	6051224	2024/09/07	336.8	242.9
FC-24-17	619302	6051349	2024/09/11	433.1	272.6
FC-24-18	619264	6051437	2024/09/11	451.9	294.0
FC-24-19	619237	6051561	2024/09/11	417.0	268.7
FC-24-20	619208	6051667	2024/09/11	413.9	268.5
FC-24-21	619228	6051778	2024/09/11	409.0	266.2
FC-24-22	619277	6051878	2024/09/11	407.6	266.0
SITE 5	619294	6052004	2024/09/11	404.0	222.1
FC-24-23	619379	6052055	2024/09/11	405.3	217.0
FC-24-24	619445	6052131	2024/09/11	390.7	261.5
FC-24-25	619517	6052234	2024/09/11	386.0	258.2
FC-24-26	619534	6052379	2024/09/11	378.9	251.8
FC-24-27	619577	6052482	2024/09/11	556.0	374.2

Location ID	Easting (m)	Northing (m)	Date (YYYY/MM/DD)	Specific Conductance (µS/cm)	Conductivity (µS/cm)
FC-24-28	619573	6052577	2024/09/11	372.2	254.4
FC-24-29	619555	6052679	2024/09/11	368.6	244.6
FC-24-30	619516	6052746	2024/09/11	503.0	340.0
FC-24-31	619531	6052847	2024/09/11	360.9	240.2
FC-24-32	619576	6052959	2024/09/11	363.3	242.5
FC-24-33	619585	6053065	2024/09/11	370.1	248.5
FC-24-34	619588	6053139	2024/09/11	382.1	258.7



KEY MAP



LEGEND

- Pond Location along Four Creek
- Reach Break
- Watercourse[1]
- Intermittent or Indeterminate Watercourse[1]
- Resource Road[2]
- Proposed Bypass Road
- Wetland[1]
- Proposed Project Footprint
- Four Creek Watershed[1]

Conductivity

553 µs/cm — 337 µs/cm

1 - BC Freshwater Atlas
2 - BC Digital Road Atlas (for clarity, not all roads displayed)

0 0.5 1 1.5

KILOMETRE SCALE

North American Datum 1983
Universal Transverse Mercator Projection Zone 9 North

Scale: 1:28,000
Page Size: Tabloid (11 x 17 inches)

Drawn: BE/RS
Checked: GH
Date: September 3, 2025

NORTH

Source Notes:
Base map data provided by Natural Resources Canada (CanVec, CDEM) and The Government of British Columbia (BC Freshwater Atlas, Digital Road Atlas). Contour interval is 10 metres (minor) and 50 metres (major). All elevations in metres above sea level.

CLIENT
Telkwa Coal

PROJECT
Tenas Project

TITLE
Interpolated Conductivity Map of Four creek

SLR

REF. NO. 2404901-MR-008

Figure 16

REV. 1

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Conductivity can be highly influenced by runoff; therefore, SLR conducted the conductivity survey in September 2024 during dry conditions. The results indicate that the conductivity values are overall stable, as shown in the histogram (Figure 17). Conductivity in creeks is primarily influenced by groundwater discharge and can vary drastically, especially in low flow conditions, as a function of water runoff, interflow, and groundwater discharge. Readings outside the normal range observed within Four Creek might indicate localized groundwater discharge. The average conductivity observed within Four Creek in September 2024 (low flow conditions) was 392.1 µs/cm.

Two outliers were identified using the Goodness-of-fit tests (Figure 18), which help identify outliers in a data set by pinpointing data points far from the least squares line or with large residuals. The two points, FC-24-30 and FC-24-27, have the potential to represent locations influenced by groundwater recharge. The conductivity values measured at these locations were 503 µs/cm and 536 µs/cm, respectively.

Figure 17: Histogram – Conductivity Survey 2024/09/07 and 2024/09/11

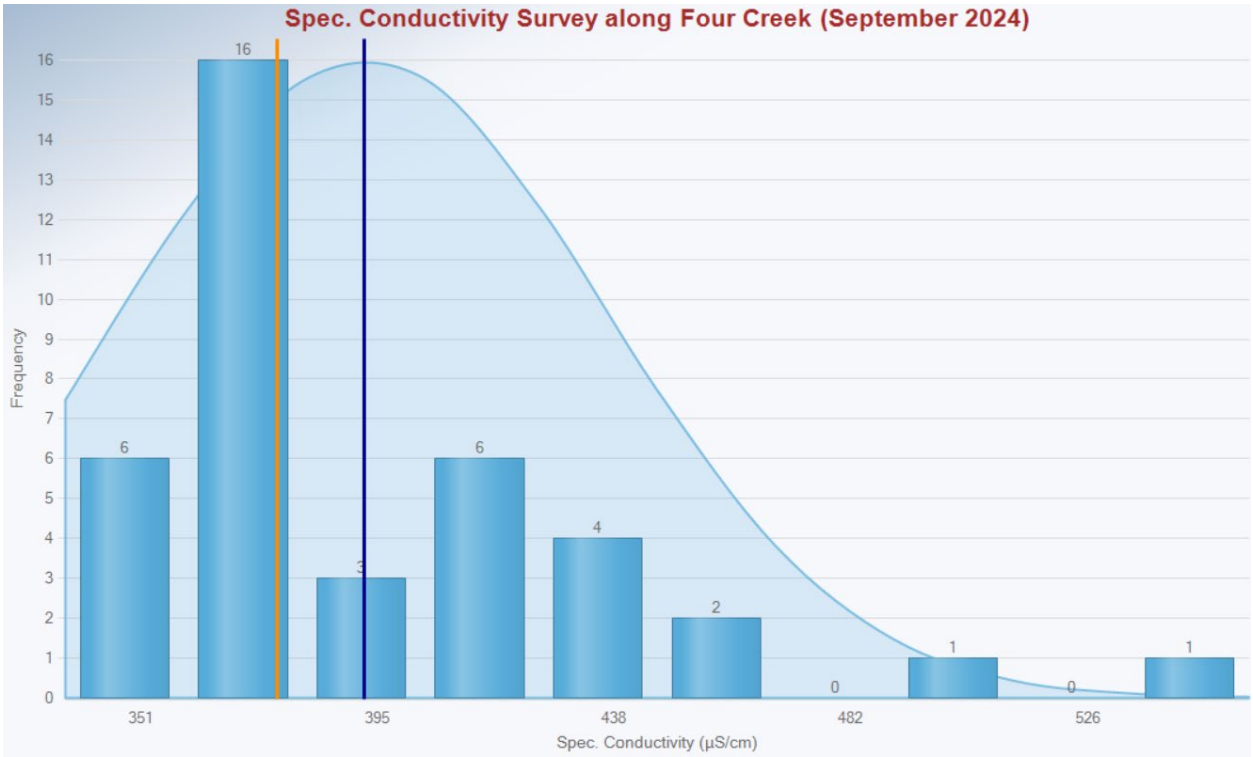
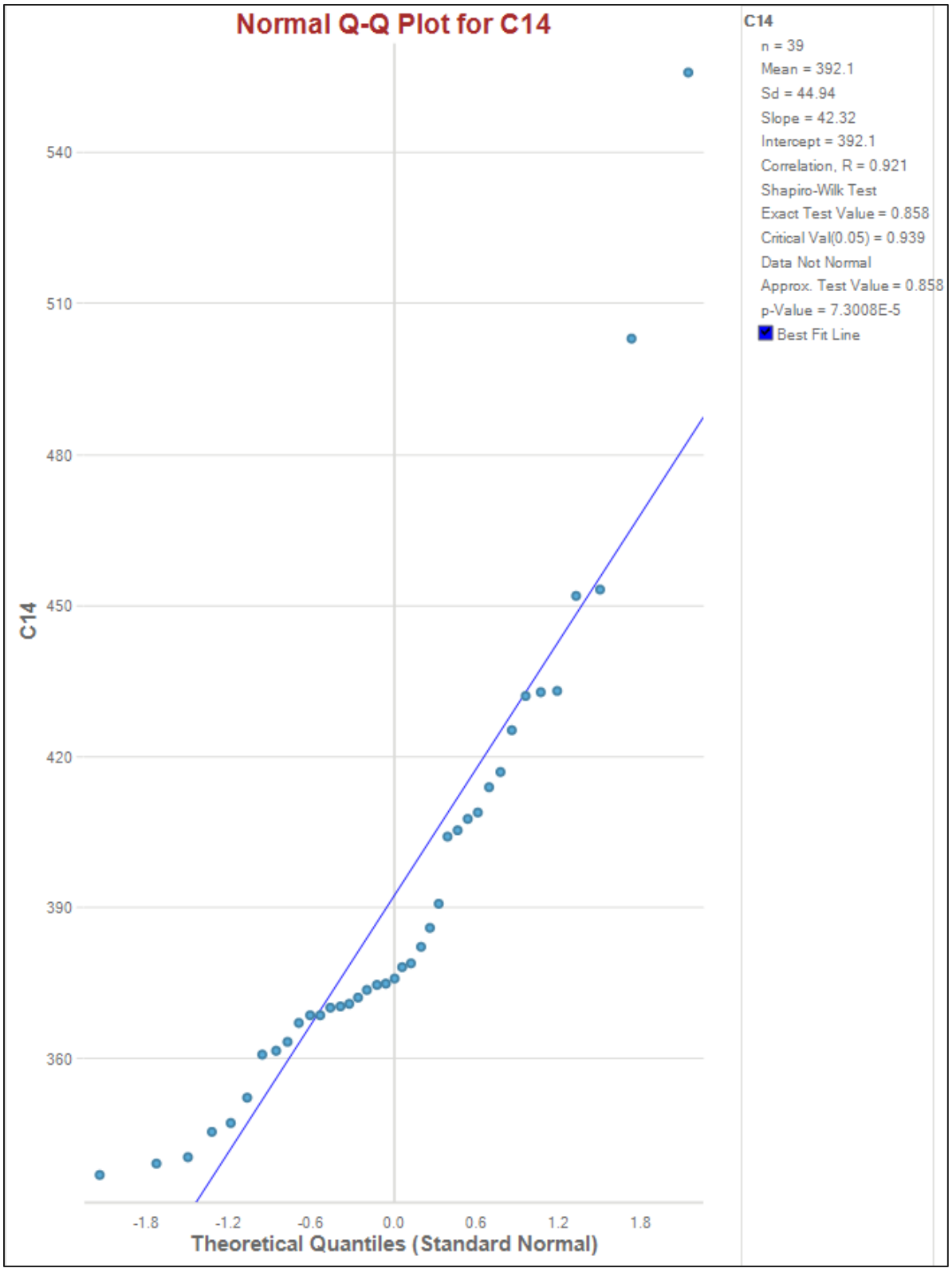


Figure 18: Q-Q plot – Conductivity Survey 2024/09/07 and 2024/09/11



3.2.2.2 Conductivity in Different Water Types

The use of conductivity to differentiate water types has been studied through the analysis of Surface Water, Mini Piezometer, Overburden Monitoring Well, and Bedrock Monitoring Well conductivity data in or near the Four Creek watershed. A summary of the conductivity data collected for each water type is included in Appendix D.

Average values, geometric means, and variance values for each water type are included in Table 13.

Overall, the conductivity measurement values from the MPs and surface water are similar, with an increase in values observed in September 2024 (low flow conditions) when interflow is predominant and there is no runoff due to the absence of precipitation. Conductivity data from the overburden wells present an average specific conductivity value of 633.8 µS/cm, which is approximately 3.3 times the average MP and surface water conductivity values. This is due to the longer residence time in soil, allowing the water to enrich in ionic content.

The conductivity values measured in bedrock monitoring wells are approximately three times higher than the average specific conductivity value measured in overburden monitoring wells and an order of magnitude higher than surface water/interflow. The analysis of electrical conductivity in different water types shows that there are three distinct water types within the Four Creek watershed, each with different electrical conductivity values.

Table 13: Statistical Analysis – Water Types

Water Type	Conductivity (µS/cm)		
	Average	Geomean	Variance
Bedrock monitoring well	2012.4	1884.1	562538.9
Overburden monitoring well	633.8	621.7	18632.9
Mini piezometer	188.1	172.9	5397.3
Surface water	192.4	175.1	6943.2

3.2.3 Groundwater Level Monitoring Data

Manual water levels were measured in July, September and October 2024 at selected MP and MW locations, with surface water level measurements taken concurrently during MP monitoring.

Groundwater levels measured in overburden and bedrock MWs are summarized in Table 14 (July 2024) and Table 15 (September 2024). The MP and surface water manual water measurements are presented in Table 16 (July 2024), Table 17 (September 2024), and Table 18 (October 2024).

The purpose of the 2024 groundwater/surface water interaction field program was to characterize the relationship between shallow groundwater and surface water in Four Creek. This characterization aimed to assess the direction and magnitude of the vertical hydraulic gradient between surface water and groundwater within the stream beds. The vertical hydraulic gradient is a critical parameter for understanding groundwater flow dynamics, such as recharge, discharge, or interactions with surface water bodies. An upwards hydraulic gradient indicates that groundwater is discharging into the creek, supporting baseflow (i.e., the portion of surface water flow sustained by groundwater inputs). Conversely, a negative hydraulic gradient indicates that the creek is losing water to the groundwater table as recharge.

The methods used to complete the 2024 shallow groundwater/surface water interactions are outlined in this section.

Table 14: Monitoring Well - Groundwater Levels July 2024

Monitoring Well	Ground Elevation (masl)	Stick-up (m)	Date Measured	Water Level Measurements		
				mbtoc	mbgs	masl
T95R-64	951.4	1.23	2024/07/04	7.4	6.2	945.2
TOB96-02-06	852.5	0.38	2024/07/08	4.5	4.1	848.4
TOB96-01-05	922.3	0.75	2024/07/07	2.4	1.7	920.6
T19-18S	815.2	0.82	2024/07/09	29.6	28.8	786.4
T95R-40	904.3	0.35	2024/07/09	8.3	7.9	896.4
T18-01D	961.4	0.99	2024/07/08	13.0	12.0	949.4
T19-19S	840.0	2.20	2024/07/07	Dry		

Note:
mbtoc – metres below top of casing
mbgs – metres below ground surface
masl – metres above sea level

Table 15: Monitoring Well - Groundwater Levels September 2024

Monitoring Well	Ground Elevation (masl)	Stick-up (m)	Date Measured	Water Level Measurements		
				mbtoc	mbgs	masl
T95R-64	951.4	1.23	2024/09/06	7.6	6.4	945.1
TOB96-02-06	852.5	0.38	2024/09/06	4.6	4.2	848.3
TOB96-01-05	922.3	0.75	2024/09/07	dry		
21-41S	na	0.71	2024/09/07	dry		
T19-18S	815.2	0.82	2024/09/08	31.7	30.9	784.3
T95R-40	904.3	0.35	2024/09/09	8.3	7.9	896.4
T18-01D	961.4	0.99	2024/09/08	13.1	12.2	949.3

Note:
mbtoc – metres below top of casing
mbgs – metres below ground surface
masl – metres above sea level

Table 16: Mini Piezometer-Surface Water / Groundwater Level Monitoring July 2024

MP Information							GW Levels					
							2024/07/04-2024/07/07					
MP ID	Easting (From Master)	Northing (From Master)	Total Pipe Length (mbtoc)	Depth to bottom of screen (mbgs)	Ground Elevation (masl)	Stick Up (m)	mbtoc		mbgs		masl	
							in	out	in	out	in	out
Site 2 S	619343	6051237	1.12	0.56	864	0.54	0.51	0.48	-0.05	-0.09	864.06	864.09
Site 2 D	619343	6051237	2.16	1.01	864	1.16	1.01	1.06	-0.14	-0.09	864.14	864.09
Site 3 S	619218	6049722	1.11	0.55	973	0.61	0.44	0.42	-0.12	-0.14	973.12	973.14
Site 3 D	619218	6049722	1.84	1.00	973	0.99	0.90	0.91	-0.14	-0.13	973.14	973.13
Site 4 S	619097	6049776	1.12	0.41	980	0.70	0.84	0.69	0.13	-0.02	979.87	980.02
Site 4 D	619097	6049776	2.10	0.89	980	1.17	1.25	1.18	0.03	-0.04	979.97	980.04
Site 4 Upper S	619060	6049713	1.15	0.51	980	0.65	0.65	0.56	0.01	-0.08	979.70	979.78
Site 4 Upper D	619060	6049713	1.86	1.75	980	1.06	0.24	0.07	0.13	-0.04	979.87	980.04
Site 5 S	619301	6051999	1.46	0.85	831	0.62	0.71	0.55	0.09	-0.07	830.91	831.07
Site 5 D	619301	6051999	2.57	1.82	831	0.75	1.89	0.65	1.14	-0.11	829.86	831.11

Table 17: Mini Piezometer-Surface Water / Groundwater Level Monitoring September 2024

MP Information							GW Levels					
							2024/09/06-2024/09/11					
MP ID	Easting (From Master)	Northing (From Master)	Total Pipe Length (mbtoc)	Depth to bottom of screen (mbgs)	Ground Elevation (masl)	Stick Up (m)	mbtoc		mbgs		masl	
							in	out	in	out	in	out
Site 2 S	619343	6051237	1.12	0.56	864	0.54	0.88	0.86	0.32	0.30	863.69	863.71
Site 2 D	619343	6051237	2.16	1.01	864	1.16	1.67	1.10	0.52	-0.05	863.48	864.05
Site 3 S	619218	6049722	1.11	0.55	973	0.61	0.05	0.05	-0.56	-0.56	973.56	973.56
Site 3 D	619218	6049722	1.84	1.00	973	0.99	0.05	0.05	-1.04	-1.04	974.04	974.04
Site 4 S	619097	6049776	1.12	0.41	980	0.70	0.88	0.72	0.17	0.01	979.83	979.99
Site 4 D	619097	6049776	2.10	0.89	980	1.17	1.59	1.20	0.38	-0.02	979.63	980.02
Site 4 Upper S	619060	6049713	1.15	0.51	980	0.65	0.98	0.59	0.34	-0.05	979.36	979.75
Site 4 Upper D	619060	6049713	1.86	1.75	980	1.06	0.26	0.06	0.15	-0.05	979.85	980.05
Site 5 S	619301	6051999	1.46	0.85	831	0.62	0.89	0.54	0.28	-0.08	830.73	831.08
Site 5 D	619301	6051999	2.57	1.82	831	0.75	2.02	0.65	1.27	-0.10	829.73	831.10

Table 18: Mini Piezometer-Surface Water / Groundwater Level Monitoring October 2024

MP Information							GW Levels					
							2024/10/16-2024/10/17					
MP ID	Easting (From Master)	Northing (From Master)	Total Pipe Length (mbtoc)	Depth to bottom of screen (mbgs)	Ground Elevation (masl)	Stick Up (m)	mbtoc		mbgs		masl	
							in	out	in	out	in	out
Site 2 S	619343	6051237	1.12	0.56	864	0.54	0.50	-	-0.04	-	863.69	-
Site 2 D	619343	6051237	2.16	1.01	864	1.16	1.50	-	0.34	-	863.48	-
Site 3 S	619218	6049722	1.11	0.55	973	0.61	0.41	-	-0.20	-	973.56	-
Site 3 D	619218	6049722	1.84	1.00	973	0.99	0.88	-	-0.11	-	974.04	-
Site 4 S	619097	6049776	1.12	0.41	980	0.7	0.84	-	0.14	-	979.83	-
Site 4 D	619097	6049776	2.10	0.89	980	1.17	1.52	-	0.35	-	979.63	-
Site 4 Upper S	619060	6049713	1.15	0.51	980	0.65	0.65	-	-0.01	-	979.36	-
Site 4 Upper D	619060	6049713	1.86	1.75	980	1.06	1.25	-	0.19	-	979.85	-
Site 5 S	619301	6051999	1.46	0.85	831	0.62	0.73	-	0.11	-	830.73	-
Site 5 D	619301	6051999	2.57	1.82	831	0.75	1.87	-	1.12	-	829.73	-

[-] No ‘out’ measurements were taken during the October 2024 trip.

Due to limited data, groundwater flow contours for water circulating in the overburden and bedrock are not presented. The available data shows that some of the overburden monitoring wells are either dry (21-44S, 21-41S, T18-02S, and T19-19S) or present deep water levels (21-40S, 21-43S, T19-18S, and 21-55S). This indicates that a defined water table does not exist in the overburden within the Four Creek watershed, consistent with the hydrogeology conceptual model of Four Creek being a perched surface water feature.

Shallow groundwater levels were measured at shallow overburden monitoring wells TOB96-01-05 and TOB96-02-06. Given that both monitoring wells are less than three meters deep, it is expected that they intercept the same interflow pattern as the mini piezometers.

3.2.4 Vertical Gradients

Calculated gradients were constantly negative in all the measurements at Site 2S, Site 3S, Site 4S, Site 4D, Site4upperD, Site 5S and Site 5D. Site2D shows negative vertical gradients in all the monitoring events, except for April 2022 and July 2024. Similarly, Site 3D and Site 4 Upper S show consistently negative vertical gradients, except for July 2024 and November 2021, respectively.

A summary of the vertical gradients at each MP location is summarized in Table 19, a complete list of all the calculated vertical gradients is shown in Table 20.

Overall, negative vertical gradients are consistent throughout the different seasons and all the monitoring locations, indicating that Four Creek is primarily a losing stream.

Table 19: Statistical Analysis – Vertical Gradients

MP ID	Easting	Northing	Max Gradient	Min Gradient	Average Gradient	Number of measurements
Site 2 S	619343	6051237	-1.30	-0.04	-0.41	7
Site 2 D	619343	6051237	-1.05	0.06	-0.35	7
Site 3 S	619218	6049722	-1.45	-0.02	-0.46	6
Site 3 D	619218	6049722	-1.15	0.01	-0.52	6
Site 4 S	619097	6049776	-1.41	-0.29	-0.75	7
Site 4 D	619097	6049776	-0.96	-0.08	-0.46	7
Site 4 Upper S	619060	6049713	-1.16	0.12	-0.39	7
Site 4 Upper D	619060	6049713	-0.31	-0.05	-0.14	7
Site 5 S	619301	6051999	-0.41	-0.19	-0.30	2
Site 5 D	619301	6051999	-0.75	-0.72	-0.72	2

Table 20: Vertical Gradients – Summary of field data collected during each field trip (2021-2024)

MP ID	Vertical Gradient						
	2021/11/05-2021/11/19	2022/01/10-2022/01/11	2022/04/25-2022/04/26	2022/11/08-2022/11/10	2023/10/11	2024/07/04-2024/07/07	2024/09/06-2024/09/11
Site 2 S	-1.15	-1.30	-0.18	-0.09	-0.07	-0.05	-0.04
Site 2 D	-1.05	-0.67	0.06	-0.25	-0.03	0.05	-0.56
Site 3 S	-0.02	-1.45	-0.04	-1.22	-0.02	-0.04	-
Site 3 D	-0.88	-1.15	-0.08	-1.02	-0.02	0.01	-
Site 4 S	-1.15	-1.41	-0.29	-1.17	-0.46	-0.37	-0.39
Site 4 D	-0.54	-0.99	-0.37	-0.68	-0.11	-0.08	-0.44
Site 4 Upper S	0.12	-0.47	-0.04	-1.16	-0.22	-0.17	-0.76
Site 4 Upper D	-0.25	-0.31	-0.06	-0.09	-0.05	-0.10	-0.11
Site 5 S	-	-	-	-	-	-0.19	-0.41
Site 5 D	-	-	-	-	-	-0.68	-0.75

Notes:
Orange denotes negative vertical gradients, red indicates vertical gradients estimated using the bottom of the MP (dry), blue indicates positive gradients.

3.2.5 Groundwater Facies

To characterize the different groundwater facies at Four Creek, Piper plots were produced for the water chemistry of samples collected at the surface water, MP, overburden MW, and bedrock MW locations (Appendix E). The Piper plot utilizes major anion (bicarbonate, chloride, and sulfate) and cation (calcium, magnesium, sodium, and potassium) concentrations to identify differences in groundwater chemistry and provide insights into the origin of the water and its geochemical history.

Groundwater facies for the Four Creek watershed are discussed based on each water type identified in the previous paragraph.

3.2.5.1 Surface Water and Interflow

The interpretation of Piper's trilinear diagram for surface water and MP water samples revealed that calcium (Ca) and bicarbonate (HCO_3) are the predominant cations and anions. Therefore, all water samples are classified as calcium bicarbonate ($CaHCO_3$) hydrochemical facies. Evaluation of the water types using the Piper plot suggests a clear correlation between the water circulating in the interflow (screened from the MPs) and surface water. The water samples refer to both low flow conditions (September 2024) and medium flow conditions (October 2024).

3.2.5.2 Overburden Monitoring Wells

Groundwater chemistry data are available for monitoring wells T19-18S, TOB96-01-05, and TOB-02-06. Monitoring wells TOB96-01-05 and TOB-02-06 have total depths of 4.6 and 6.4 mbgs, respectively, and are expected to be more representative of interflow conditions rather than overburden (Till) groundwater flow circulation. Monitoring Well T19-18S, which has a total depth of approximately 36 mbgs, is expected to represent groundwater chemistry in the overburden. The water samples collected at this location show a mixed/sodium-bicarbonate type facies.

3.2.5.3 Bedrock Monitoring Wells

Monitoring wells T18-01D, T95R-40, and T95R-64 are installed within the bedrock. They all show a strong sodium-bicarbonate water type, with alkaline earth and weak acids predominating.

3.3 Evaluation of Perched Conditions

The focus of the additional Hydrology and Hydrogeology programs conducted by SLR was to investigate the assertion, based on field observations, that Four Creek is a perched system and is not groundwater supported. That is Four Creek does not receive substantial flow from the saturated zone (below the water table) of an aquifer.

The results clearly show that interflow and surface water have a $CaHCO_3$ waters typical of shallow and fresh waters, groundwater in the overburden materials have a mixed water type with no predominant cations or anions, and bedrock groundwater show a $NaHCO_3$ water which is typical of deeper groundwater influenced by ion exchange.

Based on the findings of the SLR hydrogeological and hydrological study, the Four Creek flow comes not only from direct precipitation and overland flow but also from interflow. The collected hydrogeological data indicate that both the overburden aquifer system and the bedrock aquifer do not discharge directly into the creek and that groundwater is not supporting the baseflow.

The contribution of interflow to the creek baseflow is not expected to vary greatly within the watershed considering that the conductivity survey conducted in September 2024 show minimal variation throughout the entire length of the creek, except for locations FC-24-27 and FC-24-30 where higher conductivity values were observed. These two locations will be further investigated in 2025, to assess for vertical gradients between surface water and interflow.

A permanent deep-water table exist in the till and the bedrock, in addition several of the monitoring wells installed in the overburden are dry indicating that a “real” and continuous water table in the overburden does not exist. Groundwater discharge from the bedrock groundwater and the deep overburden groundwater systems is directed toward Telkwa River, Tenas Creek and Goathorn Creek.

A downward vertical gradient exists between the upper surficial deposits (interflow) and the deep overburden and bedrock units.

Given this conceptual model, the majority of Four Creek is considered to be a losing stream disconnected from the groundwater circulation in overburden and bedrock. This is the reason that Four Creek is intermittent, with many dry reaches and isolated pools during dry periods. Any bedrock dewatering for the proposed open pit to be advanced within or in close proximity of the Four Creek is not expected to negatively impact groundwater discharge to Four Creek considering that the groundwater flow from these geological units does not contribute to the flow

in Four Creek. Impacts to Four Creek flows are expected to be associated with the reduction in Four Creek watershed due to the footprint of the proposed mine infrastructures that will divert the natural runoff and interflow away from Four Creek.

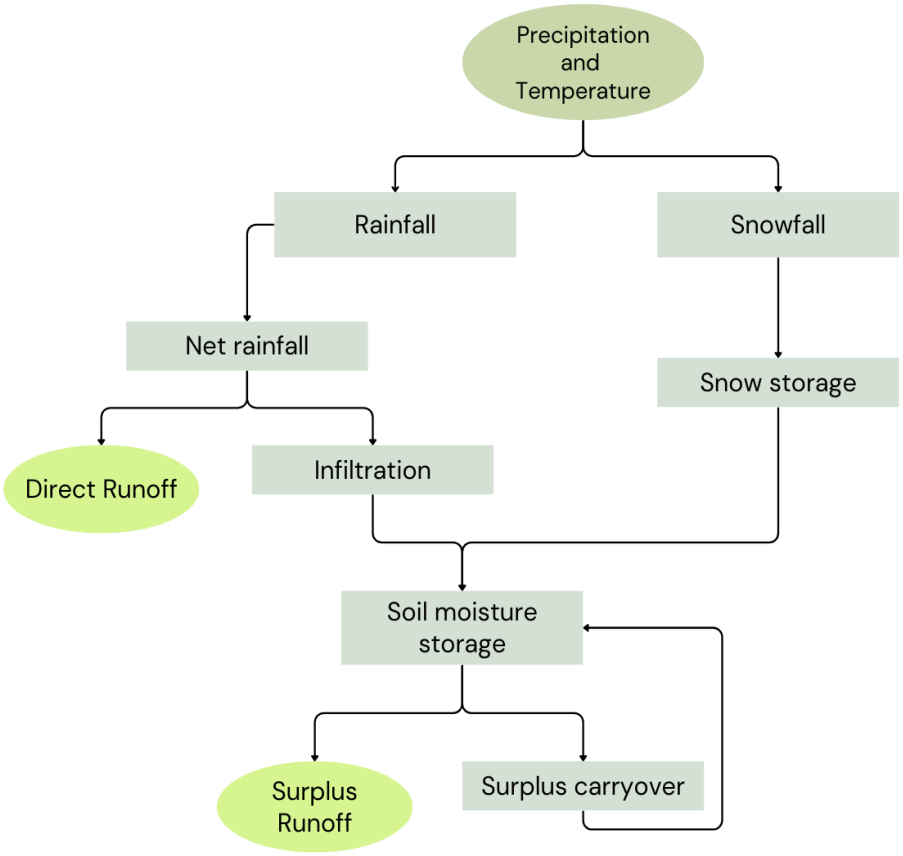
4.0 Water Balance Model

Based on the findings of Section 3.0, interflow is believed to predominantly drive baseflow contributions to Four Creek. This section outlines a water balance model, that was developed to better understand how discharge in Four Creek is expected to be affected by mine construction. A water balance model that was developed to predict average monthly streamflow under natural conditions in BC that is presented by Moore et al. (2012) was modified for this application. The water balance model estimates changes in discharge by simulating key hydrological processes, including snow accumulation and melt, evapotranspiration losses, soil moisture storage, and runoff generation. This modelling platform was selected due to its relative simplicity, its ability to be modified to represent key characteristics that are understood to govern discharge in Four Creek, including snowmelt and interflow processes. The model was first constructed and calibrated using available baseline data from the Project. Once the model calibration was deemed sufficient, it was then modified to predict stream discharge under future phases of mine development.

4.1 Model Overview

The model operates on a monthly timestep following the structure presented in Figure 19. Its function is described in the below sections.

Figure 19: Model Overview



Source: as adapted from Moore et al 2012.

4.1.1 Precipitation

The model is forced monthly with average monthly precipitation and temperature data. Precipitation is partitioned into rainfall and snowfall based on temperature thresholds. A rainfall threshold (T_{rain}) and a snowfall threshold (T_{snow}) define the temperature limits above which all precipitation is treated as rain and below which it is treated as snow. When the average monthly air temperature is between these thresholds, precipitation is distributed as a combination of rain and snow based on the following formula (Moore et al. 2012).

$$SF = \frac{P(T_{rain} - T)}{(T_{rain} - T_{snow})}$$

$$RF = P - SF$$

Where *SF* is the portion of precipitation that falls as snowfall, *T* is the average monthly air temperature, and *RF* is the portion of precipitation that falls as rainfall.

The model structure presented by Moore et al. (2012) was modified by introducing a precipitation adjustment factor that is adjusted through the calibration process and is intended to compensate for possible bias in monthly precipitation inputs. In addition, the model incorporates canopy interception loss by applying land cover–specific interception fractions to rainfall and snowfall prior to partitioning into surface or subsurface pathways. These interception loss fractions are defined by the BEC zone of the watershed.

A portion of rainfall that does not infiltrate is classified as direct runoff, contributing immediately to stream discharge

Snowfall that reaches the surface is stored in a snowpack, which remains until temperatures exceed the melt threshold. Snowmelt is governed by a degree-day melt factor (K_m) that defines the rate of that snowmelt is released to contribute to soil moisture storage and runoff.

For months where mean air temperature exceeds 0°C, potential melt (M_{pot}) is calculated through the following equation:

$$Mpot = K_m \cdot T \cdot n_d$$

Where n_d is the number of days in a given month. Actual melt (M) is then calculated as the lesser of potential melt and the available snowpack:

$$M = \min\left(M_{pot}, SWE_{i-1} + SF_{net}\right)$$

where SWE_{i-1} is the snowpack storage at the end of the previous month. The snowpack storage at the end of the current month is then updated.

4.1.2 Evapotranspiration

Evapotranspiration is represented in the model using the Hamon equation, which estimates potential evapotranspiration (PET) as a function of mean monthly air temperature and day length (Moore et al 2012). PET is then adjusted by subtracting the interception loss (PET_{adj}). This adjusted PET is used to calculate withdrawals from soil moisture storage in snow-free months based on the actual water available for transpiration (i.e., actual evapotranspiration). In months when snow is present, evapotranspiration is assumed to be zero.

4.1.3 Soil Moisture

Rainfall and snowmelt then contribute to soil moisture storage. Initially, soil moisture is defined as the starting volume of water stored in the soil at the beginning of the simulation. To establish a stable starting condition, the model was iteratively spun up by running multiple cycles until moisture storage stabilized. After two iterations, the model consistently converged to the recommended USGS soil moisture capacity value of 150 mm, which was then used as the initial condition.

The model dynamically updates soil moisture each month, and when storage exceeds a specified capacity, the excess is transferred to surplus storage. The soil moisture capacity defines the maximum volume of water the soil can retain.

Surplus storage represents the excess water that is available for delayed release after the soil moisture capacity has been reached. A surplus runoff factor determines the proportion of this storage released as runoff each month, with the remainder carried over to subsequent time steps. When monthly soil moisture inputs exceed the defined soil moisture capacity, a portion is released as direct runoff and another portion is routed to carryover surplus, thereby contributing to delayed runoff. This mechanism indirectly accounts for interflow and other subsurface contributions to streamflow that occur on delayed timescales. This behaviour is controlled by the direct runoff factor, which defines the proportion of rainfall that bypasses soil storage.

4.1.4 Runoff Generation

Total runoff is calculated as the sum of direct runoff and surplus runoff. Total runoff per month is modelled to estimate streamflow conditions in Four Creek under different water management scenarios.

Although the original model was developed for ungauged catchments without sufficient calibration data, continuous baseline discharge records were available for Four Creek. As a result, the model was adapted to incorporate observed discharge data, allowing for parameter calibration and improved representation of watershed conditions. The parameters interception loss, degree-day factor, soil moisture capacity, and surplus runoff factor were modified from their standard values to better reflect site-specific conditions, as summarized in Table 22.

Shallow subsurface flow (interflow) and surface runoff are represented through the soil moisture component of the model, while deeper groundwater contributions such as baseflow are not included.

4.1.5 Land Cover Classification

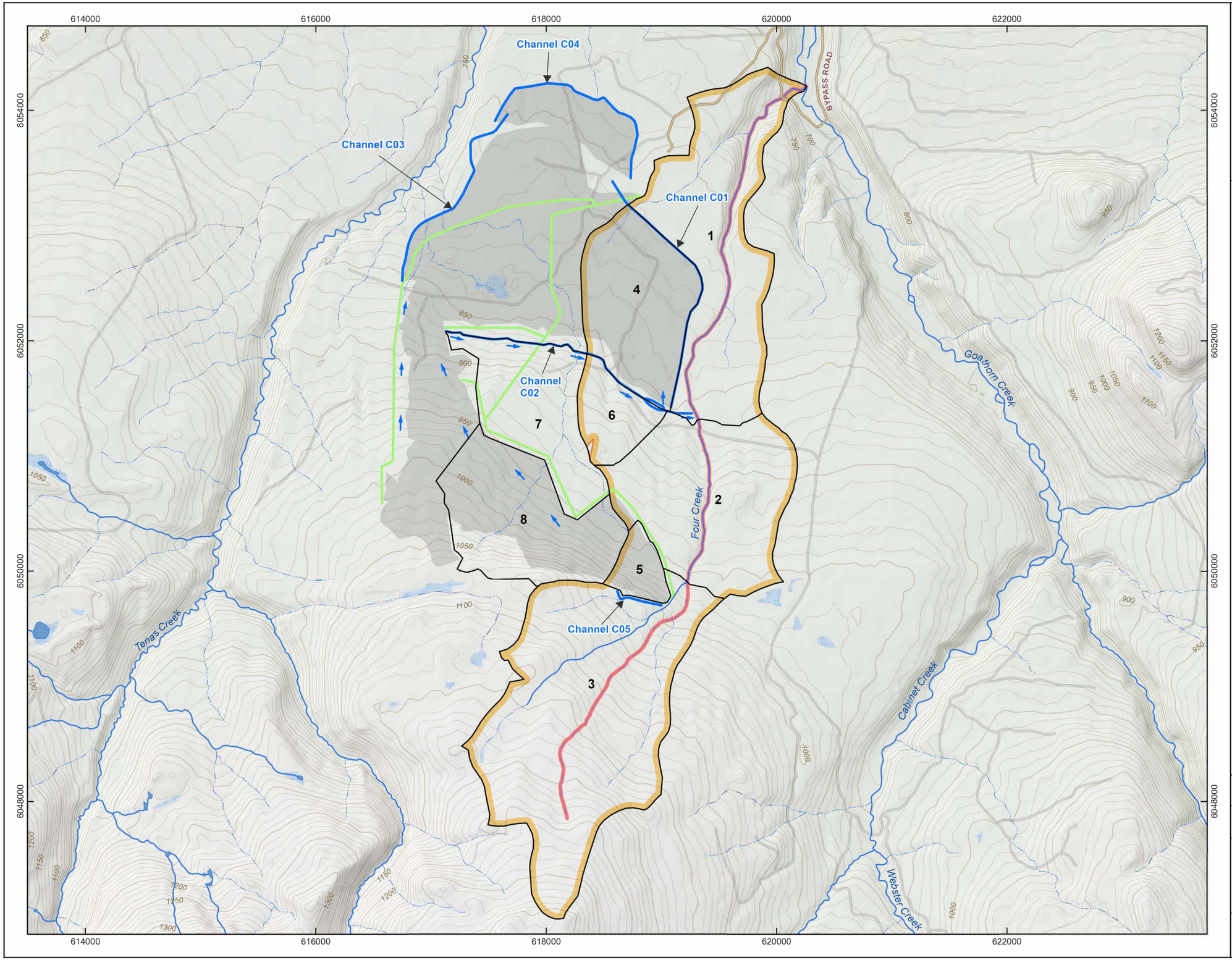
Land cover classification is a required model input to account for spatial differences in hydrological response. The model includes predefined land cover types such as forests, open land, glaciers, and surface water bodies, each affecting how water is partitioned between infiltration, storage, and runoff. For the Four Creek watershed, land cover was determined using BEC zones, which indicated that the area is predominantly forested. Consequently, the model was configured assuming full forest coverage, with an interception loss parameter representing the fraction of precipitation retained by the forest canopy before reaching the ground (Moore et al. 2012). This interception reduces the effective precipitation available for infiltration and runoff.

4.2 Methods

4.2.1 Watershed Discretization

Land cover classifications used in the model were based on BEC zones identified in the Four Creek watershed. Though the watershed consisted of two BEC zones, SBS and ESSF, given the limited variability between these zones, a single land classification of full forest was applied in the model for the entire watershed area.

The model was developed to simulate streamflow at the Four-Hydro hydrometric station, located near the mouth of Four Creek (Figure 2). Hydrologic Response Units (HRUs), which are specific areas within a watershed delineated based on similar hydrological characteristics, such as land use, soil type, vegetation, and topography, were used to discretize the Four Creek watershed. For Four Creek, HRUs were delineated to account for variations in the anticipated hydrological responses across different areas, particularly in relation to land-use changes associated with the project. This process involved identifying areas where surface water would be redirected from Four Creek to management ponds, as well as areas outside the watershed where surface water would be redirected into Four Creek via Channel C02, as described in the Water Management Plan outlined by SRK (2022c). Additional considerations included aligning HRU outlets with hydrometric data collection sites where feasible and maintaining contour bands when possible. Elevation and watershed boundary data were collected from Freshwater Atlas (2024). There is inherent uncertainty with the provincial watershed and elevation data set. Seven HRUs were identified in the Four Creek Watershed (Figure 20) and are detailed in Table 21.



KEY MAP



LEGEND

- Water Flow Direction[1]
- Proposed Road[1]
- Water Management Feature[1]
- Watercourse[2]
- Intermittent or Indeterminate Watercourse[2]
- Four Creek[2]
- Resource Road [3]
- Hydrologic Response Unit (HRU)
- Wetland[1]
- Proposed Project Footprint[1]
- Four Creek Watershed[2]

1 - SRK Consulting/Telkwa Coal, 2022 - Disclaimer: all features are approximate and should be used for discussion purposes only.
2 - BC Freshwater Atlas
3 - BC Digital Road Atlas (for clarity, not all roads displayed)

0 0.5 1 1.5 2

KILOMETRE SCALE

North American Datum 1983
Universal Transverse Mercator Projection Zone 9 North

Scale: 1:32,000
Page Size: Tabloid (11 x 17 inches)

Drawn: BE/RS
Checked: JB
Date: September 3, 2025

NORTH

Source Notes:
Base map data provided by Natural Resources Canada (CanVec, CDEM) and The Government of British Columbia (BC Freshwater Atlas, Digital Road Atlas). The Water Flow Direction and Management Feature, as well as the Proposed Road and Project Footprint, were digitized from the SRK Consulting and Telkwa Coal Water Management Design Technical Report (2022). Contour interval is 10 metres (minor) and 50 metres (major). All elevations in metres above sea level.

CLIENT
Telkwa Coal

PROJECT
Tenas Project

TITLE
Model Discretization

SLR

REF. NO. 2404901-MR-018

Figure 20

REV. 1

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Table 21: HRU Characteristics delineated for the Four Creek water balance model

HRU	Area (km^2)	Mean elevation (m)	Median elevation (m)	Potential change
1	2.3	804	807	No proposed changes.
2	1.9	912	916	No proposed changes.
3	3.5	1140	1142	No proposed changes.
4	1.3	834	836	Proposed to be converted to management pond. No runoff expected from this HRU into Four Creek in operation, closure, or post-closure phases.
5	0.2	975	970	Proposed to be backfilled. No runoff expected from this HRU into Four Creek in operation, closure, or post-closure phases.
6	0.4	892	893	No proposed changes.
7	1.1	914	921	Runoff from this HRU expected to be diverted into Four Creek by end of year 10 operation phase through collection channel CO2.
8	1.4	1,000	994	Runoff from this HRU expected to be diverted into Four Creek by operation (end of year 10) phase. By closure phase, HRU 8 proposed to be converted to pit and runoff will be diverted out of the watershed during closure / post-post closure phase.

Based on the provincial watershed boundary GIS data, the total Four Creek watershed area is approximately 9.5 km^2. The total area of all HRUs, which includes areas outside of the watershed is approximately 11.7 km^2.

4.2.2 Climate Forcing Data

The precipitation and temperature forcing data utilized in the model were collected at an on-site meteorological station situated at an elevation of 993 masl, covering the period from 2020 to 2024 (Figure 2). This period was selected to align with the available hydrological data for Four Creek that was used for model calibration.

To account for differences in elevation amongst HRUs, temperature and precipitation lapse rates were calculated using concurrent data from the 2017-2024 period that were collected by the ERM weather station at 993 masl (ERM 2025) and the Environment Canada weather station in Smithers, located at 518 masl, for the same period (Environment Canada 2025). Lapse rates were calculated monthly by dividing the difference in monthly temperature or precipitation between the two meteorological stations by the difference in elevation. A histogram of the resulting lapse rates was generated, and the mean lapse rate was selected for use in the model.

Scatterplots between temperature and precipitation data from the Smithers station and the project site station is presented in Figure 21 and Figure 22, respectively, to visualize the trends between the two sites.

Figure 21: Monthly correlation in temperature between the Smithers meteorological station (520 masl) and the project site station (993 masl) for the 2017–2024 period

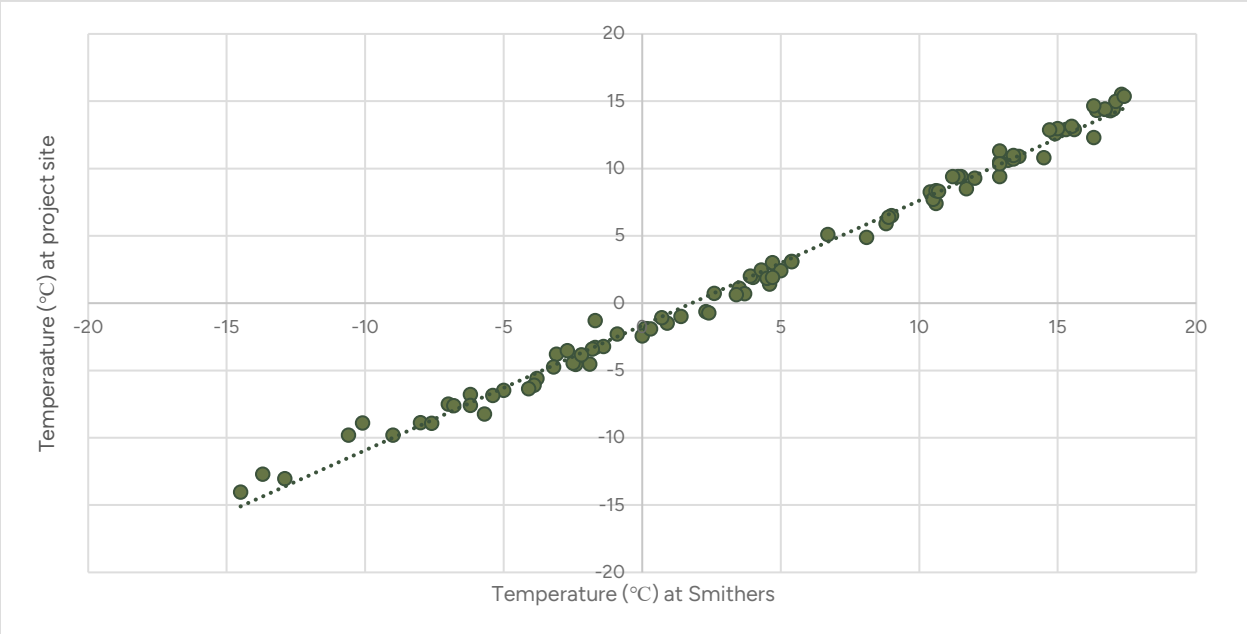
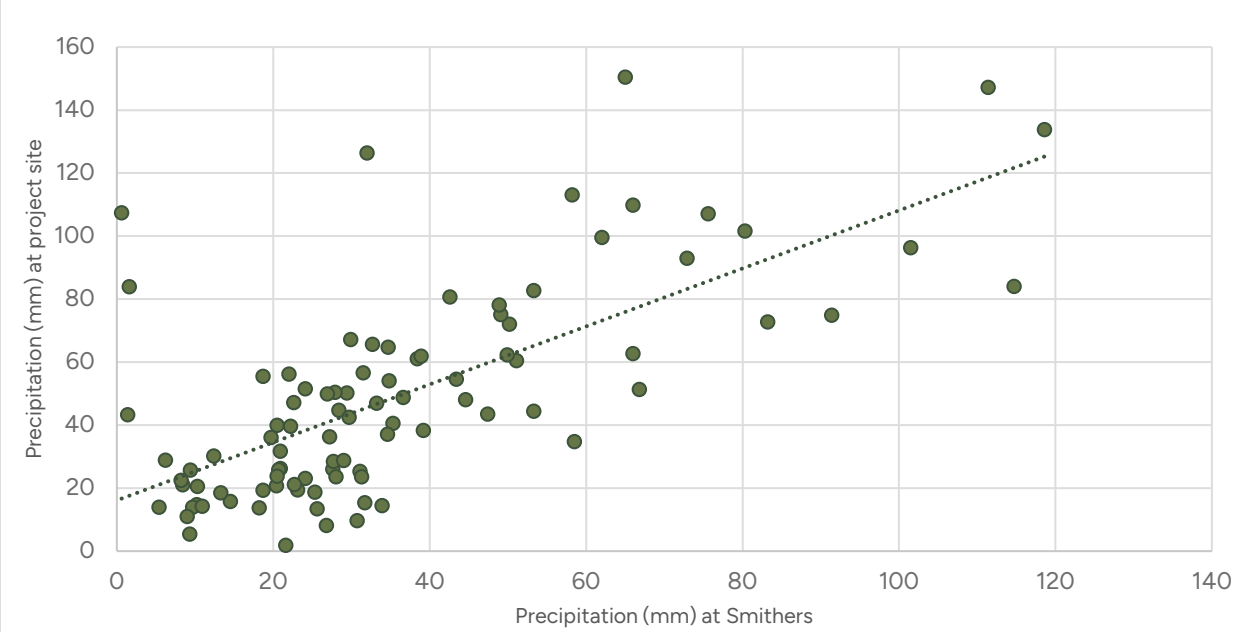


Figure 22: Monthly correlation in precipitation between the Smithers meteorological station (520 masl) and the project site station (993 masl) for the 2017–2024 period.



The calculated lapse rate for temperature was -0.45°C per 100 m of increasing elevation and 0.05 mm per 100 meters of increasing elevation for precipitation. These lapse rates were applied to adjust the precipitation and temperature data from the 993 masl station to the median elevation of each HRU. The calculated lapse rates were used to adjust the climate forcing data separately or each HRU, based on their median elevations.

4.2.3 Model Calibration and Validation

Although the original model was developed for ungauged catchments without sufficient calibration data, continuous baseline discharge records were available for Four Creek. As a result, the model was adapted to incorporate observed discharge data, allowing for parameter calibration and improved representation of watershed conditions. The parameters interception loss, degree-day factor, soil moisture capacity, and surplus runoff factor were modified from their standard values to better reflect site-specific conditions, as summarized in Table 22.

Table 22: Parameters used in the Four Creek water balance model.

Parameter	Recommended Value from Moore et al. 2012.	Calibrated Value for Four Creek
initial Soil Moisture (mm)	From spin up	150
Direct Runoff factor (%)	5	5
$T_{(rain)}$ threshold (℃)	3	3
$T_{(snow)}$ threshold (℃)	-5	-5
Interception Loss (%)	25	20
Degree day factor (mm/℃/day)	2	0.75
Soil Moisture Capacity (mm)	150	150
Surplus Runoff factor (%)	50	32
Precipitation factor (%)	n/a	80

The timeseries of continuous discharge data that was collected at the Hydro-Four hydrometric station near the mouth of Four Creek was used to calibrate the simulated streamflow generated by the model. These hydrometric data have been made available by ERM (2025), who are responsible for the hydrometric monitoring program. SLR takes no responsibility for the accuracy of these data and understands these data have been appropriately reviewed and quality checked in accordance with relevant standards.

Data from this location includes observed hydrometric records, which are primarily collected during winter months, as well as estimated data produced by a statistical analysis during winter months, when field data collection is not possible due to field conditions. Details regarding the data availability for model calibration are summarised in Table 23.



Table 23: Availability of streamflow data used for mode calibration from the Hydro-Four station (ERM 2025).

	2020	2021	2022	2023	2024
January	Estimated[1]	No data	Estimated[1]	No data	Estimated[1]
February	Estimated[1]	No data	Estimated[1]	No data	Estimated[1]
March	Estimated[1]	No data	Estimated[1]	No data	Estimated[1]
April	Estimated[1]	No data	Estimated[1] /Observations	No data	Estimated[1] /Observations
May	Observations	No data	Observations	No data	Estimated[1] /Observations
June	Observations	No data	Observations	No data	Estimated[1] /Observations
July	Observations	No data	Observations	No data	Estimated[1]
August	Observations	No data	Observations	No data	Estimated[1] /Observations
September	Observations	No data	Observations	No data	Estimated[1] /Observations
October	Observations	No data	Observations/Estimated	No data	Estimated[1] /Observations
November	Estimated[1]	No data	Estimated	No data	Observations
December	Estimated[1]	No data	Estimated	No data	Observations

[1] The estimated discharge provided by ERM were reportedly modeled using either linear regression between measurements or by estimating linear or logarithmic growth or decay between measurements.

The water balance model used in this study produces monthly average streamflow conditions (Moore et al. 2012). Due to the limited available observed from Four Creek, the calibration record relies on monthly values that were only developed using anywhere from one to three years of data. To assess how representative the available streamflow data are of longer-term trends, the short-term record at Four Creek was compared to the longer-term hydrometric record from Goathorn Creek, which is collected by the WSC. This comparison helped evaluate whether the calibration period is broadly representative of long-term averages. Since Four Creek is located within the Goathorn Creek watershed, it is assumed that climatic variability patterns observed in Goathorn Creek would also be broadly reflected in Four Creek. Figure 23 and Table 24 present Goathorn Creek's average monthly discharge per month for the years 2020 to 2024 against a climate normal period of 1994 to 2024.

The average discharge for the 2020 to 2024 period from Goathorn Creek is generally lower compared to the long-term average in all months except November and December, where the 2020-2024 observations exceed the long-term average. The most significant variation in discharge between the 2020-2024 average and the long-term average occurs in December, where the mean daily discharge for the 2020-2024 period is approximately 48% higher than the long-term average. In contrast, June shows a substantial difference, with the 2020-2024 average daily discharge being approximately 45% lower than the long-term average. Overall, the average daily discharge for the 2020-2024 period is lower than the long-term average for every month except November and December.



Figure 23: Goathorn Creek average monthly discharge (m^3/s) for each year from 2020 to 2024, the average daily discharge for the period 2020 to 2024, and the average daily discharge from 1994 to 2024

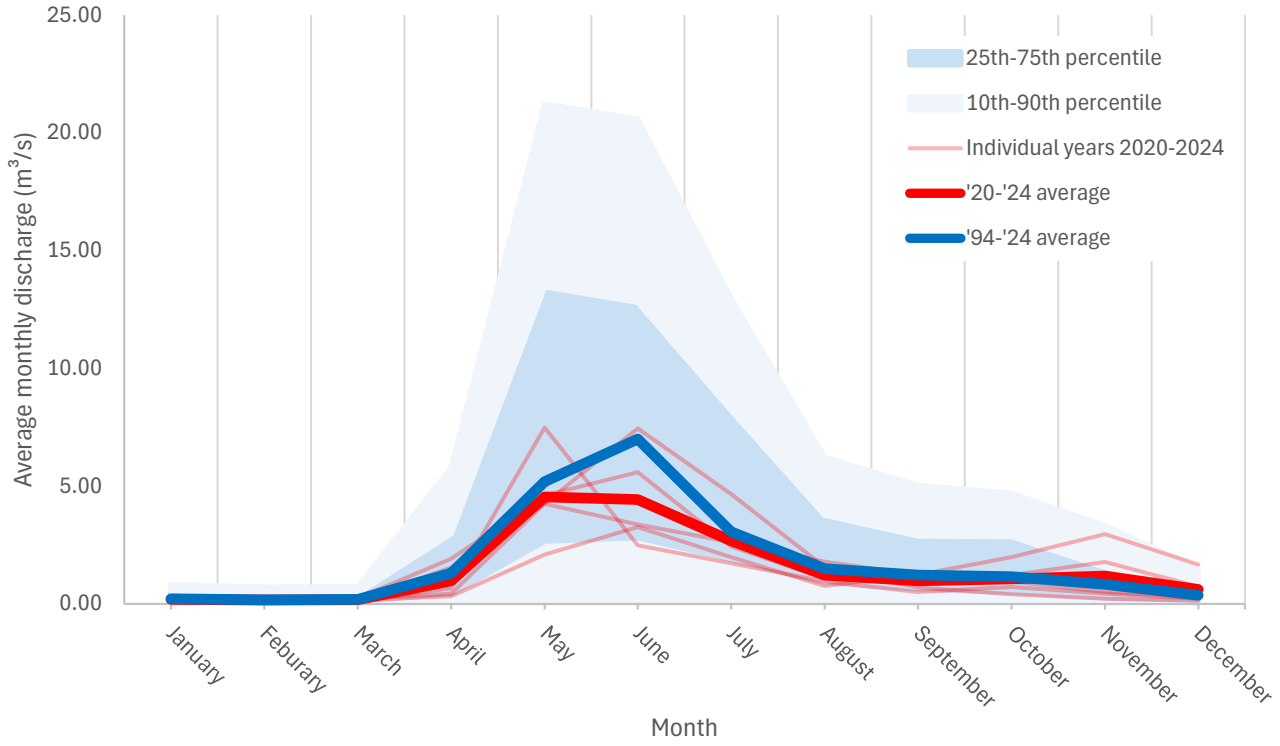


Table 24: Mean monthly discharge (m^3/s) of Goathorn Creek

	Goathorn Creek mean monthly discharge (m^3/s)							% variation of '20-'24 mean from '94-'24 mean
	2020	2021	2022	2023	2024	2020-2024 Average	1994-2024 Average	
January	0.25	0.26	0.19	0.12	0.14	0.19	0.22	-12.2
February	0.16	0.18	0.24	0.11	0.12	0.16	0.17	-5.2
March	0.14	0.25	0.20	0.13	0.15	0.17	0.18	-5.2
April	1.55	1.91	0.44	0.67	0.33	0.98	1.30	-28.5
May	4.25	4.61	4.26	7.49	2.10	4.54	5.20	-13.5
June	3.37	5.59	7.45	2.49	3.26	4.43	7.00	-44.9
July	2.62	2.43	4.66	1.73	1.98	2.68	3.05	-12.9
August	1.79	1.07	1.56	0.95	0.76	1.23	1.50	-20.2
September	1.22	1.22	0.70	0.50	1.23	0.97	1.23	-23.0
October	1.23	0.95	0.41	0.72	1.99	1.06	1.16	-9.3
November	1.78	0.51	0.22	0.44	2.96	1.18	0.82	35.6
December	0.73	0.27	0.14	0.22	1.67	0.61	0.37	47.5

A visual comparison of hydrographs (Figure 24) and three goodness of fit metrics were used to test the calibration and performance of the model:

- Nash-Sutcliffe Efficiency (NSE) is widely used for calibration and evaluation of hydrological models with observed data (Moriasi et al. 2007, Hoshin et al. 2009). NSE values range from -∞ to 1, with 1 indicating a perfect match between observed and predicted data. Generally, an NSE value above 0.8 indicates that the model is very well calibrated (Moriasi et al. 2007).
- Percent Bias (PBIAS) measures the average tendency of the simulated values to be larger or smaller than their observed counterparts. It is calculated as the percentage difference between observed and predicted values. A PBIAS value of 0 indicates an unbiased model, while positive or negative values reveal overestimation or underestimation, respectively. For hydrological models, PBIAS values within ±25% are typically considered acceptable (Moriasi et al. 2007)
- Normalized Root Mean Square Error (NRMSE) assesses the model's accuracy by calculating the square root of the average squared differences between observed and predicted values, normalized by the range or mean of the observed data. Lower NRMSE values indicate better model performance. An NRMSE value within 10-20% is generally considered acceptable for model calibration (BC MOE 2012.; Singh et al. 2004).

4.2.4 Predictive Scenarios

Following calibration, the model was then modified to estimate the anticipated streamflow under different phases of mine life by changing the HRUs that contribute runoff to Four Creek. These results were then compared to streamflow generated under baseline conditions to evaluate the expected magnitude of change that will occur due to mine processes. The water management plan developed by SRK Consulting (2022c) provides an overview of the different phases that were assessed and outlines areas within the Four Creek watershed that are associated with each phase of the project, which were used to inform the hydrological modelling scenarios.

- **Operations:** During the operational phase, projected to be in place by the end of year 10, SRK (2022c) identifies several areas within and near the Four Creek watershed where surface water will be actively managed. Water management infrastructure associated with the East Management Pond and the southern pit excavation area in the will divert water away from Four Creek. These were simulated by removing HRU 4 and HRU 5. During this phase, there is also a non-developed area located upslope of the East Management Pond that will divert water into Four Creek via Channel 02. This was simulated by adding HRU 7 and HRU 8 to the watershed. This scenario also assumes that no water will be intercepted by the road or pipeline accessing the southern pit, and that no flow will be diverted out of the watershed via ditches.
- **Closure and Post-Closure:** For the closure and post-closure phase, SRK (2022c) outlines that drainage infrastructure will remain in place with some modifications as the site transitions from active operations to closure. Additional pit areas have been constructed between the end of Operation End of Year 10 phase and the post-closure phase which will redirect additional flow outside of the Four Creek watershed. This was simulated by removing HRU 8. HRU 4 and HRU 5 are still removed from the watershed, and HRU 7 remains included in the watershed. Flow mitigation features designed to limit excess contributions to Four Creek during peak events are expected to remain functional post-closure.

- **Low Flows:** The impacts under low flow scenarios are particularly important as these are periods when limited access to physical fish habitat can negatively affect fish populations. The model was also modified to evaluate the impacts during low flow years. To do this, the ratio of 10th percentile annual precipitation to mean annual precipitation was applied to the average monthly precipitation values to generate a new set of low flow precipitation inputs. These new input parameters were used to evaluate the relative change in streamflow that would be caused under the operations and closure/post-closure phases during low flow years.

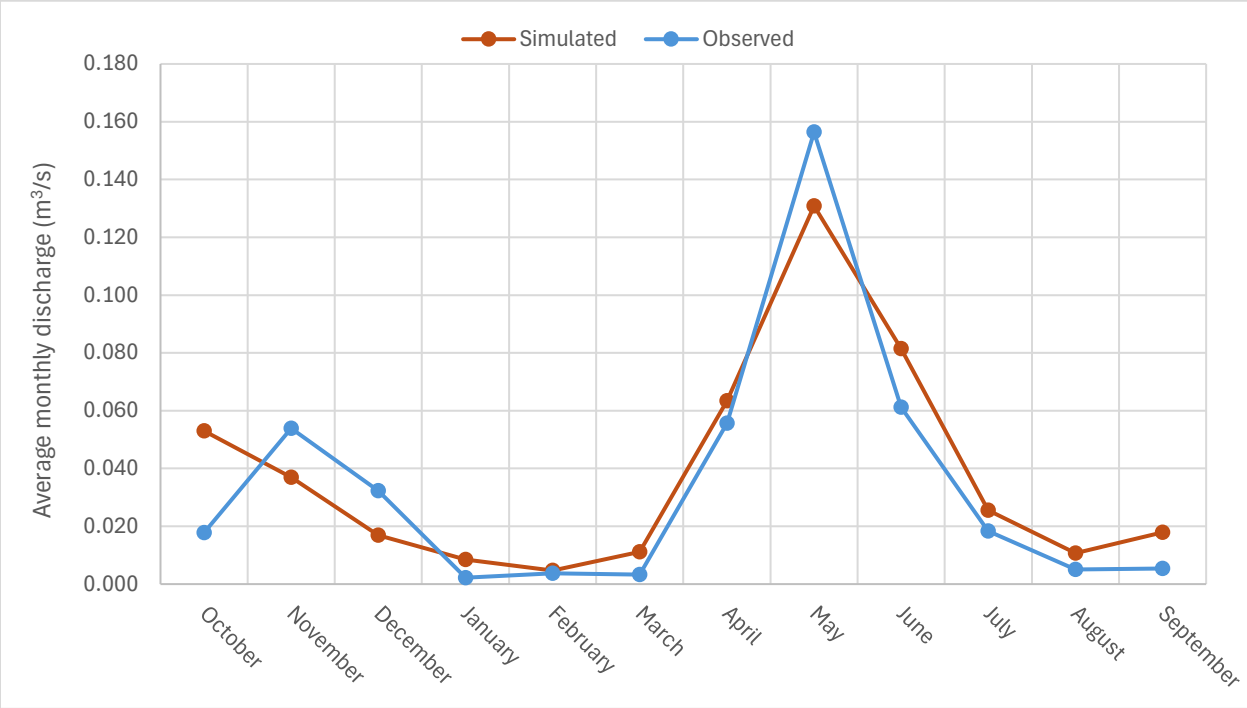
The modeled scenarios assume that Channel C02 is fully functional, captures all runoff and interflow generated from its upslope catchment, and is constructed in the location delineated by SRK (2022c). These scenarios also assume that the channel alignment will not be altered. The design performance of this channel is not considered by SLR in this analysis.

4.3 Results

4.3.1 Model Calibration

The calibrated Four Creek model achieved an NSE value of 0.851, a PBIAS value of -11.0%, and an NRMSE value of 10.6%. These metrics indicate that the model fits well but moderately overestimates discharge compared to the observed ERM data. Specifically, the model underpredicts streamflow in November and December and overpredicts streamflow from June through September compared to the observed values. These discrepancies reflect the bias observed in the 2020-2024 subset of data from Goathorn Creek that was used for calibration (Table 24), which suggests that the model likely better predicts long-term averages than the goodness of fit metrics suggest.

Figure 24: Comparison of the Four Creek watershed balance model (simulated) with observed and modelled data provided by ERM (2025) for the period 2020-2024



4.3.2 Predictive Scenarios

4.3.2.1 Operations Phase

As shown in Figure 25 and Table 25, the planned water management measures during the operation and post-closure phases of the mine would result in an increase to average daily discharge in Four Creek across all months. Increased streamflow under this scenario is due to the increase in contributing area (represented by HRU 7 and HRU 8) to the Four Creek watershed.

Figure 25: Average daily discharge in Four Creek accounting for all diversions out of and into the watershed during the operations phase at the end of year 10, compared to baseline conditions

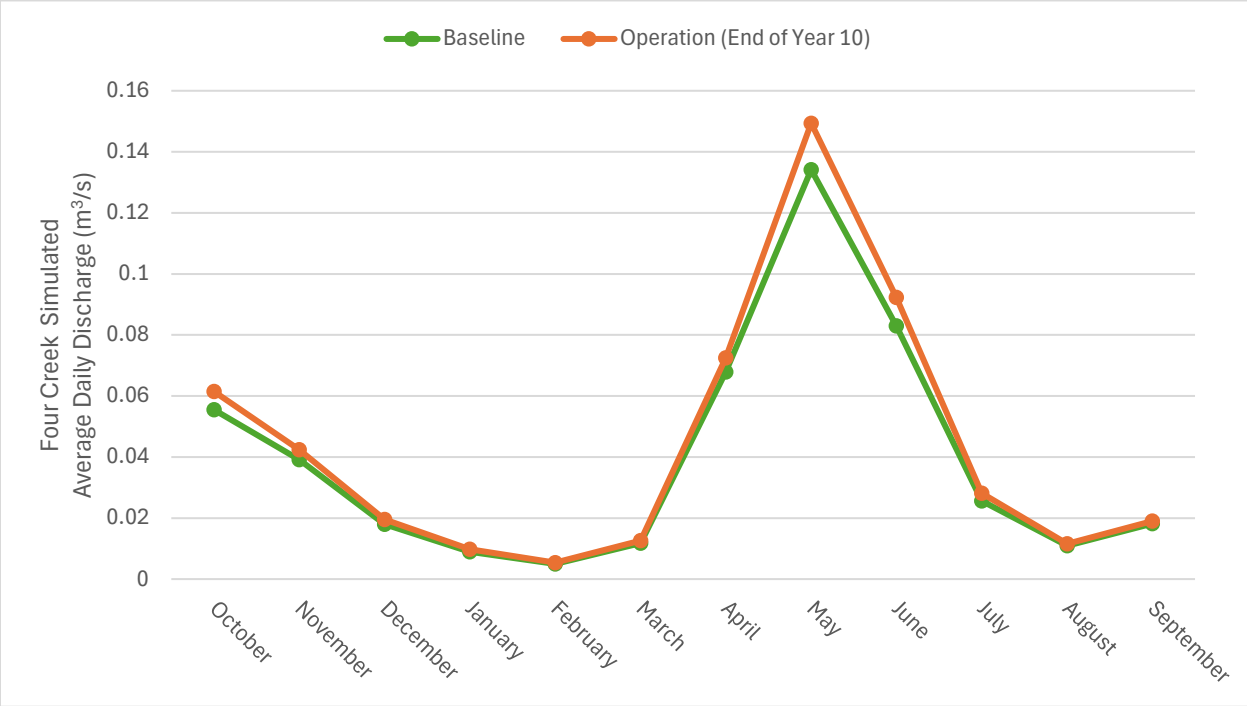


Table 25: Modelled average daily discharge (m^3/s) in Four Creek during baseline conditions and during operation and post-closure mine phases.

	Average Daily Discharge (m^3/s)		
	Baseline	**Operation**	**% Difference from Baseline**
October	0.055	0.061	10%
November	0.039	0.042	8%
December	0.018	0.020	8%
January	0.009	0.010	8%
February	0.005	0.005	8%
March	0.012	0.013	7%
April	0.068	0.073	7%
May	0.134	0.149	11%
June	0.083	0.092	11%
July	0.026	0.028	9%
August	0.011	0.012	5%
September	0.018	0.019	4%
Mean Annual Discharge	0.040	0.044	9%

4.3.2.2 Closure/Post-Closure Phase

Figure 26 illustrates the combined effect of all diversions into and out of the watershed at the closure and post-closure phase. The exclusions of HRU 4 and HRU 5 remain unchanged from the end-of year 10 operation phase. Once the pit in HRU 8 is constructed, sometime after year 10 operation and closure, water will be diverted away from Four Creek as per the SRK (2022c) water management strategy. Table 26 the average monthly discharge of the closure / post-closure phase within Four Creek and the percentage difference between the overall changes to the water balance compared to the baseline.

Figure 26: Average daily discharge in Four Creek accounting for all diversions out of and into the watershed during the closure and post-closure phases compared to baseline conditions

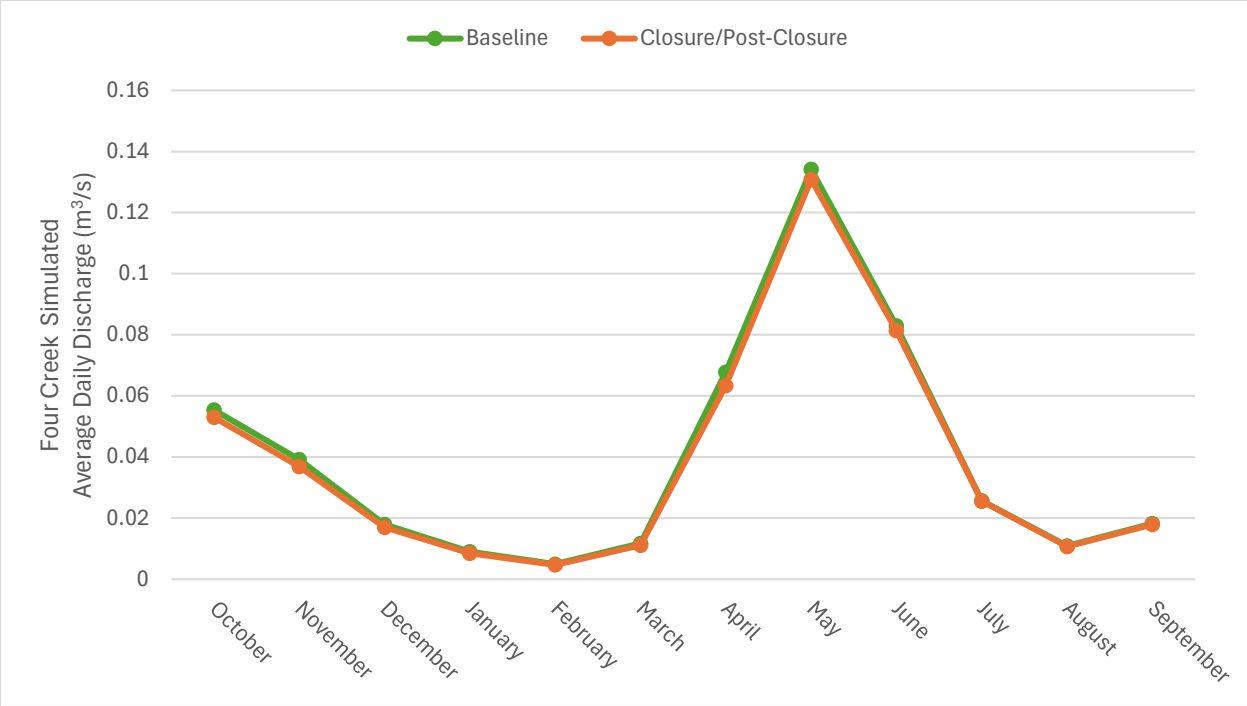


Table 26: Modelled average daily discharge (m^3/s) in Four Creek during baseline conditions and closure and post-closure mine phases

	Average Daily Discharge (m^3/s)		
	Baseline	**Closure / Post-closure**	**% Difference from Baseline**
October	0.055	0.053	-5%
November	0.039	0.037	-6%
December	0.018	0.017	-6%
January	0.009	0.008	-6%
February	0.005	0.005	-6%
March	0.012	0.011	-6%
April	0.068	0.063	-7%
May	0.134	0.131	-2%
June	0.083	0.081	-2%
July	0.026	0.026	0%
August	0.011	0.011	-2%
September	0.018	0.018	-2%
Mean Annual Discharge	0.040	0.039	-4%

Once the surface water diversion mechanisms are in place for the southern excavation pit, this will result in an overall decrease to discharge in Four Creek for all months except July and September.

4.3.2.3 Low Flow Conditions

The relative change in streamflow under low flow and the average flow conditions for both Operations and Closure/Post-Closure phases are provided in Table 27. The results show no significant difference in the projected relative change in streamflow between October and May. However, from June to September, streamflow is expected to be slightly higher during the Operations phase and slightly lower during the Closure and Post-Closure phases. These variations are minor: up to a 6% increase during Operations and up to a 4% decrease during Closure/Post-Closure.

Table 27: Percent difference in average daily discharge between baseline and mine development phases under varying flow conditions

	Operations Phase		Closure/Post-Closure Phase	
	Average flows	**Low flows**	**Average flows**	**Low flows**
October	10%	10%	-5%	-5%
November	8%	8%	-6%	-6%
December	8%	8%	-6%	-6%
January	8%	8%	-6%	-6%
February	8%	8%	-6%	-6%
March	7%	8%	-6%	-6%
April	7%	7%	-7%	-7%
May	11%	11%	-2%	-2%
June	11%	12%	-2%	0%
July	9%	10%	0%	-4%
August	5%	10%	-2%	-4%
September	4%	10%	-2%	-4%
Mean Annual Discharge	9%	10%	-4%	-4%

5.0 Discussion

The surficial geology of Four Creek watershed suggests that perched groundwater conditions are likely, due to the presence of fine till in the shallow overburden which acts as a low permeability layer inhibiting water from percolating down to the main deep groundwater table. The results of the groundwater-surface water interaction detailed herein support this conclusion for several reasons:

- Vertical hydraulic gradients consistently show negative values, indicating that Four Creek is a losing stream, where water from the creek seeps outwards into the shallow subsurface.
- Conductivity measurements along Four Creek show minimal variation except for a few locations. These conductivity measurements suggest contributions to streamflow along Four Creek come from direct precipitation and recently fallen precipitation that arrives at the creek as interflow along the creek's length.
- Discharge measurements taken at multiple points along Four Creek show no measurable increase in streamflow under baseflow conditions that would suggest the presence of groundwater contributions. Additionally, water level measurements obtained from mini-piezometers installed adjacent to the stream channel indicate that the vertical hydraulic gradient is predominantly negative at all monitoring locations. A negative vertical gradient suggests a downward movement of water from the stream toward the underlying shallow groundwater. These consistent patterns across Four Creek suggest that the stream is functioning as a losing stream along its entire reach, and that the findings of the model can be extended to the entire length of Four Creek, with the exception of the impacts of proposed water conveyance infrastructure, such as ditches.

The Groundwater Numerical Model (SRK 2022a) was developed to understand regional groundwater patterns. Its predictions for Four Creek assume that Four Creek surface flow was connected to the deep groundwater aquifer throughout its entire length, and that there was a hydraulic connection through a single hydrostratigraphic unit connected to the proposed pit. This model was not intended to try and represent complex surface water and groundwater interactions over small stream sections in a perched system, such as Four Creek.

Given the habitat that Four Creek provides to resident Dolly Varden, a more detailed water balance model was developed for Four Creek, specifically, to estimate streamflow changes under different mine-life scenarios. The model calibration and validation demonstrate good alignment with observed data, although there are several limitations to consider.

- Although the model structure is primarily designed to simulate average hydrological conditions (Moore et al. 2012), it was also modified to estimate low flows during a 10th percentile dry year. These results indicate no difference in the predicted relative change in streamflow from October to May. From June to September, proportionally higher streamflow is expected under the Operations phase, and proportionally lower streamflow is expected under the Closer and Post-Closure phases. The magnitude of these changes are small (increases of up to 6% under Operations, and decreases of up to 4% during Closure/Post-Closure) and are expected to be caused by changes in the amount of water stored within subsurface soils.
- The model is only as reliable as the input data. Four Creek streamflow data, used for calibration, limited in duration and includes estimated values during winter months when direct observations were unavailable.



- To produce realistic simulations of future scenarios, it is important that parameter values represent physical reality. Where possible, calibration was constrained based on site characteristics. Although there are some discrepancies, the selected values generally align with those reported by Moore et al. (2012) support their suitability for application in the predictive scenarios.
- The model predicts changes over a relatively short timeframe, corresponding with the short duration of the projected mine life, and therefore does not incorporate the influence of long-term climate change.
- The model assumes that water management infrastructure captures all runoff and interflow but does not account for potential changes in the timing or intensity of runoff that may result from land disturbance or future modifications to site infrastructure.

The predictive analysis suggests that monthly streamflow is project to increase anywhere from 4% to 11% from baseline conditions under the operations phase. These changes are primarily due to the influence of diversion Channel C02, which capture water from adjacent hillslopes and increase the contributing area of Four Creek. This differs from the Groundwater Numerical Model, which predicts a decrease of -14.3% compared to baseline conditions (SRK 2022a). During the closure and post-closure phases, the predicted change in streamflow ranges from a 0% to -7% difference relative to baseline conditions. This also differs from the Groundwater Numerical Model, which predicts a decrease of –10.7% compared to baseline conditions (SRK 2022a).



6.0 Closure

We trust that this report on the Four Creek Watershed meets your needs in support of the Environmental Assessment process and addressing comments from involved stakeholders. If you have any further questions, please contact the undersigned.

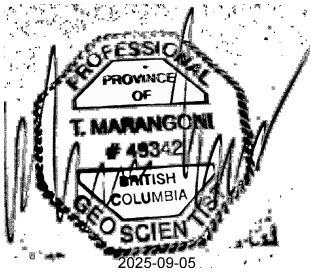
Regards,

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Appendix A Mini Piezometers MP5S/D

Four Creek Watershed

Groundwater Surface Water Interaction Investigation
and Water Balance Model Development

Telkwa Coal Limited

SLR Project No.: 201.V24219.00000

September 5, 2025

Appendix A Mini Piezometers MP5S/D

A.1 July Field Program Installation

The field program to install two piezometers as nested pair (shallow/deep) at the location of water quality station WQS20 was undertaken in July of 2024. This new monitoring location was named Site 5, with the denominations Site 5S and Site 5D referring to the shallow and deep piezometers respectively (Table A.1).

The deep MP (Site 5D) was constructed out of 1.52 m (2 x 2.5 ft) of galvanized steel riser, followed by 0.76 m (2 ft) piece of stainless-steel riser then the 0.3 m (1 ft) stainless steel MP tip. It was installed 1.88 m below ground surface. The shallow MP (Site 5S) was constructed out of 0.76 m galvanized steel riser, followed by 0.76 m stainless steel riser and then the 0.3 m (1 ft) stainless steel MP tip. It was installed 0.90 m below ground surface.

The purpose of this installation is to collect information on the shallow groundwater levels and the surface water levels in the creek. Manual surface and shallow groundwater levels were measured after the MPs were installed and had time to equilibrate. The MPs were equipped with an M10 Solinst Levelogger® 5 pressure transducer to record continuous groundwater levels every hour.

Table A.1: Mini-Piezometer Installation Details

Nearest Water Quality Station	Mini Piezometer ID	Northing (m)	Easting (m)	Elevation (masl)	Total Length (m)	Stick Up (m)	Screen Length (m)
WQS20	Site 5 S	6051999	0619301	831	1.52	0.615	0.3
WQS20	Site 5 D				2.63	0.75	0.3

A.1.1 Site 5 Mini Piezometer Installation Photographic Log

Photo 1: Site 5 D Installation Field staff pictured: Pryanka Rai (July 4, 2024)	**Photo 2:** Site 5 S Installation Field staff pictured: Pryanka Rai (July 4, 2024)
	

Photo 3: Site 5 S/D installation completed (July 4, 2024)



Appendix B Summary of 2024 Water Quality Results

Four Creek Watershed

Groundwater Surface Water Interaction Investigation
and Water Balance Model Development

Telkwa Coal Limited

SLR Project No.: 201.V24219.00000

September 5, 2025

		Physical Tests										Anions and Nutrients							Anions and Nutrients												Cyanides	Phenols	Organic / Inorganic Carbon (Water)					
Client Sample ID		Colour, True	Conductivity	Hardness Total (as CaCO3)	Hardness Dissolved (as CaCO3)	pH Field	pH Lab	Total Suspended Solids	TDS (Calculated)	Turbidity	Orthophosphate (P)	Phosphorus (as P)-Total	Phosphorus (as P)-Dissolved	Acidity (as CaCO3) pH 4.5	Acidity (as CaCO3) pH 8	Alkalinity, Total (as CaCO3)	Alkalinity, Phenolphthalein (as CaCO3)	Alkalinity, Bicarbonate (as CaCO3)	Alkalinity, Carbonate (as CaCO3)	Alkalinity, Hydroxide (as CaCO3)	Ammonia, Total (as N)	Bromide (Br)	Chloride (Cl)	Fluoride (F)	Nitrate (as N)	Nitrite (as N)	Total Kjeldahl Nitrogen	Total Nitrogen	Sulfate (SO4)	Cyanide, Total	Phenols, Total	Total Organic Carbon	Dissolved Organic Carbon	Aluminum (Al)-Total	Antimony (Sb)-Total	Arsenic (As)-Total	Barium (Ba)-Total
	Units	CU	uS/cm	mg/L	mg/L	pH	pH	mg/L	mg/L	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	LDL	5.0	2.0	0.125	0.125	0.1	0.1	2.0	10.0	0.1		0.005	0.005	2.0	2.0	1.0	1.0	1.0	1.0	1.0	0.0500	0.1000	0.10	0.100	0.0050	0.0050	0.050	0.050	1.00	0.0005	0.0015	0.50	0.50	0.0030	0.00005	0.00010	0.00100
	BC CSR (Aquatic Life (AW))																				pH Dependent (1.31 @pH>8.5, 3.7 @pH8-<8.5, 11.3 @pH7.5-<8, 18.5 @pH 7-7.5, 18.4 @pH <7)		1500	Hardness Dependent (2 @ H<50, 3 @ H>50)	400	CI Dependent (0.2 @ CI<2, 0.4 @CI2-<4), 0.6 @CI4-<6, 0.8 @CI 6-<8, 1 @CI 8-10, 2 @CI > 10)			Hardness Dependent (1280@H<30, 2180 @H 31-75, 3090@H76-180, 4290@H>180)		2.0000						
T95R-64	Summer - July 2024	<2.0	1300	48.9	52.3	7.28	8.06	1.6	790.0	0.69	<0.0030	0.012	-	<1.0	<1.0	720	<1.0	880	<1.0	<1.0	0.3600	-	1.1	1.4	<0.020	<0.0050	0.446	0.446	<1.0	<0.00050	<0.0015	<0.50	0.68	0.0046	<0.0005	<0.0001	0.397
	Fall - September 20224	2.1	1300	51.2	55.3	7.21	8.26	2	780	2.4	<0.0030	0.0076	-	<1.0	<1.0	740	<1	910	<1.0	<1.0	0.37	-	1.2	1.6	<0.020	<0.005	0.47	0.472	<1.0	<0.00050	<0.0015	<0.50	<0.50	0.0249	0.0016	<0.0002	0.368
T19-18S	Summer - July 2024	15.8	-	216	219	8.13	8.2	9.2	600.0	9.80	0.0630	1.3	-	<1.0	<1.0	240	<1.0	290	<1.0	<1.0	-	-	13	0.18	<0.020	<0.0050	3.59	3.59	220	-	0.0043	41	14	0.158	<0.0025	0.00355	0.0787
	Fall - September 20224	4.5	940	552	228	7.44	8.05	5100	610.0	3700.00	<0.0030	1.6	-	<1.0	<1.0	230	<1.0	280	<1.0	<1.0	0.4400	-	5.2	0.17	<0.020	<0.0050	1.5	1.49	240	<0.00050	<0.0015	<50	12	71.9	<0.005	0.0332	1.25
T0B96-02-06	Summer - July 2024	<2.0	610	274	309	7.28	8.03	25	340.0	380.00	0.0042	0.0056	0.0056	<1.0	3.3	320	<1.0	390	<1.0	<1.0	<0.015	-	<1.0	0.086	<0.020	<0.0050	0.063	0.063	13	<0.00050	<0.0015	0.82	1	0.326	<0.0005	0.00021	0.119
	Fall - September 20224	<2.0	610	349	287		8.01	96	340.0	35.00	<0.0030	0.0058	-	<1.0	1.8	330	<1.0	400	<1.0	<1.0	<0.015	-	<1.0	0.096	<0.020	<0.0050	0.091	0.091	18	0.00096	<0.0015	0.79	1.9	5.29	0.00085	0.00261	0.411
T0B96-01-05	Summer - July 2024	16.9	690	312	357	6.81	7.91	57	420.0	31.00	0.0077	0.065	-	<1.0	<1.0	340	<1.0	410	<1.0	<1.0	-	-	<1.0	0.07	<0.020	<0.0050	0.481	0.481	41	-	<0.0015	90	-	0.744	0.00053	0.00096	0.174
T95R-40	Summer - July 2024	<2.0	2900	101	112	7.22	7.96	17	1800.0	0.63	0.0074	0.087	-	<1.0	2.1	1700	-	1700	<1.0	<1.0	0.6000	-	12	0.49	<0.020	<0.0050	-	0.926	10	<0.00050	<0.0015	0.95	0.8	0.075	<0.005	<0.001	4.82
	Fall - September 20224	<2.0	2800	96.4	98.2	-	7.92	150	1700.0	32.00	<0.0030	0.072	-	<1.0	4.5	1600	<1.0	2000	<1.0	<1.0	0.6400	-	10	0.62	<0.020	<0.0050	0.96	0.959	26	<0.00050	<0.0015	0.96	<0.50	1.2	<0.0025	0.00083	3.23
T18-01D	Summer - July 2024	3.4	1200	11.4	9.34	8.42	8.44	42	790.0	4.90	0.0043	0.08	-	<1.0	<1.0	610	21	690	25	<1.0	0.3700	-	15	2.1	<0.020	0.0062	1.49	1.49	25	<0.00050	<0.0015	2.6	2.3	1.24	0.00093	0.00849	0.12
	Fall - September 20224	18.5	1200	11.1	11.4	-	8.51	8.8	780.0	-	0.0050	0.046	-	<1.0	<1.0	640	34	700	41	<1.0	0.3900	-	15	2.4	<0.020	<0.0050	0.58	0.577	25	<0.00050	<0.0015	3.5	3.1	0.747	<0.001	0.00822	0.117
Site 2S	Summer - July 2024	42.9	160	70.2	72.6	7.34	7.7	2.8	110.0	5.20	<0.0030	0.0059	-	<1.0	<1.0	79	<1.0	97	<1.0	<1.0	<0.015	-	<1.0	<0.050	0.028	<0.0050	0.294	0.322	<1.0	0.00053	<0.0015	11	11	0.0622	<0.0005	0.00049	0.0617
	Fall - September 20224	13.8	310	137	145	-	8.15	67	170.0	5.70	<0.0030	0.012	-	<1.0	<1.0	170	<1.0	200	<1.0	<1.0	<0.015	-	<1.0	<0.050	0.047	<0.0050	0.18	0.227	<1.0	0.00052	<0.0015	3.9	3.9	0.0707	<0.0005	0.00054	0.112
Site 2SW	Summer - July 2024	43.1	160	69.9	74.1	7.77	7.81	110.0	110.0	0.34	0.0079	0.0046	-	<1.0	<1.0	80	<1.0	97	<1.0	<1.0	<0.015	-	<1.0	<0.050	0.049	<0.0050	0.257	0.306	<1.0	0.00051	<0.0015	11	11	0.0382	<0.0005	0.00048	0.0614
	Fall - September 20224	13.7	310	138	151	-	8.22	1.2	170.0	0.26	<0.0030	<0.0030	-	<1.0	<1.0	170	<1.0	200	<1.0	<1.0	<0.015	-	<1.0	<0.050	0.036	<0.0050	0.21	0.241	<1.0	<0.00050	<0.0015	3.8	3.7	0.0169	<0.0005	0.0005	0.109
Site 2D	Fall - September 20224	-	230	90	-	-	7.55	-	-	35.00	-	0.15	-	-	-	120	<1.0	140	<1.0	<1.0	0.3200	-	2.3	0.066	0.023	0.01	-	-	<1.0	-	-	-	-	0.562	0.00216	0.0025	0.155
Site 4 Upper S	Summer - July 2024	31.4	190	90.6	93.5	7.65	7.94	120.0	120.0	6.20	0.0066	0.0069	-	<1.0	<1.0	100	<1.0	120	<1.0	<1.0	0.0230	-	<1.0	<0.050	<0.020	<0.0050	0.257	0.257	<1.0	<0.00050	<0.0015	7.6	7.5	0.118	<0.0005	0.00066	0.0896
	Fall - September 20224	8.2	340	160	167	-	8.18	5.6	180.0	0.98	<0.0030	0.0034	-	<1.0	<1.0	180	<1.0	220	<1.0	<1.0	<0.015	-	<1.0	<0.050	<0.020	<0.0050	0.14	0.143	<1.0	<0.00050	<0.0015	2.2	2.3	0.0286	<0.0005	0.0007	0.13
Site 4 Upper SW	Summer - July 2024	32.4	190	85.5	89.1	7.94	7.92	120.0	120.0	1.60	0.0056	0.0048	-	<1.0	<1.0	99	<1.0	120	<1.0	<1.0	<0.015	-	<1.0	<0.050	<0.020	<0.0050	0.262	0.262	<1.0	<0.00050	<0.0015	7.9	8	0.0419	<0.0005	0.00061	0.0832
	Fall - September 20224	9.2	330	153	168	-	8.23	<1.0	170.0	0.39	<0.0030	<0.0030	-	<1.0	<1.0	180	<1.0	220	<1.0	<1.0	<0.015	-	<1.0	<0.050	<0.020	<0.0050	0.14	0.141	<1.0	<0.00050	<0.0015	2.4	2.2	0.0191	<0.0005	0.00064	0.125
Site 4 Upper D	Summer - July 2024	16.8	-	84.2	89.3	-	7.9	160.0	160.0	11.00	<0.0030	0.1	-	<1.0	<1.0	100	<1.0	130	<1.0	<1.0	0.1900	-	<1.0	<0.050	<0.020	<0.0050	1.16	1.16	<1.0	-	-	35	-	0.575	0.00142	0.00055	0.0917
	Fall - September 20224	-	270	-	122	-	8	-	-	3900.00	-	0.0035	-	-	-	150	<1.0	180	<1.0	<1.0	<0.015	-	<1.0	<0.050	<0.20	<0.050	-	-	<1.0	-	-	-	-	-	-	-	-
Site 5S	Summer - July 2024	45.2	160	74.9	80.3	7.21	7.55	130.0	130.0	5.70	0.0044	0.016	-	<1.0	<1.0	84	<1.0	100	<1.0	<1.0	0.0270	-	<1.0	<0.050	<0.020	<0.0050	0.43	0.43	<1.0	0.00065	<0.0015	12	12	0.15	<0.0005	0.00118	0.0801
	Fall - September 20224	32.5	280	127	138	-	7.9	10.0	150.0	4.00	0.0045	0.0086	-	<1.0	<1.0	150	<1.0	180	<1.0	<1.0	0.0650	-	<1.0	<0.050	<0.020	<0.0050	0.33	0.327	<1.0	<0.00050	<0.0015	5.7	5.9	0.0574	<0.0005	0.00218	0.113
Site 5D	Fall - September 20224	-	160	239	-	-	10.1	-	-	>4000	-	0.052	-	-	-	88	41	7.9	49	<1.0	0.2300	-	<1.0	0.14	<0.020	<0.0050	-	-	<1.0	-	-	-	-	28.1	<0.001	0.0185	0.754
Site 5 SW	Summer - July 2024	38.8	160	71.6	75.9	7.37	7.83	110.0	110.0	0.32	<0.0030	0.0037	-	<1.0	<1.0	82	<1.0	100	<1.0	<1.0	<0.015	-	<1.0	<0.050	<0.020	<0.0050	0.311	0.311	<1.0	0.00052	<0.0015	10	11	0.0323	<0.0005	0.00045	0.0645
	Fall - September 20224	14.8	290	131	138	-	8.16	<1.0	160.0	0.31	<0.0030	<0.0030	-	<1.0	<1.0	150	<1.0	190	<1.0	<1.0	<0.015	-	<1.0	<0.050	0.079	<0.0050	0.18	0.255	<1.0	<0.00050	<0.0015	4.2	4.2	0.0172	<0.001	0.00046	0.103

		Total Metals						Total Metals															Total Metals										Dissolved Metals				
Client Sample ID		Beryllium (Be)-Total	Bismuth (Bi)-Total	Boron (B)-Total	Cadmium (Cd)-Total	Calcium (Ca)-Total	Chromium (Cr)-Total	Cobalt (Co)-Total	Copper (Cu)-Total	Iron (Fe)-Total	Lead (Pb)-Total	Lithium (Li)-Total	Magnesium (Mg)-Total	Manganese (Mn)-Total	Mercury (Hg)-Total	Molybdenum (Mo)-Total	Nickel (Ni)-Total	Phosphorus-Total	Potassium (K)-Total	Selenium (Se)-Total	Silicon (Si)-Total	Silver (Ag)-Total	Sodium (Na)-Total	Strontium (Sr)-Total	Sulfur (S)-Total	Thallium (Tl)-Total	Tin (Sn)-Total	Titanium (Ti)-Total	Tungsten (W)-Total	Uranium (U)-Total	Vanadium (V)-Total	Zinc (Zn)-Total	Zirconium (Zr)-Total	Aluminum (Al)-Dissolved	Antimony (Sb)-Dissolved	Arsenic (As)-Dissolved	Barium (Ba)-Dissolved	Beryllium (Be)-Dissolved
	Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	LDL	0.00010	0.001000	0.050	0.0000100	0.050	0.00100	0.00020	0.00050	0.010	0.000200	0.0020	0.0050	0.00000	0.0000050	0.001000	0.00100	0.0100	0.050	0.000100	0.10	0.000020	0.050	0.00100	3.00	0.000010	0.00500	0.00100	0.00100	0.100000	0.00500	0.0050	0.000100	0.0030	0.00050	0.00010	0.00100	0.00010
	BC CSR (Aquatic Life (AW))																																		0.0900	0.0500	10.0000	0.0015
T95R-64	Summer - July 2024	<0.0001	<0.001	0.124	<0.00001	16.7	<0.001	<0.0002	<0.0005	0.401	<0.0002	0.053	**1.74**	0.0155	<0.0000019	<0.001	<0.001	0.013	**1.22**	<0.0001	3.48	<0.00002	**279**	0.28	<3.0	<0.00001	<0.005	<0.005	<0.001	<0.0001	<0.005	<0.005	<0.0001	<0.003	<0.0005	<0.0001	0.4360	<0.0001
	Fall - September 20224	<0.0002	<0.002	0.136	0.000061	17.7	<0.002	<0.0004	0.0014	0.349	<0.0004	0.0539	1.71	0.0153	<0.000019	<0.002	0.0033	<0.02	1.27	<0.0002	-	<0.00004	275	0.249	<6.0	0.000046	<0.01	<0.01	-	<0.0002	<0.01	<0.01	-	<0.003	<0.0005	-	0.447	<0.0001
T19-18S	Summer - July 2024	<0.0005	<0.005	<0.25	0.0000530	52.7	<0.005	<0.001	0.0037	<0.05	<0.001	<0.01	**20.50**	0.3850	<0.0000095	0.00760	<0.005	0.563	**3.34**	<0.0005	4.95	<0.0001	**127**	0.49	73	<0.00005	<0.025	<0.025	<0.005	0.000930	<0.025	<0.025	<0.0005	<0.003	0.00075	0.00279	0.0824	<0.0001
	Fall - September 20224	0.0051	<0.01	<0.5	0.0019600	129.0	0.103	0.0647	0.362	125.000	0.075800	0.058	**55.90**	4.4900	0.000413	<0.01	0.14	-	**8.29**	<0.001	-	0.001070	**92**	1.04	68	0.00095	<0.05	0.373	-	0.011000	0.146	0.549	-	0.0040	0.00051	0.00249	0.1050	<0.0001
T0B96-02-06	Summer - July 2024	<0.0001	<0.001	<0.05	0.0000240	72.2	<0.001	<0.0002	<0.0005	0.174	0.000380	0.004	**22.80**	0.0911	<0.0000019	<0.001	<0.001	<0.01	**0.83**	<0.0001	6.24	<0.00002	**10**	0.42	4	<0.00001	<0.005	0.0065	<0.001	0.001250	<0.005	<0.005	0.000340	<0.003	<0.0005	0.00014	0.1280	<0.0001
	Fall - September 20224	0.00092	<0.001	<0.05	0.0005720	95.7	0.0028	0.00607	0.0106	5.330	0.018400	0.007	**26.70**	2.0600	<0.0000019	<0.001	0.0114	-	**1.90**	0.00057	-	0.000118	**11**	0.50	6	0.000089	<0.005	0.0675	-	0.003830	0.0063	0.0388	-	<0.003	<0.0005	0.00017	0.1180	<0.0001
T0B96-01-05	Summer - July 2024	<0.0001	<0.001	<0.05	0.0000990	78.7	<0.001	0.0006	0.00377	0.550	0.000950	0.003	**28.10**	0.2990	<0.0000019	0.00140	0.0026	0.037	**1.11**	0.00015	5.66	0.000026	**18**	0.55	12	0.000017	<0.005	0.0147	<0.001	0.002880	<0.005	0.0066	0.000800	0.0059	0.00051	0.00111	0.1750	<0.0001
T95R-40	Summer - July 2024	<0.001	<0.01	<0.5	<0.0001	30.1	<0.01	<0.002	<0.005	0.631	0.039300	0.114	**6.35**	0.0300	<0.0000019	<0.01	<0.01	<0.1	**2.95**	<0.001	3.30	<0.0002	**645**	0.66	<30	<0.0001	<0.05	<0.05	<0.01	<0.001	<0.05	<0.05	<0.001	<0.003	<0.005	<0.001	4.9200	<0.001
	Fall - September 20224	<0.0005	<0.005	0.309	<0.00005	28.9	<0.005	<0.001	<0.0025	1.220	0.003800	0.081	**5.91**	0.0354	<0.00000019	<0.005	<0.005	-	**2.73**	<0.0005	-	<0.0001	**623**	0.53	<15	<0.00005	<0.025	<0.025	-	0.000950	<0.025	<0.025	-	<0.015	<0.0025	<0.0005	3.3800	<0.0005
T18-01D	Summer - July 2024	0.0001	<0.001	0.112	<0.00001	3.0	<0.001	0.00022	0.00109	0.872	0.003360	0.041	**0.93**	0.0140	<0.0000019	0.01220	<0.001	0.049	**2.32**	<0.0001	12.30	<0.00002	**276**	0.12	6	0.000016	<0.005	0.0113	0.00150	0.005240	<0.005	0.0059	0.001250	0.0059	<0.0005	0.00825	0.0973	<0.0001
	Fall - September 20224	<0.0002	<0.002	0.120	<0.00002	3.1	<0.002	<0.00004	0.0016	0.592	0.001860	0.042	**0.81**	0.0096	<0.0000019	0.01170	<0.002	0.039	**2.20**	<0.0002	-	<0.00004	**270**	0.11	6	<0.000020	<0.01	<0.01	-	0.005420	<0.01	<0.01	-	0.9460	<0.0005	-	0.1150	<0.0001
Site 2S	Summer - July 2024	<0.0001	<0.001	<0.05	<0.00001	15.6	<0.001	<0.0002	0.00151	0.054	<0.0002	<0.002	**7.57**	0.0016	0.000002	<0.001	<0.001	<0.01	**0.28**	<0.0001	3.31	<0.00002	**4**	0.11	<3.0	<0.00001	<0.005	<0.005	<0.001	<0.0001	<0.005	<0.005	0.000200	0.0285	<0.0005	0.00050	0.0642	<0.0001
	Fall - September 20224	<0.0001	<0.001	<0.05	<0.00001	28.5	<0.001	<0.0002	0.00069	0.090	<0.0002	<0.002	**16.00**	0.0039	0.000002	<0.001	<0.001	-	**0.46**	<0.0001	-	<0.00002	**10**	0.21	<3.0	<0.00001	<0.005	<0.005	-	0.000150	<0.005	<0.005	-	0.0180	<0.0005	0.00053	0.1180	<0.0001
Site 2SW	Summer - July 2024	<0.0001	<0.001	<0.05	<0.00001	15.3	<0.001	<0.0002	0.00139	0.021	<0.0002	<0.002	**7.66**	0.0012	<0.0000019	<0.001	<0.001	<0.01	**0.26**	<0.0001	3.20	<0.00002	**4**	0.10	<3.0	<0.00001	<0.005	<0.005	<0.001	<0.0001	<0.005	<0.005	0.000190	0.0353	<0.0005	0.00051	0.0665	<0.0001
	Fall - September 20224	<0.0001	<0.001	<0.05	<0.00001	29.0	<0.001	<0.0002	0.0006	0.010	<0.0002	<0.002	**15.80**	0.0016	<0.0000019	<0.001	<0.001	-	**0.44**	<0.0001		<0.00002	**10**	0.21	<3.0	<0.00001	<0.005	<0.005	-	0.000140	<0.005	<0.005	-	0.0122	<0.0005	0.00053	0.1180	<0.0001
Site 2D	Fall - September 20224	<0.0001	0.0025	0.076	0.0002580	20.2	0.0398	0.00379	0.117	4.870	0.058800	0.002	**9.59**	0.8680	-	0.00220	0.0932	-	**2.16**	<0.0001		0.000049	**10**	0.15	<3.0	0.000011	<0.005	0.0117	-	0.000170	<0.005	0.129	-	-	-	-	-	-
Site 4 Upper S	Summer - July 2024	<0.0001	<0.001	<0.05	<0.00001	20.9	<0.001	<0.0002	0.00125	0.114	<0.0002	<0.002	**9.35**	0.0032	<0.0000019	<0.001	<0.001	<0.01	**0.29**	<0.0001	3.27	<0.00002	**4**	0.17	<3.0	<0.00001	<0.005	<0.005	<0.001	<0.0001	<0.005	<0.005	0.000250	0.0288	<0.0005	0.00061	0.0901	<0.0001
	Fall - September 20224	<0.0001	<0.001	<0.05	<0.00001	35.4	<0.001	<0.0002	<0.0005	0.019	<0.0002	<0.002	**17.30**	<0.001	<0.0000019	<0.001	<0.001	-	**0.35**	<0.0001		<0.00002	**8**	0.26	<3.0	<0.00001	<0.005	<0.005	-	0.000130	<0.005	<0.005	-	0.0137	<0.0005	0.00072	0.1390	<0.0001
Site 4 Upper SW	Summer - July 2024	<0.0001	<0.001	<0.05	<0.00001	20.2	<0.001	<0.0002	0.00112	0.023	<0.0002	<0.002	**8.50**	<0.001	<0.0000019	<0.001	<0.001	<0.01	**0.25**	<0.0001	3.16	<0.00002	**4**	0.16	<3.0	<0.00001	<0.005	<0.005	<0.001	<0.0001	<0.005	<0.005	0.000170	0.0269	<0.0005	0.00063	0.0884	<0.0001
	Fall - September 20224	<0.0001	<0.001	<0.05	<0.00001	34.2	<0.001	<0.0002	<0.0005	<0.01	<0.0002	<0.002	**16.50**	<0.001	<0.0000019	<0.001	<0.001	-	**0.33**	<0.0001		<0.00002	**8**	0.25	<3.0	<0.00001	<0.005	<0.005	-	0.000110	<0.005	<0.005	-	0.0160	<0.0005	0.00071	0.1420	<0.0001
Site 4 Upper D	Summer - July 2024	<0.0001	<0.001	<0.05	0.0000960	19.9	0.003	0.00032	0.103	0.555	0.008840	<0.002	**8.42**	0.0590	<0.0000019	<0.001	0.0035	0.037	**1.09**	<0.0001	3.48	0.000033	**5**	0.15	<3.0	<0.00001	<0.005	0.0098	<0.001	<0.0001	<0.005	0.0398	0.000270	0.0257	0.00089	0.00042	0.0884	<0.0001
	Fall - September 20224	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0292	<0.0005	0.00063	0.1440	<0.0001
Site 5S	Summer - July 2024	<0.0001	<0.001	<0.05	0.0000270	17.3	<0.001	0.00054	0.00133	0.251	<0.0002	<0.002	**7.73**	0.1620	<0.0000019	<0.001	<0.001	0.012	**0.38**	<0.0001	3.60	<0.00002	**4**	0.11	<3.0	<0.00001	<0.005	<0.005	<0.001	<0.0001	<0.005	0.0142	0.000210	0.0477	<0.0005	0.00114	0.0823	<0.0001
	Fall - September 20224	<0.0001	<0.001	<0.05	<0.00001	27.6	<0.001	0.00068	<0.0005	0.621	<0.0002	<0.002	**14.20**	0.4590	<0.0000019	<0.001	<0.001	-	**0.51**	<0.0001	-	<0.00002	**9**	0.19	<3.0	<0.00001	<0.005	<0.005	-	<0.0001	<0.005	0.0125	-	0.0231	<0.0005	0.00225	0.1210	<0.0001
Site 5D	Fall - September 20224	0.001	<0.002	<0.1	0.0008990	60.8	0.0402	0.0263	0.0429	35.600	0.030700	0.024	**21.00**	2.6500	-	<0.002	0.0513	-	**2.51**	<0.0002	-	0.000227	**8**	0.45	<6.0	0.000117	<0.01	0.155	-	0.000930	0.073	2.09	-	-	-	-	-	-
Site 5 SW	Summer - July 2024	<0.0001	<0.001	<0.05	<0.00001	15.9	<0.001	<0.0002	0.00138	0.015	<0.0002	<0.002	**7.74**	<0.001	<0.0000019	<0.001	<0.001	<0.01	**0.31**	<0.0001	3.28	<0.00002	**4**	0.11	<3.0	<0.00001	<0.005	<0.005	<0.001	<0.0001	<0.005	<0.005	0.000180	0.0287	<0.0005	0.00048	0.0674	<0.0001
	Fall - September 20224	<0.0002	<0.002	<0.1	<0.00002	27.9	<0.002	<0.0004	<0.001	<0.02	<0.0004	<0.004	**14.80**	<0.002	<0.0000019	<0.002	<0.002	-	**0.47**	<0.0002	-	<0.00004	**9**	0.20	<6.0	<0.00002	<0.01	<0.01	-	<0.0002	<0.01	<0.01	-	0.0139	<0.0005	0.00048	0.1100	<0.0001

		Dissolved Metals											Dissolved Metals																		
Client Sample ID		Bismuth (Bi)-Dissolved	Boron (B)-Dissolved	Cadmium (Cd)-Dissolved	Calcium (Ca)-Dissolved	Chromium (Cr)-Dissolved	Cobalt (Co)-Dissolved	Copper (Cu)-Dissolved	Iron (Fe)-Dissolved	Lead (Pb)-Dissolved	Lithium (Li)-Dissolved	Magnesium (Mg)-Dissolved	Manganese (Mn)-Dissolved	Mercury (Hg)-Dissolved	Molybdenum (Mo)-Dissolved	Nickel (Ni)-Dissolved	Phosphorus-Dissolved	Potassium (K)-Dissolved	Selenium (Se)-Dissolved	Silicon (Si)-Dissolved	Silver (Ag)-Dissolved	Sodium (Na)-Dissolved	Strontium (Sr)-Dissolved	Sulfur (S)-Dissolved	Thallium (Tl)-Dissolved	Tin (Sn)-Dissolved	Titanium (Ti)-Dissolved	Tungsten (W)-Dissolved	Uranium (U)-Dissolved	Vanadium (V)-Dissolved	Zinc (Zn)-Dissolved	Zirconium (Zr)-Dissolved
	Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	LDL	0.001000	0.050	0.0000100	0.000	0.00100	0.00020	0.00020	0.005	0.000200	0.0020	0.0001	0.00100	0.0000019	0.001000	0.00100	0.01000	0.000	0.000010	0.100	0.000020	0.000	0.00100	0.00	0.000010	0.00500	0.00500	0.00100	0.000100	0.00500	0.0050	0.000100
	BC CSR (Aquatic Life (AW))		12.0000	Hardness Dependent (0.0005 @H<30, 0.0015 @H30-<90, 0.0025 @H90-<150, 0.0035 @H150-<210, 0.004 @H>210)		0.0100	0.0400	Hardness Dependent (0.02 @H<50, 0.03 @H50-<75, 0.04 @H75-<100, 0.05 @H100-<125, 0.06 AH125-<150, 0.07 @H150-<200, 0.08 @H175-<200, 0.09@H>200)		Hardness Dependent (0.04 AH<50, 0.05 @H 50-<100, 0.06 @h 100-<200, 0.11 @H 200-<300, 0.16 @H>300)				0.0003	10.0000	Hardness Dependent (0.25 @h<60, 0.65 @H 60-<120, 1.1 @H 120-<180, 1.5 @H>180)			0.0200		Hardness Dependent (0.5 @H>100, 15 @ H>100)				0.0030		1.0000		0.0850		Hardness Dependent (0.075 @h<90, 0.15 @H90-<100, 0.9 @H100-<200, 1.65 @H200-<300, 2.4 @H300-<400)	
T95R-64	Summer - July 2024	<0.001	0.139	<0.00001	17.7	<0.001	<0.0002	<0.0002	0.344	<0.0002	0.058	1.9800	0.0170	<0.0000019	<0.001	<0.001	0.01	1.41	<0.0001	3.76	<0.00002	327	0.29	<3.0	<0.00001	<0.005	<0.005	<0.001	<0.0001	<0.005	<0.005	<0.0001
	Fall - September 20224	<0.001	0.148	<0.00001	19	<0.001	<0.0002	<0.0002	0.363	<0.0002	0.0552	1.91	0.0149	<0.000019	<0.001	<0.001	0.013	1.36	<0.0001	-	<0.00002	323	0.285	-	<0.00001	<0.005	<0.005	-	<0.0001	<0.005	<0.005	-
T19-18S	Summer - July 2024	<0.001	0.069	<0.00001	53.9	<0.001	<0.0002	0.00044	0.177	<0.0002	0.004	20.50	0.5850	<0.0000019	0.01510	<0.001	0.012	1.88	<0.0001	4.43	<0.00002	114	0.58	78	<0.00001	<0.005	<0.005	<0.001	0.001020	<0.005	<0.005	<0.0001
	Fall - September 20224	<0.001	0.064	0.000041	59.6	<0.001	0.00026	0.00047	0.281	<0.0002	0.003	19.20	0.6780	<0.00000019	0.01290	0.0016	-	1.87	<0.0001	-	<0.00002	101	0.58	80	<0.00001	<0.005	<0.005	-	0.002260	<0.005	<0.005	-
T0B96-02-06	Summer - July 2024	<0.001	<0.05	0.000021	80.0	<0.001	<0.0002	0.00054	<0.005	<0.0002	0.004	26.50	0.0339	<0.0000019	<0.001	<0.001	<0.01	0.90	<0.0001	5.82	<0.00002	11	0.45	4	<0.00001	<0.005	<0.005	<0.001	0.001140	<0.005	<0.005	<0.0001
	Fall - September 20224	<0.001	<0.05	<0.00001	77.3	<0.001	<0.0002	0.00063	<0.005	<0.0002	0.004	22.80	<0.001	<0.0000019	0.00110	<0.001		0.99	0.00037	-	<0.00002	14	0.43	8	<0.00001	<0.005	<0.005	-	0.001640	<0.005	<0.005	-
T0B96-01-05	Summer - July 2024	<0.001	<0.05	0.000015	90.9	<0.001	0.0009	0.00103	0.021	<0.0002	0.003	31.60	0.3500	<0.0000019	0.00130	0.0024	0.016	1.19	0.00011	4.69	<0.00002	21	0.60	18	<0.00001	<0.005	<0.005	<0.001	0.002360	<0.005	<0.005	0.000300
T95R-40	Summer - July 2024	<0.01	<0.5	<0.0001	33.0	<0.01	<0.002	<0.002	0.090	<0.002	0.127	7.14	0.0280	<0.0000019	<0.01	<0.01	<0.1	3.14	<0.001	3.33	<0.0002	738	0.66	<30	<0.0001	<0.05	<0.05	-	<0.001	<0.05	<0.05	<0.001
	Fall - September 20224	<0.005	0.382	<0.00005	28.6	<0.005	<0.001	<0.001	0.464	<0.001	0.100	6.50	0.0295	<0.00000019	<0.005	<0.005		3.06	<0.0005	-	<0.0001	694	0.56	<15	<0.00005	<0.025	<0.025	-	<0.0005	<0.025	<0.025	-
T18-01D	Summer - July 2024	<0.001	0.128	<0.00001	2.6	<0.001	<0.0002	0.00025	0.037	<0.0002	0.047	0.67	0.0033	<0.0000019	0.01350	<0.001	0.016	2.44	<0.0001	9.70	<0.00002	321	0.10	7	<0.00001	<0.005	<0.005	0.00110	0.004290	<0.005	<0.005	0.000760
	Fall - September 20224	<0.001	0.123	<0.00001	3.1	<0.001	<0.0002	0.00068	0.435	0.00072	0.041	0.00091	0.0062	<0.0000019	0.01410	<0.001	0.033	2.39	<0.0001	-	<0.00001	316	0.13	7	<0.00001	<0.005	<0.005	-	0.005500	<0.005	<0.005	-
Site 2S	Summer - July 2024	<0.001	<0.05	0.000112	15.3	<0.001	<0.0002	0.00209	0.024	<0.0002	<0.002	8.35	<0.001	0.0000034	<0.001	<0.001	<0.01	0.30	<0.0001	3.35	<0.00002	4	0.11	<3.0	<0.00001	<0.005	<0.005	<0.001	<0.0001	<0.005	<0.005	0.000210
	Fall - September 20224	<0.001	<0.05	<0.00001	31.1	0.0012	<0.0002	0.00068	0.038	<0.0002	<0.002	16.30	0.0022	<0.0000019	<0.001	<0.001		0.48	<0.0001	-	<0.00002	10	0.22	<3.0	<0.00001	<0.005	<0.005	-	0.000160	<0.005	<0.005	-
Site 2SW	Summer - July 2024	<0.001	<0.05	<0.00001	15.8	<0.001	<0.0002	0.00149	0.019	<0.0002	<0.002	8.43	<0.001	0.000003	<0.001	<0.001	<0.01	0.29	<0.0001	3.41	<0.00002	4	0.12	<3.0	<0.00001	<0.005	<0.005	<0.001	<0.0001	<0.005	<0.005	0.000210
	Fall - September 20224	<0.001	<0.05	<0.00001	31.9	<0.001	<0.0002	0.00056	0.007	<0.0002	<0.002	17.20	0.0010	<0.0000019	<0.001	<0.001		0.48	<0.0001	-	<0.00002	10	0.22	<3.0	<0.00001	<0.005	<0.005		0.000160	<0.005	<0.005	-
Site 2D	Fall - September 20224	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site 4 Upper S	Summer - July 2024	<0.001	<0.05	<0.00001	20.8	<0.001	<0.0002	0.00127	0.020	<0.0002	<0.002	10.10	<0.001	0.0000023	<0.001	<0.001	<0.01	0.29	<0.0001	3.24	<0.00002	5	0.17	<3.0	<0.00001	<0.005	<0.005	<0.001	<0.0001	<0.005	<0.005	0.000140
	Fall - September 20224	<0.001	<0.05	<0.00001	37.1	<0.001	<0.0002	0.00045	<0.005	<0.0002	<0.002	18.00	<0.001	<0.0000019	<0.001	<0.001	-	0.37	<0.0001	-	<0.00002	8	0.27	<3.0	<0.00001	<0.005	<0.005	-	0.000130	<0.005	<0.005	-
Site 4 Upper SW	Summer - July 2024	<0.001	<0.05	<0.00001	19.9	<0.001	<0.0002	0.00126	0.011	<0.0002	<0.002	9.54	<0.001	0.0000026	<0.001	<0.001	<0.01	0.27	<0.0001	3.20	<0.00002	5	0.17	<3.0	<0.00001	<0.005	<0.005	<0.001	<0.0001	<0.005	<0.005	0.000140
	Fall - September 20224	<0.001	<0.05	<0.00001	36.8	<0.001	<0.0002	0.00043	<0.005	<0.0002	<0.002	18.50	<0.001	<0.0000019	<0.001	<0.001	-	0.37	<0.0001	-	<0.00002	8	0.27	<3.0	<0.00001	<0.005	<0.005	-	0.000130	<0.005	<0.005	-
Site 4 Upper D	Summer - July 2024	<0.001	<0.05	0.000094	20.6	<0.001	<0.0002	0.07740	0.034	0.00165	<0.002	9.23	0.0592	0.0000022	<0.001	0.0031	<0.01	1.24	<0.0001	2.96	<0.00002	6	0.16	<3.0	<0.00001	<0.005	<0.005	<0.001	<0.0001	<0.005	0.0355	0.000180
	Fall - September 20224	<0.001	<0.05	0.000691	28.2	<0.001	0.00052	0.00512	0.123	0.00069	<0.002	12.50	0.9410	-	<0.001	0.0022	-	0.77	<0.0001	-	<0.00002	7	0.21	<3.0	<0.00001	<0.005	<0.005	-	<0.0001	<0.005	0.0159	-
Site 5S	Summer - July 2024	<0.001	<0.05	0.000018	18.1	<0.001	0.00049	0.00116	0.146	<0.0002	<0.002	8.53	0.1770	<0.0000019	<0.001	<0.001	<0.01	0.41	<0.0001	3.82	<0.00002	5	0.12	<3.0	<0.00001	<0.005	<0.005	<0.001	<0.0001	<0.005	0.0126	0.000240
	Fall - September 20224	<0.001	<0.05	<0.00001	30.0	<0.001	0.00072	<0.0002	0.637	<0.0002	<0.002	15.30	0.5000	<0.0000019	<0.001	<0.001	-	0.54	<0.0001	-	<0.00002	10	0.19	<3.0	<0.00001	<0.005	<0.005	-	<0.0001	<0.005	0.0093	
Site 5D	Fall - September 20224	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site 5 SW	Summer - July 2024	<0.001	<0.05	<0.00001	16.0	<0.001	<0.0002	0.00159	0.014	<0.0002	<0.002	8.74	<0.001	0.000003	<0.001	<0.001	<0.01	0.34	<0.0001	3.44	<0.00002	5	0.12	<3.0	<0.00001	<0.005	<0.005	<0.001	<0.0001	<0.005	<0.005	0.000190
	Fall - September 20224	<0.001	<0.05	<0.00001	30.0	<0.001	<0.0002	0.00065	<0.005	<0.0002	<0.002	15.20	<0.001	<0.0000019	<0.001	<0.001	-	0.49	<0.0001	-	<0.00002	10	0.20	<3.0	<0.00001	<0.005	<0.005	-	0.000140	<0.005	<0.005	-

Appendix C Certificate of Analysis

Four Creek Watershed

Groundwater Surface Water Interaction Investigation
and Water Balance Model Development

Telkwa Coal Limited

SLR Project No.: 201.V24219.00000

September 5, 2025

Your Project #: 201.V24219.00000
Site Location: TENAS
Your C.O.C. #: C#733646-01-01

Attention: Nathalie Brandebourger

SLR CONSULTING (CANADA) LTD
#200 - 887 Great Northern Way
VANCOUVER, BC
Canada V5T 4T5

Report Date: 2024/09/18
Report #: R3558249
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C471255
Received: 2024/09/11, 10:55

Sample Matrix: Water
Samples Received: 10

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Acidity pH 4.5 & pH 8.3 (as CaCO3)	7	N/A	2024/09/16	BBY6SOP-00037	SM 24 2310 B m
Alkalinity @25C (pp, total), CO3,HCO3,OH	7	N/A	2024/09/12	BBY6SOP-00026	SM 24 2320 B m
Alkalinity @25C (pp, total), CO3,HCO3,OH	3	N/A	2024/09/13	BBY6SOP-00026	SM 24 2320 B m
Chloride/Sulphate by Auto Colourimetry	10	N/A	2024/09/13	BBY6SOP-00011 / BBY6SOP-00017	SM24-4500-Cl/SO4-E m
Cyanide (total) (1)	7	N/A	2024/09/18	CAL SOP-00270	SM 24 4500-CN m
Color (True) by Automated Analyzer	7	N/A	2024/09/12	BBY6SOP-00057	SM 24 2120 C m
Carbon (DOC) (2)	1	N/A	2024/09/13	BBY6SOP-00053	SM 24 5310 B m
Carbon (DOC) (2)	6	N/A	2024/09/16	BBY6SOP-00053	SM 24 5310 B m
Conductivity @25C	7	N/A	2024/09/12	BBY6SOP-00026	SM 24 2510 B m
Conductivity @25C	3	N/A	2024/09/13	BBY6SOP-00026	SM 24 2510 B m
Fluoride	10	N/A	2024/09/13	BBY6SOP-00037	SM 24 4500-F C m
Hardness Total (calculated as CaCO3) (3)	8	N/A	2024/09/16	BBY WI-00033	Auto Calc
Hardness Total (calculated as CaCO3) (3)	1	N/A	2024/09/17	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3)	7	N/A	2024/09/16	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3)	1	N/A	2024/09/18	BBY WI-00033	Auto Calc
Mercury (Dissolved) by CV (4)	7	2024/09/13	2024/09/13	BBY7SOP-00032	BCMOE LM 2023 C1.1.3
Mercury (Total) by CV	7	2024/09/13	2024/09/13	BBY7SOP-00032	BCMOE LM 2023 C1.1.3
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	7	N/A	2024/09/16	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	1	N/A	2024/09/18	BBY WI-00033	Auto Calc
Elements by CRC ICPMS (dissolved) (4)	8	N/A	2024/09/13	BBY7SOP-00002	EPA 6020b R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total)	8	2024/09/12	2024/09/16	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (total)	1	2024/09/12	2024/09/17	BBY WI-00033	Auto Calc
Elements by CRC ICPMS (total)	9	2024/09/12	2024/09/14	BBY7SOP-00003 / BBY7SOP-00002	EPA 6020b R2 m
Nitrogen (Total)	7	N/A	2024/09/17	BBY6SOP-00016	SM 24 4500-N C m
Ammonia-N (Total)	10	N/A	2024/09/16	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate + Nitrite (N)	10	N/A	2024/09/12	BBY6SOP-00010	SM 24 4500-NO3- H m
Nitrite (N) Regular Level Water	10	N/A	2024/09/12	BBY6SOP-00010	SM 24 4500-NO2- m
Nitrogen - Nitrate (as N)	10	N/A	2024/09/13	BBY WI-00033	Auto Calc
pH @25°C (5)	7	N/A	2024/09/12	BBY6SOP-00026	SM 24 4500-H+ B m
pH @25°C (5)	3	N/A	2024/09/13	BBY6SOP-00026	SM 24 4500-H+ B m

Your Project #: 201.V24219.00000
Site Location: TENAS
Your C.O.C. #: C#733646-01-01

Attention: Nathalie Brandebourger

SLR CONSULTING (CANADA) LTD
#200 - 887 Great Northern Way
VANCOUVER, BC
Canada V5T 4T5

Report Date: 2024/09/18
Report #: R3558249
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C471255
Received: 2024/09/11, 10:55

Sample Matrix: Water
Samples Received: 10

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Phenols (4-AAP) (1)	7	N/A	2024/09/17	AB SOP-00088	EPA 9066 R0 m
Orthophosphate by Automated Analyzer (6)	7	N/A	2024/09/12	BBY6SOP-00013	SM 24 4500-P E m
Total Dissolved Solids (Filt. Residue)	7	2024/09/12	2024/09/13	BBY6SOP-00033	SM 24 2540 C m
Total Kjeldahl Nitrogen (Total)	7	N/A	2024/09/17	BBY WI-00033	Auto Calc
Carbon (Total Organic) (7)	7	N/A	2024/09/14	BBY6SOP-00053	SM 24 5310 B m
Total Phosphorus	10	2024/09/13	2024/09/13	BBY6SOP-00013	SM 24 4500-P E m
Total Suspended Solids (NFR)	2	2024/09/12	2024/09/13	BBY6SOP-00034	SM 24 2540 D m
Total Suspended Solids (NFR)	5	2024/09/13	2024/09/16	BBY6SOP-00034	SM 24 2540 D m
Turbidity	10	N/A	2024/09/12	BBY6SOP-00027	SM 24 2130 B m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Calgary, 4000 - 19 St. , Calgary, AB, T2E 6P8
(2) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Your Project #: 201.V24219.00000
Site Location: TENAS
Your C.O.C. #: C#733646-01-01

Attention: Nathalie Brandebourger

SLR CONSULTING (CANADA) LTD
#200 - 887 Great Northern Way
VANCOUVER, BC
Canada V5T 4T5

Report Date: 2024/09/18
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CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C471255

Received: 2024/09/11, 10:55

(3) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).
(4) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(5) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas endeavours to analyze samples as soon as possible after receipt.
(6) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(7) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
18 Sep 2024 18:07:33

Please direct all questions regarding this Certificate of Analysis to:
Nahed Amer, Key Account Specialist
Email: Nahed.AMER@bureauveritas.com
Phone# (604) 734 7276

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This report has been generated and distributed using a secure automated process.
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Raphael Kwan, General Manager, BC and Yukon Regions responsible for British Columbia Environmental laboratory operations.

Bureau Veritas Job #: C471255
Report Date: 2024/09/18

SLR CONSULTING (CANADA) LTD
Client Project #: 201.V24219.00000
Site Location: TENAS
Sampler Initials: G

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CVD646		CVD647			CVD648		
Sampling Date		2024/09/05 14:30		2024/09/05 15:03			2024/09/05 15:40		
COC Number		C#733646-01-01		C#733646-01-01			C#733646-01-01		
	UNITS	**SITE 4 U S**	**QC Batch**	**SITE 4 U SW**	**RDL**	**QC Batch**	**SITE 4 U D**	**RDL**	**QC Batch**
ANIONS									
Nitrite (N)	mg/L	<0.0050	B514406	<0.0050	0.0050	B514406	<0.050 (1)	0.050	B514406
Calculated Parameters									
Dissolved Hardness (CaCO3)	mg/L	167	B513791	168	0.50	B513791	122	0.50	B513791
Total Hardness (CaCO3)	mg/L	160	B513790	153	0.50	B513790			
Total Kjeldahl Nitrogen (Calc)	mg/L	0.14	B514058	0.14	0.020	B514058			
Nitrate (N)	mg/L	<0.020	B511987	<0.020	0.020	B511987	<0.20	0.20	B513798
Misc. Inorganics									
Conductivity	uS/cm	340	B514396	330	2.0	B514396	270	2.0	B514557
Strong Acid Dissoc. Cyanide (CN)	mg/L	<0.00050	B525529	<0.00050	0.00050	B525529			
Dissolved Organic Carbon (C)	mg/L	2.3	B516346	2.2	0.50	B519408			
pH	pH	8.18	B514401	8.23	N/A	B514401	8.00	N/A	B514544
Acidity (pH 4.5)	mg/L	<1.0	B518800	<1.0	1.0	B518800			
Total Organic Carbon (C)	mg/L	2.2	B516565	2.4	0.50	B516565			
Acidity (pH 8.3)	mg/L	<1.0	B518800	<1.0	1.0	B518800			
Total Dissolved Solids	mg/L	180	B514538	170	10	B514538			
Total Suspended Solids	mg/L	5.6	B514806	<1.0	1.0	B514806			
Anions									
Alkalinity (PP as CaCO3)	mg/L	<1.0	B514390	<1.0	1.0	B514390	<1.0	1.0	B514550
Alkalinity (Total as CaCO3)	mg/L	180	B514390	180	1.0	B514390	150	1.0	B514550
Bicarbonate (HCO3)	mg/L	220	B514390	220	1.0	B514390	180	1.0	B514550
Carbonate (CO3)	mg/L	<1.0	B514390	<1.0	1.0	B514390	<1.0	1.0	B514550
Dissolved Fluoride (F)	mg/L	<0.050	B515656	<0.050	0.050	B515656	<0.050	0.050	B515656
Hydroxide (OH)	mg/L	<1.0	B514390	<1.0	1.0	B514390	<1.0	1.0	B514550
Chloride (Cl)	mg/L	<1.0	B515814	<1.0	1.0	B515814	<1.0	1.0	B516001
Sulphate (SO4)	mg/L	<1.0	B515814	<1.0	1.0	B515814	<1.0	1.0	B516001
MISCELLANEOUS									
True Colour	Col. Unit	8.2	B514731	9.2	2.0	B514731			
Nutrients									
Total Ammonia (N)	mg/L	<0.015	B519177	<0.015	0.015	B519177	<0.015	0.015	B519177
Orthophosphate (P)	mg/L	<0.0030	B514752	<0.0030	0.0030	B514752			

RDL = Reportable Detection Limit
N/A = Not Applicable
(1) Detection limit raised due to interferent.

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Bureau Veritas Job #: C471255
Report Date: 2024/09/18

SLR CONSULTING (CANADA) LTD
Client Project #: 201.V24219.00000
Site Location: TENAS
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RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CVD646		CVD647			CVD648		
Sampling Date		2024/09/05 14:30		2024/09/05 15:03			2024/09/05 15:40		
COC Number		C#733646-01-01		C#733646-01-01			C#733646-01-01		
	UNITS	**SITE 4 U S**	**QC Batch**	**SITE 4 U SW**	**RDL**	**QC Batch**	**SITE 4 U D**	**RDL**	**QC Batch**
Total Phosphorus (P)	mg/L	0.0034	B515761	<0.0030	0.0030	B515761	0.0035	0.0030	B515761
Nitrate plus Nitrite (N)	mg/L	<0.020	B514405	<0.020	0.020	B514405	<0.20 (1)	0.20	B514405
Total Nitrogen (N)	mg/L	0.143	B518512	0.141	0.020	B518512			
Misc. Organics									
Phenols	mg/L	<0.0015	B522355	<0.0015	0.0015	B522355			
Physical Properties									
Turbidity	NTU	0.98	B514522	0.39	0.10	B514522	3900	0.10	B514522

RDL = Reportable Detection Limit
(1) Detection limit raised due to interferent.

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Bureau Veritas Job #: C471255
Report Date: 2024/09/18

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Client Project #: 201.V24219.00000
Site Location: TENAS
Sampler Initials: G

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CVD649			CVD650		
Sampling Date		2024/09/06 12:59			2024/09/06 12:32		
COC Number		C#733646-01-01			C#733646-01-01		
	UNITS	**SITE 5 S**	**RDL**	**QC Batch**	**SITE 5 D**	**RDL**	**QC Batch**
ANIONS							
Nitrite (N)	mg/L	<0.0050	0.0050	B514406	<0.0050	0.0050	B514406
Calculated Parameters							
Dissolved Hardness (CaCO3)	mg/L	138	0.50	B513791			
Total Hardness (CaCO3)	mg/L	127	0.50	B513790	239	0.50	B513790
Total Kjeldahl Nitrogen (Calc)	mg/L	0.33	0.020	B514058			
Nitrate (N)	mg/L	<0.020	0.020	B511987	<0.020	0.020	B513798
Misc. Inorganics							
Conductivity	uS/cm	280	2.0	B514431	160	2.0	B514557
Strong Acid Dissoc. Cyanide (CN)	mg/L	<0.00050	0.00050	B525529			
Dissolved Organic Carbon (C)	mg/L	5.9	0.50	B519408			
pH	pH	7.90	N/A	B514427	10.1	N/A	B514544
Acidity (pH 4.5)	mg/L	<1.0	1.0	B518800			
Total Organic Carbon (C)	mg/L	5.7	0.50	B516565			
Acidity (pH 8.3)	mg/L	<1.0	1.0	B518800			
Total Dissolved Solids	mg/L	150	10	B514538			
Total Suspended Solids	mg/L	10	1.0	B516146			
Anions							
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B514414	41	1.0	B514550
Alkalinity (Total as CaCO3)	mg/L	150	1.0	B514414	88	1.0	B514550
Bicarbonate (HCO3)	mg/L	180	1.0	B514414	7.9	1.0	B514550
Carbonate (CO3)	mg/L	<1.0	1.0	B514414	49	1.0	B514550
Dissolved Fluoride (F)	mg/L	<0.050	0.050	B515656	0.14	0.050	B515656
Hydroxide (OH)	mg/L	<1.0	1.0	B514414	<1.0	1.0	B514550
Chloride (Cl)	mg/L	<1.0	1.0	B516001	<1.0	1.0	B516001
Sulphate (SO4)	mg/L	<1.0	1.0	B516001	<1.0	1.0	B516001
MISCELLANEOUS							
True Colour	Col. Unit	32.5	2.0	B514731			
Nutrients							
Total Ammonia (N)	mg/L	0.065	0.015	B519177	0.23	0.015	B519177
Orthophosphate (P)	mg/L	0.0045	0.0030	B514752			
Total Phosphorus (P)	mg/L	0.0086	0.0030	B515761	0.052	0.0030	B515765

RDL = Reportable Detection Limit
N/A = Not Applicable

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Client Project #: 201.V24219.00000
Site Location: TENAS
Sampler Initials: G

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CVD649			CVD650		
Sampling Date		2024/09/06 12:59			2024/09/06 12:32		
COC Number		C#733646-01-01			C#733646-01-01		
	UNITS	**SITE 5 S**	**RDL**	**QC Batch**	**SITE 5 D**	**RDL**	**QC Batch**
Nitrate plus Nitrite (N)	mg/L	<0.020	0.020	B514405	<0.020	0.020	B514405
Total Nitrogen (N)	mg/L	0.327	0.020	B518512			
Misc. Organics							
Phenols	mg/L	<0.0015	0.0015	B522355			
Physical Properties							
Turbidity	NTU	4.0	0.10	B514522	>4000	0.10	B514522
RDL = Reportable Detection Limit							

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Bureau Veritas Job #: C471255
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Client Project #: 201.V24219.00000
Site Location: TENAS
Sampler Initials: G

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CVD651	CVD652			CVD653		
Sampling Date		2024/09/06 13:50	2024/09/06 15:16			2024/09/06 15:46		
COC Number		C#733646-01-01	C#733646-01-01			C#733646-01-01		
	UNITS	**SITE 5 SW**	**SITE 2 S**	**RDL**	**QC Batch**	**SITE 2 D**	**RDL**	**QC Batch**
ANIONS								
Nitrite (N)	mg/L	<0.0050	<0.0050	0.0050	B514406	0.0086	0.0050	B514406
Calculated Parameters								
Dissolved Hardness (CaCO3)	mg/L	138	145	0.50	B513791			
Total Hardness (CaCO3)	mg/L	131	137	0.50	B513790	90.0	0.50	B513790
Total Kjeldahl Nitrogen (Calc)	mg/L	0.18	0.18	0.020	B514058			
Nitrate (N)	mg/L	0.079	0.047	0.020	B511987	0.023	0.020	B513798
Misc. Inorganics								
Conductivity	uS/cm	290	310	2.0	B514431	230	2.0	B514557
Strong Acid Dissoc. Cyanide (CN)	mg/L	<0.00050	0.00052	0.00050	B525529			
Dissolved Organic Carbon (C)	mg/L	4.2	3.9	0.50	B519408			
pH	pH	8.16	8.15	N/A	B514427	7.55	N/A	B514544
Acidity (pH 4.5)	mg/L	<1.0	<1.0	1.0	B518800			
Total Organic Carbon (C)	mg/L	4.2	3.9	0.50	B516565			
Acidity (pH 8.3)	mg/L	<1.0	<1.0	1.0	B518800			
Total Dissolved Solids	mg/L	160	170	10	B514538			
Total Suspended Solids	mg/L	<1.0	67	1.0	B516146			
Anions								
Alkalinity (PP as CaCO3)	mg/L	<1.0	<1.0	1.0	B514414	<1.0	1.0	B514550
Alkalinity (Total as CaCO3)	mg/L	150	170	1.0	B514414	120	1.0	B514550
Bicarbonate (HCO3)	mg/L	190	200	1.0	B514414	140	1.0	B514550
Carbonate (CO3)	mg/L	<1.0	<1.0	1.0	B514414	<1.0	1.0	B514550
Dissolved Fluoride (F)	mg/L	<0.050	<0.050	0.050	B515656	0.066	0.050	B515656
Hydroxide (OH)	mg/L	<1.0	<1.0	1.0	B514414	<1.0	1.0	B514550
Chloride (Cl)	mg/L	<1.0	<1.0	1.0	B516001	2.3	1.0	B516001
Sulphate (SO4)	mg/L	<1.0	<1.0	1.0	B516001	<1.0	1.0	B516001
MISCELLANEOUS								
True Colour	Col. Unit	14.8	13.8	2.0	B514731			
Nutrients								
Total Ammonia (N)	mg/L	<0.015	<0.015	0.015	B519177	0.32	0.015	B519177
Orthophosphate (P)	mg/L	<0.0030	<0.0030	0.0030	B514752			
Total Phosphorus (P)	mg/L	<0.0030	0.012	0.0030	B515765	0.15	0.0030	B515765

RDL = Reportable Detection Limit
N/A = Not Applicable

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Bureau Veritas Job #: C471255
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SLR CONSULTING (CANADA) LTD
Client Project #: 201.V24219.00000
Site Location: TENAS
Sampler Initials: G

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CVD651	CVD652			CVD653		
Sampling Date		2024/09/06 13:50	2024/09/06 15:16			2024/09/06 15:46		
COC Number		C#733646-01-01	C#733646-01-01			C#733646-01-01		
	UNITS	**SITE 5 SW**	**SITE 2 S**	**RDL**	**QC Batch**	**SITE 2 D**	**RDL**	**QC Batch**
Nitrate plus Nitrite (N)	mg/L	0.079	0.047	0.020	B514405	0.032	0.020	B514405
Total Nitrogen (N)	mg/L	0.255	0.227	0.020	B518512			
Misc. Organics								
Phenols	mg/L	<0.0015	<0.0015	0.0015	B522355			
Physical Properties								
Turbidity	NTU	0.31	5.7	0.10	B514522	35	0.10	B514522
RDL = Reportable Detection Limit								

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CVD654		CVD655		
Sampling Date		2024/09/06 15:55		2024/09/06 10:08		
COC Number		C#733646-01-01		C#733646-01-01		
	UNITS	**SITE 2 SW**	**QC Batch**	**TOB96-02-06**	**RDL**	**QC Batch**
ANIONS						
Nitrite (N)	mg/L	<0.0050	B514406	<0.0050	0.0050	B514406
Calculated Parameters						
Dissolved Hardness (CaCO3)	mg/L	151	B513791	287	0.50	B525942
Total Hardness (CaCO3)	mg/L	138	B513790	349	0.50	B513790
Total Kjeldahl Nitrogen (Calc)	mg/L	0.21	B514058	0.091	0.020	B514058
Nitrate (N)	mg/L	0.036	B511987	<0.020	0.020	B511987
Misc. Inorganics						
Conductivity	uS/cm	310	B514431	610	2.0	B514431
Strong Acid Dissoc. Cyanide (CN)	mg/L	<0.00050	B525529	0.00096	0.00050	B525529
Dissolved Organic Carbon (C)	mg/L	3.7	B519408	1.9	0.50	B519408
pH	pH	8.22	B514427	8.01	N/A	B514427
Acidity (pH 4.5)	mg/L	<1.0	B518800	<1.0	1.0	B518800
Total Organic Carbon (C)	mg/L	3.8	B516565	0.79	0.50	B516565
Acidity (pH 8.3)	mg/L	<1.0	B518800	1.8	1.0	B518800
Total Dissolved Solids	mg/L	170	B514538	340	10	B514538
Total Suspended Solids	mg/L	1.2	B516146	96	1.0	B516146
Anions						
Alkalinity (PP as CaCO3)	mg/L	<1.0	B514414	<1.0	1.0	B514414
Alkalinity (Total as CaCO3)	mg/L	170	B514414	330	1.0	B514414
Bicarbonate (HCO3)	mg/L	200	B514414	400	1.0	B514414
Carbonate (CO3)	mg/L	<1.0	B514414	<1.0	1.0	B514414
Dissolved Fluoride (F)	mg/L	<0.050	B515656	0.096	0.050	B515656
Hydroxide (OH)	mg/L	<1.0	B514414	<1.0	1.0	B514414
Chloride (Cl)	mg/L	<1.0	B516001	<1.0	1.0	B516001
Sulphate (SO4)	mg/L	<1.0	B516001	18	1.0	B516001
MISCELLANEOUS						
True Colour	Col. Unit	13.7	B514731	<2.0	2.0	B514731
Nutrients						
Total Ammonia (N)	mg/L	<0.015	B519177	<0.015	0.015	B519177
Orthophosphate (P)	mg/L	<0.0030	B514752	<0.0030	0.0030	B514752
Total Phosphorus (P)	mg/L	<0.0030	B515765	0.0058	0.0030	B515765

RDL = Reportable Detection Limit
N/A = Not Applicable

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Bureau Veritas Job #: C471255
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Client Project #: 201.V24219.00000
Site Location: TENAS
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RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CVD654		CVD655		
Sampling Date		2024/09/06 15:55		2024/09/06 10:08		
COC Number		C#733646-01-01		C#733646-01-01		
	UNITS	**SITE 2 SW**	**QC Batch**	**TOB96-02-06**	**RDL**	**QC Batch**
Nitrate plus Nitrite (N)	mg/L	0.036	B514405	<0.020	0.020	B514405
Total Nitrogen (N)	mg/L	0.241	B518512	0.091	0.020	B518512
Misc. Organics						
Phenols	mg/L	<0.0015	B522355	<0.0015	0.0015	B522355
Physical Properties						
Turbidity	NTU	0.26	B514522	35	0.10	B514522
RDL = Reportable Detection Limit						

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Bureau Veritas Job #: C471255
Report Date: 2024/09/18

SLR CONSULTING (CANADA) LTD
Client Project #: 201.V24219.00000
Site Location: TENAS
Sampler Initials: G

MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CVD646	CVD647	CVD649	CVD651	CVD652		
Sampling Date		2024/09/05 14:30	2024/09/05 15:03	2024/09/06 12:59	2024/09/06 13:50	2024/09/06 15:16		
COC Number		C#733646-01-01	C#733646-01-01	C#733646-01-01	C#733646-01-01	C#733646-01-01		
	UNITS	**SITE 4 U S**	**SITE 4 U SW**	**SITE 5 S**	**SITE 5 SW**	**SITE 2 S**	**RDL**	**QC Batch**
Elements								
Dissolved Mercury (Hg)	ug/L	<0.0019	<0.0019	<0.0019	<0.0019	0.0020	0.0019	B515658
Total Mercury (Hg)	ug/L	<0.0019	<0.0019	<0.0019	<0.0019	<0.0019	0.0019	B515813
RDL = Reportable Detection Limit								

Bureau Veritas ID		CVD654	CVD655		
Sampling Date		2024/09/06 15:55	2024/09/06 10:08		
COC Number		C#733646-01-01	C#733646-01-01		
	UNITS	**SITE 2 SW**	**TOB96-02-06**	**RDL**	**QC Batch**
Elements					
Dissolved Mercury (Hg)	ug/L	<0.0019	<0.0019	0.0019	B515658
Total Mercury (Hg)	ug/L	<0.0019	<0.0019	0.0019	B515813
RDL = Reportable Detection Limit					

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ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CVD646		CVD647			CVD648		
Sampling Date		2024/09/05 14:30		2024/09/05 15:03			2024/09/05 15:40		
COC Number		C#733646-01-01		C#733646-01-01			C#733646-01-01		
	UNITS	**SITE 4 U S**	**QC Batch**	**SITE 4 U SW**	**RDL**	**QC Batch**	**SITE 4 U D**	**RDL**	**QC Batch**
Dissolved Metals by ICPMS									
Dissolved Aluminum (Al)	ug/L	13.7	B514639	16.0	3.0	B514639	29.2	3.0	B514639
Dissolved Antimony (Sb)	ug/L	<0.50	B514639	<0.50	0.50	B514639	<0.50	0.50	B514639
Dissolved Arsenic (As)	ug/L	0.72	B514639	0.71	0.10	B514639	0.63	0.10	B514639
Dissolved Barium (Ba)	ug/L	139	B514639	142	1.0	B514639	144	1.0	B514639
Dissolved Beryllium (Be)	ug/L	<0.10	B514639	<0.10	0.10	B514639	<0.10	0.10	B514639
Dissolved Bismuth (Bi)	ug/L	<1.0	B514639	<1.0	1.0	B514639	<1.0	1.0	B514639
Dissolved Boron (B)	ug/L	<50	B514639	<50	50	B514639	<50	50	B514639
Dissolved Cadmium (Cd)	ug/L	<0.010	B514639	<0.010	0.010	B514639	0.691	0.010	B514639
Dissolved Chromium (Cr)	ug/L	<1.0	B514639	<1.0	1.0	B514639	<1.0	1.0	B514639
Dissolved Cobalt (Co)	ug/L	<0.20	B514639	<0.20	0.20	B514639	0.52	0.20	B514639
Dissolved Copper (Cu)	ug/L	0.45	B514639	0.43	0.20	B514639	5.12	0.20	B514639
Dissolved Iron (Fe)	ug/L	<5.0	B514639	<5.0	5.0	B514639	123	5.0	B514639
Dissolved Lead (Pb)	ug/L	<0.20	B514639	<0.20	0.20	B514639	0.69	0.20	B514639
Dissolved Lithium (Li)	ug/L	<2.0	B514639	<2.0	2.0	B514639	<2.0	2.0	B514639
Dissolved Manganese (Mn)	ug/L	<1.0	B514639	<1.0	1.0	B514639	941	1.0	B514639
Dissolved Molybdenum (Mo)	ug/L	<1.0	B514639	<1.0	1.0	B514639	<1.0	1.0	B514639
Dissolved Nickel (Ni)	ug/L	<1.0	B514639	<1.0	1.0	B514639	2.2	1.0	B514639
Dissolved Selenium (Se)	ug/L	<0.10	B514639	<0.10	0.10	B514639	<0.10	0.10	B514639
Dissolved Silver (Ag)	ug/L	<0.020	B514639	<0.020	0.020	B514639	<0.020	0.020	B514639
Dissolved Strontium (Sr)	ug/L	272	B514639	270	1.0	B514639	206	1.0	B514639
Dissolved Thallium (Tl)	ug/L	<0.010	B514639	<0.010	0.010	B514639	<0.010	0.010	B514639
Dissolved Tin (Sn)	ug/L	<5.0	B514639	<5.0	5.0	B514639	<5.0	5.0	B514639
Dissolved Titanium (Ti)	ug/L	<5.0	B514639	<5.0	5.0	B514639	<5.0	5.0	B514639
Dissolved Uranium (U)	ug/L	0.13	B514639	0.13	0.10	B514639	<0.10	0.10	B514639
Dissolved Vanadium (V)	ug/L	<5.0	B514639	<5.0	5.0	B514639	<5.0	5.0	B514639
Dissolved Zinc (Zn)	ug/L	<5.0	B514639	<5.0	5.0	B514639	15.9	5.0	B514639
Dissolved Calcium (Ca)	mg/L	37.1	B513793	36.8	0.050	B513793	28.2	0.050	B513793
Dissolved Magnesium (Mg)	mg/L	18.0	B513793	18.5	0.050	B513793	12.5	0.050	B513793
Dissolved Potassium (K)	mg/L	0.369	B513793	0.367	0.050	B513793	0.765	0.050	B513793
Dissolved Sodium (Na)	mg/L	8.43	B513793	8.36	0.050	B513793	6.90	0.050	B513793
Dissolved Sulphur (S)	mg/L	<3.0	B513793	<3.0	3.0	B513793	<3.0	3.0	B513793
RDL = Reportable Detection Limit									

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CVD646		CVD647			CVD648		
Sampling Date		2024/09/05 14:30		2024/09/05 15:03			2024/09/05 15:40		
COC Number		C#733646-01-01		C#733646-01-01			C#733646-01-01		
	UNITS	**SITE 4 U S**	**QC Batch**	**SITE 4 U SW**	**RDL**	**QC Batch**	**SITE 4 U D**	**RDL**	**QC Batch**
Total Metals by ICPMS									
Total Aluminum (Al)	ug/L	28.6	B514762	19.1	3.0	B514778			
Total Antimony (Sb)	ug/L	<0.50	B514762	<0.50	0.50	B514778			
Total Arsenic (As)	ug/L	0.70	B514762	0.64	0.10	B514778			
Total Barium (Ba)	ug/L	130	B514762	125	1.0	B514778			
Total Beryllium (Be)	ug/L	<0.10	B514762	<0.10	0.10	B514778			
Total Bismuth (Bi)	ug/L	<1.0	B514762	<1.0	1.0	B514778			
Total Boron (B)	ug/L	<50	B514762	<50	50	B514778			
Total Cadmium (Cd)	ug/L	<0.010	B514762	<0.010	0.010	B514778			
Total Chromium (Cr)	ug/L	<1.0	B514762	<1.0	1.0	B514778			
Total Cobalt (Co)	ug/L	<0.20	B514762	<0.20	0.20	B514778			
Total Copper (Cu)	ug/L	<0.50	B514762	<0.50	0.50	B514778			
Total Iron (Fe)	ug/L	19	B514762	<10	10	B514778			
Total Lead (Pb)	ug/L	<0.20	B514762	<0.20	0.20	B514778			
Total Lithium (Li)	ug/L	<2.0	B514762	<2.0	2.0	B514778			
Total Manganese (Mn)	ug/L	<1.0	B514762	<1.0	1.0	B514778			
Total Molybdenum (Mo)	ug/L	<1.0	B514762	<1.0	1.0	B514778			
Total Nickel (Ni)	ug/L	<1.0	B514762	<1.0	1.0	B514778			
Total Selenium (Se)	ug/L	<0.10	B514762	<0.10	0.10	B514778			
Total Silver (Ag)	ug/L	<0.020	B514762	<0.020	0.020	B514778			
Total Strontium (Sr)	ug/L	264	B514762	251	1.0	B514778			
Total Thallium (Tl)	ug/L	<0.010	B514762	<0.010	0.010	B514778			
Total Tin (Sn)	ug/L	<5.0	B514762	<5.0	5.0	B514778			
Total Titanium (Ti)	ug/L	<5.0	B514762	<5.0	5.0	B514778			
Total Uranium (U)	ug/L	0.13	B514762	0.11	0.10	B514778			
Total Vanadium (V)	ug/L	<5.0	B514762	<5.0	5.0	B514778			
Total Zinc (Zn)	ug/L	<5.0	B514762	<5.0	5.0	B514778			
Total Calcium (Ca)	mg/L	35.4	B513795	34.2	0.050	B513795			
Total Magnesium (Mg)	mg/L	17.3	B513795	16.5	0.050	B513795			
Total Potassium (K)	mg/L	0.350	B513795	0.329	0.050	B513795			
Total Sodium (Na)	mg/L	7.99	B513795	7.54	0.050	B513795			
Total Sulphur (S)	mg/L	<3.0	B513795	<3.0	3.0	B513795			
RDL = Reportable Detection Limit									

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CVD649			CVD650			CVD651		
Sampling Date		2024/09/06 12:59			2024/09/06 12:32			2024/09/06 13:50		
COC Number		C#733646-01-01			C#733646-01-01			C#733646-01-01		
	UNITS	**SITE 5 S**	**RDL**	**QC Batch**	**SITE 5 D**	**RDL**	**QC Batch**	**SITE 5 SW**	**RDL**	**QC Batch**
Dissolved Metals by ICPMS										
Dissolved Aluminum (Al)	ug/L	23.1	3.0	B514639				13.9	3.0	B514639
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	B514639				<0.50	0.50	B514639
Dissolved Arsenic (As)	ug/L	2.25	0.10	B514639				0.48	0.10	B514639
Dissolved Barium (Ba)	ug/L	121	1.0	B514639				110	1.0	B514639
Dissolved Beryllium (Be)	ug/L	<0.10	0.10	B514639				<0.10	0.10	B514639
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	B514639				<1.0	1.0	B514639
Dissolved Boron (B)	ug/L	<50	50	B514639				<50	50	B514639
Dissolved Cadmium (Cd)	ug/L	<0.010	0.010	B514639				<0.010	0.010	B514639
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	B514639				<1.0	1.0	B514639
Dissolved Cobalt (Co)	ug/L	0.72	0.20	B514639				<0.20	0.20	B514639
Dissolved Copper (Cu)	ug/L	<0.20	0.20	B514639				0.65	0.20	B514639
Dissolved Iron (Fe)	ug/L	637	5.0	B514639				<5.0	5.0	B514639
Dissolved Lead (Pb)	ug/L	<0.20	0.20	B514639				<0.20	0.20	B514639
Dissolved Lithium (Li)	ug/L	<2.0	2.0	B514639				<2.0	2.0	B514639
Dissolved Manganese (Mn)	ug/L	500	1.0	B514639				<1.0	1.0	B514639
Dissolved Molybdenum (Mo)	ug/L	<1.0	1.0	B514639				<1.0	1.0	B514639
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	B514639				<1.0	1.0	B514639
Dissolved Selenium (Se)	ug/L	<0.10	0.10	B514639				<0.10	0.10	B514639
Dissolved Silver (Ag)	ug/L	<0.020	0.020	B514639				<0.020	0.020	B514639
Dissolved Strontium (Sr)	ug/L	192	1.0	B514639				202	1.0	B514639
Dissolved Thallium (Tl)	ug/L	<0.010	0.010	B514639				<0.010	0.010	B514639
Dissolved Tin (Sn)	ug/L	<5.0	5.0	B514639				<5.0	5.0	B514639
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	B514639				<5.0	5.0	B514639
Dissolved Uranium (U)	ug/L	<0.10	0.10	B514639				0.14	0.10	B514639
Dissolved Vanadium (V)	ug/L	<5.0	5.0	B514639				<5.0	5.0	B514639
Dissolved Zinc (Zn)	ug/L	9.3	5.0	B514639				<5.0	5.0	B514639
Dissolved Calcium (Ca)	mg/L	30.0	0.050	B513793				30.0	0.050	B513793
Dissolved Magnesium (Mg)	mg/L	15.3	0.050	B513793				15.2	0.050	B513793
Dissolved Potassium (K)	mg/L	0.541	0.050	B513793				0.492	0.050	B513793
Dissolved Sodium (Na)	mg/L	9.66	0.050	B513793				9.52	0.050	B513793
Dissolved Sulphur (S)	mg/L	<3.0	3.0	B513793				<3.0	3.0	B513793

RDL = Reportable Detection Limit

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CVD649			CVD650			CVD651		
Sampling Date		2024/09/06 12:59			2024/09/06 12:32			2024/09/06 13:50		
COC Number		C#733646-01-01			C#733646-01-01			C#733646-01-01		
	UNITS	**SITE 5 S**	**RDL**	**QC Batch**	**SITE 5 D**	**RDL**	**QC Batch**	**SITE 5 SW**	**RDL**	**QC Batch**
Total Metals by ICPMS										
Total Aluminum (Al)	ug/L	57.4	3.0	B514778	28100	6.0	B514778	17.2	6.0	B514778
Total Antimony (Sb)	ug/L	<0.50	0.50	B514778	<1.0	1.0	B514778	<1.0	1.0	B514778
Total Arsenic (As)	ug/L	2.18	0.10	B514778	18.5	0.20	B514778	0.46	0.20	B514778
Total Barium (Ba)	ug/L	113	1.0	B514778	754	2.0	B514778	103	2.0	B514778
Total Beryllium (Be)	ug/L	<0.10	0.10	B514778	1.00	0.20	B514778	<0.20	0.20	B514778
Total Bismuth (Bi)	ug/L	<1.0	1.0	B514778	<2.0	2.0	B514778	<2.0	2.0	B514778
Total Boron (B)	ug/L	<50	50	B514778	<100	100	B514778	<100	100	B514778
Total Cadmium (Cd)	ug/L	<0.010	0.010	B514778	0.899	0.020	B514778	<0.020	0.020	B514778
Total Chromium (Cr)	ug/L	<1.0	1.0	B514778	40.2	2.0	B514778	<2.0	2.0	B514778
Total Cobalt (Co)	ug/L	0.68	0.20	B514778	26.3	0.40	B514778	<0.40	0.40	B514778
Total Copper (Cu)	ug/L	<0.50	0.50	B514778	42.9	1.0	B514778	<1.0	1.0	B514778
Total Iron (Fe)	ug/L	621	10	B514778	35600	20	B514778	<20	20	B514778
Total Lead (Pb)	ug/L	<0.20	0.20	B514778	30.7	0.40	B514778	<0.40	0.40	B514778
Total Lithium (Li)	ug/L	<2.0	2.0	B514778	24.2	4.0	B514778	<4.0	4.0	B514778
Total Manganese (Mn)	ug/L	459	1.0	B514778	2650	2.0	B514778	<2.0	2.0	B514778
Total Molybdenum (Mo)	ug/L	<1.0	1.0	B514778	<2.0	2.0	B514778	<2.0	2.0	B514778
Total Nickel (Ni)	ug/L	<1.0	1.0	B514778	51.3	2.0	B514778	<2.0	2.0	B514778
Total Selenium (Se)	ug/L	<0.10	0.10	B514778	<0.20	0.20	B514778	<0.20	0.20	B514778
Total Silver (Ag)	ug/L	<0.020	0.020	B514778	0.227	0.040	B514778	<0.040	0.040	B514778
Total Strontium (Sr)	ug/L	190	1.0	B514778	446	2.0	B514778	200	2.0	B514778
Total Thallium (Tl)	ug/L	<0.010	0.010	B514778	0.117	0.020	B514778	<0.020	0.020	B514778
Total Tin (Sn)	ug/L	<5.0	5.0	B514778	<10	10	B514778	<10	10	B514778
Total Titanium (Ti)	ug/L	<5.0	5.0	B514778	155	10	B514778	<10	10	B514778
Total Uranium (U)	ug/L	<0.10	0.10	B514778	0.93	0.20	B514778	<0.20	0.20	B514778
Total Vanadium (V)	ug/L	<5.0	5.0	B514778	73	10	B514778	<10	10	B514778
Total Zinc (Zn)	ug/L	12.5	5.0	B514778	2090	10	B514778	<10	10	B514778
Total Calcium (Ca)	mg/L	27.6	0.050	B513795	60.8	0.10	B513795	27.9	0.10	B513795
Total Magnesium (Mg)	mg/L	14.2	0.050	B513795	21.0	0.10	B513795	14.8	0.10	B513795
Total Potassium (K)	mg/L	0.506	0.050	B513795	2.51	0.10	B513795	0.47	0.10	B513795
Total Sodium (Na)	mg/L	8.86	0.050	B513795	8.38	0.10	B513795	9.05	0.10	B513795
Total Sulphur (S)	mg/L	<3.0	3.0	B513795	<6.0	6.0	B513795	<6.0	6.0	B513795
RDL = Reportable Detection Limit										

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CVD652			CVD653			CVD654		
Sampling Date		2024/09/06 15:16			2024/09/06 15:46			2024/09/06 15:55		
COC Number		C#733646-01-01			C#733646-01-01			C#733646-01-01		
	UNITS	**SITE 2 S**	**RDL**	**QC Batch**	**SITE 2 D**	**RDL**	**QC Batch**	**SITE 2 SW**	**RDL**	**QC Batch**
Dissolved Metals by ICPMS										
Dissolved Aluminum (Al)	ug/L	18.0	3.0	B514639				12.2	3.0	B515379
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	B514639				<0.50	0.50	B515379
Dissolved Arsenic (As)	ug/L	0.53	0.10	B514639				0.53	0.10	B515379
Dissolved Barium (Ba)	ug/L	118	1.0	B514639				118	1.0	B515379
Dissolved Beryllium (Be)	ug/L	<0.10	0.10	B514639				<0.10	0.10	B515379
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	B514639				<1.0	1.0	B515379
Dissolved Boron (B)	ug/L	<50	50	B514639				<50	50	B515379
Dissolved Cadmium (Cd)	ug/L	<0.010	0.010	B514639				<0.010	0.010	B515379
Dissolved Chromium (Cr)	ug/L	1.2	1.0	B514639				<1.0	1.0	B515379
Dissolved Cobalt (Co)	ug/L	<0.20	0.20	B514639				<0.20	0.20	B515379
Dissolved Copper (Cu)	ug/L	0.68	0.20	B514639				0.56	0.20	B515379
Dissolved Iron (Fe)	ug/L	38.0	5.0	B514639				7.2	5.0	B515379
Dissolved Lead (Pb)	ug/L	<0.20	0.20	B514639				<0.20	0.20	B515379
Dissolved Lithium (Li)	ug/L	<2.0	2.0	B514639				<2.0	2.0	B515379
Dissolved Manganese (Mn)	ug/L	2.2	1.0	B514639				1.0	1.0	B515379
Dissolved Molybdenum (Mo)	ug/L	<1.0	1.0	B514639				<1.0	1.0	B515379
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	B514639				<1.0	1.0	B515379
Dissolved Selenium (Se)	ug/L	<0.10	0.10	B514639				<0.10	0.10	B515379
Dissolved Silver (Ag)	ug/L	<0.020	0.020	B514639				<0.020	0.020	B515379
Dissolved Strontium (Sr)	ug/L	215	1.0	B514639				220	1.0	B515379
Dissolved Thallium (Tl)	ug/L	<0.010	0.010	B514639				<0.010	0.010	B515379
Dissolved Tin (Sn)	ug/L	<5.0	5.0	B514639				<5.0	5.0	B515379
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	B514639				<5.0	5.0	B515379
Dissolved Uranium (U)	ug/L	0.16	0.10	B514639				0.16	0.10	B515379
Dissolved Vanadium (V)	ug/L	<5.0	5.0	B514639				<5.0	5.0	B515379
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	B514639				<5.0	5.0	B515379
Dissolved Calcium (Ca)	mg/L	31.1	0.050	B513793				31.9	0.050	B513793
Dissolved Magnesium (Mg)	mg/L	16.3	0.050	B513793				17.2	0.050	B513793
Dissolved Potassium (K)	mg/L	0.475	0.050	B513793				0.478	0.050	B513793
Dissolved Sodium (Na)	mg/L	9.72	0.050	B513793				10.2	0.050	B513793
Dissolved Sulphur (S)	mg/L	<3.0	3.0	B513793				<3.0	3.0	B513793

RDL = Reportable Detection Limit

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Bureau Veritas Job #: C471255
Report Date: 2024/09/18

SLR CONSULTING (CANADA) LTD
Client Project #: 201.V24219.00000
Site Location: TENAS
Sampler Initials: G

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CVD652			CVD653			CVD654		
Sampling Date		2024/09/06 15:16			2024/09/06 15:46			2024/09/06 15:55		
COC Number		C#733646-01-01			C#733646-01-01			C#733646-01-01		
	UNITS	**SITE 2 S**	**RDL**	**QC Batch**	**SITE 2 D**	**RDL**	**QC Batch**	**SITE 2 SW**	**RDL**	**QC Batch**
Total Metals by ICPMS										
Total Aluminum (Al)	ug/L	70.7	3.0	B514778	562	3.0	B514778	16.9	3.0	B514778
Total Antimony (Sb)	ug/L	<0.50	0.50	B514778	2.16	0.50	B514778	<0.50	0.50	B514778
Total Arsenic (As)	ug/L	0.54	0.10	B514778	2.50	0.10	B514778	0.50	0.10	B514778
Total Barium (Ba)	ug/L	112	1.0	B514778	155	1.0	B514778	109	1.0	B514778
Total Beryllium (Be)	ug/L	<0.10	0.10	B514778	<0.10	0.10	B514778	<0.10	0.10	B514778
Total Bismuth (Bi)	ug/L	<1.0	1.0	B514778	2.5	1.0	B514778	<1.0	1.0	B514778
Total Boron (B)	ug/L	<50	50	B514778	76	50	B514778	<50	50	B514778
Total Cadmium (Cd)	ug/L	<0.010	0.010	B514778	0.258	0.010	B514778	<0.010	0.010	B514778
Total Chromium (Cr)	ug/L	<1.0	1.0	B514778	39.8	1.0	B514778	<1.0	1.0	B514778
Total Cobalt (Co)	ug/L	<0.20	0.20	B514778	3.79	0.20	B514778	<0.20	0.20	B514778
Total Copper (Cu)	ug/L	0.69	0.50	B514778	117	0.50	B514778	0.60	0.50	B514778
Total Iron (Fe)	ug/L	90	10	B514778	4870	10	B514778	10	10	B514778
Total Lead (Pb)	ug/L	<0.20	0.20	B514778	58.8	0.20	B514778	<0.20	0.20	B514778
Total Lithium (Li)	ug/L	<2.0	2.0	B514778	2.2	2.0	B514778	<2.0	2.0	B514778
Total Manganese (Mn)	ug/L	3.9	1.0	B514778	868	1.0	B514778	1.6	1.0	B514778
Total Molybdenum (Mo)	ug/L	<1.0	1.0	B514778	2.2	1.0	B514778	<1.0	1.0	B514778
Total Nickel (Ni)	ug/L	<1.0	1.0	B514778	93.2	1.0	B514778	<1.0	1.0	B514778
Total Selenium (Se)	ug/L	<0.10	0.10	B514778	<0.10	0.10	B514778	<0.10	0.10	B514778
Total Silver (Ag)	ug/L	<0.020	0.020	B514778	0.049	0.020	B514778	<0.020	0.020	B514778
Total Strontium (Sr)	ug/L	213	1.0	B514778	152	1.0	B514778	207	1.0	B514778
Total Thallium (Tl)	ug/L	<0.010	0.010	B514778	0.011	0.010	B514778	<0.010	0.010	B514778
Total Tin (Sn)	ug/L	<5.0	5.0	B514778	<5.0	5.0	B514778	<5.0	5.0	B514778
Total Titanium (Ti)	ug/L	<5.0	5.0	B514778	11.7	5.0	B514778	<5.0	5.0	B514778
Total Uranium (U)	ug/L	0.15	0.10	B514778	0.17	0.10	B514778	0.14	0.10	B514778
Total Vanadium (V)	ug/L	<5.0	5.0	B514778	<5.0	5.0	B514778	<5.0	5.0	B514778
Total Zinc (Zn)	ug/L	<5.0	5.0	B514778	129	5.0	B514778	<5.0	5.0	B514778
Total Calcium (Ca)	mg/L	28.5	0.050	B513795	20.2	0.050	B513795	29.0	0.050	B513795
Total Magnesium (Mg)	mg/L	16.0	0.050	B513795	9.59	0.050	B513795	15.8	0.050	B513795
Total Potassium (K)	mg/L	0.456	0.050	B513795	2.16	0.050	B513795	0.444	0.050	B513795
Total Sodium (Na)	mg/L	9.85	0.050	B513795	10.2	0.050	B513795	9.51	0.050	B513795
Total Sulphur (S)	mg/L	<3.0	3.0	B513795	<3.0	3.0	B513795	<3.0	3.0	B513795
RDL = Reportable Detection Limit										

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CVD655		
Sampling Date		2024/09/06 10:08		
COC Number		C#733646-01-01		
	UNITS	**TOB96-02-06**	**RDL**	**QC Batch**
Dissolved Metals by ICPMS				
Dissolved Aluminum (Al)	ug/L	<3.0	3.0	B515379
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	B515379
Dissolved Arsenic (As)	ug/L	0.17	0.10	B515379
Dissolved Barium (Ba)	ug/L	118	1.0	B515379
Dissolved Beryllium (Be)	ug/L	<0.10	0.10	B515379
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	B515379
Dissolved Boron (B)	ug/L	<50	50	B515379
Dissolved Cadmium (Cd)	ug/L	<0.010	0.010	B515379
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	B515379
Dissolved Cobalt (Co)	ug/L	<0.20	0.20	B515379
Dissolved Copper (Cu)	ug/L	0.63	0.20	B515379
Dissolved Iron (Fe)	ug/L	<5.0	5.0	B515379
Dissolved Lead (Pb)	ug/L	<0.20	0.20	B515379
Dissolved Lithium (Li)	ug/L	3.5	2.0	B515379
Dissolved Manganese (Mn)	ug/L	<1.0	1.0	B515379
Dissolved Molybdenum (Mo)	ug/L	1.1	1.0	B515379
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	B515379
Dissolved Selenium (Se)	ug/L	0.37	0.10	B515379
Dissolved Silver (Ag)	ug/L	<0.020	0.020	B515379
Dissolved Strontium (Sr)	ug/L	429	1.0	B515379
Dissolved Thallium (Tl)	ug/L	<0.010	0.010	B515379
Dissolved Tin (Sn)	ug/L	<5.0	5.0	B515379
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	B515379
Dissolved Uranium (U)	ug/L	1.64	0.10	B515379
Dissolved Vanadium (V)	ug/L	<5.0	5.0	B515379
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	B515379
Dissolved Calcium (Ca)	mg/L	77.3	0.050	B525949
Dissolved Magnesium (Mg)	mg/L	22.8	0.050	B525949
Dissolved Potassium (K)	mg/L	0.989	0.050	B525949
Dissolved Sodium (Na)	mg/L	13.5	0.050	B525949
Dissolved Sulphur (S)	mg/L	8.4	3.0	B525949
RDL = Reportable Detection Limit				

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ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CVD655		
Sampling Date		2024/09/06 10:08		
COC Number		C#733646-01-01		
	UNITS	**TOB96-02-06**	**RDL**	**QC Batch**
Total Metals by ICPMS				
Total Aluminum (Al)	ug/L	5290	3.0	B514778
Total Antimony (Sb)	ug/L	0.85	0.50	B514778
Total Arsenic (As)	ug/L	2.61	0.10	B514778
Total Barium (Ba)	ug/L	411	1.0	B514778
Total Beryllium (Be)	ug/L	0.92	0.10	B514778
Total Bismuth (Bi)	ug/L	<1.0	1.0	B514778
Total Boron (B)	ug/L	<50	50	B514778
Total Cadmium (Cd)	ug/L	0.572	0.010	B514778
Total Chromium (Cr)	ug/L	2.8	1.0	B514778
Total Cobalt (Co)	ug/L	6.07	0.20	B514778
Total Copper (Cu)	ug/L	10.6	0.50	B514778
Total Iron (Fe)	ug/L	5330	10	B514778
Total Lead (Pb)	ug/L	18.4	0.20	B514778
Total Lithium (Li)	ug/L	6.7	2.0	B514778
Total Manganese (Mn)	ug/L	2060	1.0	B514778
Total Molybdenum (Mo)	ug/L	<1.0	1.0	B514778
Total Nickel (Ni)	ug/L	11.4	1.0	B514778
Total Selenium (Se)	ug/L	0.57	0.10	B514778
Total Silver (Ag)	ug/L	0.118	0.020	B514778
Total Strontium (Sr)	ug/L	502	1.0	B514778
Total Thallium (Tl)	ug/L	0.089	0.010	B514778
Total Tin (Sn)	ug/L	<5.0	5.0	B514778
Total Titanium (Ti)	ug/L	67.5	5.0	B514778
Total Uranium (U)	ug/L	3.83	0.10	B514778
Total Vanadium (V)	ug/L	6.3	5.0	B514778
Total Zinc (Zn)	ug/L	38.8	5.0	B514778
Total Calcium (Ca)	mg/L	95.7	0.050	B513795
Total Magnesium (Mg)	mg/L	26.7	0.050	B513795
Total Potassium (K)	mg/L	1.90	0.050	B513795
Total Sodium (Na)	mg/L	11.0	0.050	B513795
Total Sulphur (S)	mg/L	5.8	3.0	B513795
RDL = Reportable Detection Limit				

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	9.0°C
Package 2	13.0°C
Package 3	9.3°C

Sample CVD646 [SITE 4 U S] : Sample received past method specified hold time for Nitrate + Nitrite (N). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample received past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Color (True) by Automated Analyzer. Sample received past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Sample was analyzed past method specified hold time for Nitrite (N) Regular Level Water.

Sample CVD647 [SITE 4 U SW] : Sample received past method specified hold time for Nitrate + Nitrite (N). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample received past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Color (True) by Automated Analyzer. Sample received past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Sample was analyzed past method specified hold time for Nitrite (N) Regular Level Water.

Sample CVD648 [SITE 4 U D] : Sample received past method specified hold time for Nitrate + Nitrite (N). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample received past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Sample was analyzed past method specified hold time for Nitrite (N) Regular Level Water.

Sample CVD649 [SITE 5 S] : Sample received past method specified hold time for Nitrate + Nitrite (N). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample received past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Color (True) by Automated Analyzer. Sample received past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Sample was analyzed past method specified hold time for Nitrite (N) Regular Level Water.

Sample CVD650 [SITE 5 D] : Sample received past method specified hold time for Nitrate + Nitrite (N). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample received past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Sample was analyzed past method specified hold time for Nitrite (N) Regular Level Water.

Sample CVD651 [SITE 5 SW] : Sample received past method specified hold time for Nitrate + Nitrite (N). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample received past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Color (True) by Automated Analyzer. Sample received past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Sample was analyzed past method specified hold time for Nitrite (N) Regular Level Water.

Sample CVD652 [SITE 2 S] : Sample received past method specified hold time for Nitrate + Nitrite (N). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample received past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Color (True) by Automated Analyzer. Sample received past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Sample was analyzed past method specified hold time for Nitrite (N) Regular Level Water.

Sample CVD653 [SITE 2 D] : Sample received past method specified hold time for Nitrate + Nitrite (N). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample received past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for

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Nitrate + Nitrite (N). Sample was analyzed past method specified hold time for Nitrite (N) Regular Level Water.

Sample CVD654 [SITE 2 SW] : Sample received past method specified hold time for Nitrate + Nitrite (N). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample received past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Color (True) by Automated Analyzer. Sample received past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Sample was analyzed past method specified hold time for Nitrite (N) Regular Level Water.

Sample CVD655 [TOB96-02-06] : Sample received past method specified hold time for Nitrate + Nitrite (N). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample received past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Color (True) by Automated Analyzer. Sample received past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Sample was analyzed past method specified hold time for Nitrite (N) Regular Level Water.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B514390	Alkalinity (PP as CaCO3)	2024/09/12					<1.0	mg/L	NC	20
B514390	Alkalinity (Total as CaCO3)	2024/09/12			98	80 - 120	<1.0	mg/L	0.44	20
B514390	Bicarbonate (HCO3)	2024/09/12					<1.0	mg/L	0.44	20
B514390	Carbonate (CO3)	2024/09/12					<1.0	mg/L	NC	20
B514390	Hydroxide (OH)	2024/09/12					<1.0	mg/L	NC	20
B514396	Conductivity	2024/09/12			100	90 - 110	<2.0	uS/cm	0.11	10
B514401	pH	2024/09/12			100	97 - 103			0.43	N/A
B514405	Nitrate plus Nitrite (N)	2024/09/12	120	80 - 120	110	80 - 120	<0.020	mg/L	NC	25
B514406	Nitrite (N)	2024/09/12	113	80 - 120	104	80 - 120	<0.0050	mg/L	NC	20
B514414	Alkalinity (PP as CaCO3)	2024/09/12					<1.0	mg/L	NC	20
B514414	Alkalinity (Total as CaCO3)	2024/09/12			99	80 - 120	<1.0	mg/L	0.063	20
B514414	Bicarbonate (HCO3)	2024/09/12					<1.0	mg/L	0.063	20
B514414	Carbonate (CO3)	2024/09/12					<1.0	mg/L	NC	20
B514414	Hydroxide (OH)	2024/09/12					<1.0	mg/L	NC	20
B514427	pH	2024/09/12			100	97 - 103			0.24	N/A
B514431	Conductivity	2024/09/12			100	90 - 110	<2.0	uS/cm	0.16	10
B514522	Turbidity	2024/09/12			102	80 - 120	<0.10	NTU	5.7	20
B514538	Total Dissolved Solids	2024/09/13	101	80 - 120	102	80 - 120	<10	mg/L	4.3	20
B514544	pH	2024/09/13			100	97 - 103			0.24	N/A
B514550	Alkalinity (PP as CaCO3)	2024/09/13					<1.0	mg/L	NC	20
B514550	Alkalinity (Total as CaCO3)	2024/09/13			94	80 - 120	<1.0	mg/L	0.30	20
B514550	Bicarbonate (HCO3)	2024/09/13					<1.0	mg/L	0.30	20
B514550	Carbonate (CO3)	2024/09/13					<1.0	mg/L	NC	20
B514550	Hydroxide (OH)	2024/09/13					<1.0	mg/L	NC	20
B514557	Conductivity	2024/09/13			100	90 - 110	<2.0	uS/cm	0	10
B514639	Dissolved Aluminum (Al)	2024/09/13	98	80 - 120	103	80 - 120	<3.0	ug/L	14	20
B514639	Dissolved Antimony (Sb)	2024/09/13	99	80 - 120	101	80 - 120	<0.50	ug/L	NC	20
B514639	Dissolved Arsenic (As)	2024/09/13	103	80 - 120	102	80 - 120	<0.10	ug/L	2.4	20
B514639	Dissolved Barium (Ba)	2024/09/13	NC	80 - 120	100	80 - 120	<1.0	ug/L	1.1	20
B514639	Dissolved Beryllium (Be)	2024/09/13	97	80 - 120	98	80 - 120	<0.10	ug/L	NC	20
B514639	Dissolved Bismuth (Bi)	2024/09/13	95	80 - 120	99	80 - 120	<1.0	ug/L	NC	20
B514639	Dissolved Boron (B)	2024/09/13	102	80 - 120	102	80 - 120	<50	ug/L	NC	20

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B514639	Dissolved Cadmium (Cd)	2024/09/13	101	80 - 120	102	80 - 120	<0.010	ug/L	NC	20
B514639	Dissolved Chromium (Cr)	2024/09/13	90	80 - 120	95	80 - 120	<1.0	ug/L	17	20
B514639	Dissolved Cobalt (Co)	2024/09/13	93	80 - 120	97	80 - 120	<0.20	ug/L	NC	20
B514639	Dissolved Copper (Cu)	2024/09/13	90	80 - 120	95	80 - 120	<0.20	ug/L	4.7	20
B514639	Dissolved Iron (Fe)	2024/09/13	98	80 - 120	101	80 - 120	<5.0	ug/L	8.3	20
B514639	Dissolved Lead (Pb)	2024/09/13	95	80 - 120	99	80 - 120	<0.20	ug/L	NC	20
B514639	Dissolved Lithium (Li)	2024/09/13	95	80 - 120	97	80 - 120	<2.0	ug/L	NC	20
B514639	Dissolved Manganese (Mn)	2024/09/13	96	80 - 120	100	80 - 120	<1.0	ug/L	6.3	20
B514639	Dissolved Molybdenum (Mo)	2024/09/13	107	80 - 120	104	80 - 120	<1.0	ug/L	NC	20
B514639	Dissolved Nickel (Ni)	2024/09/13	93	80 - 120	99	80 - 120	<1.0	ug/L	NC	20
B514639	Dissolved Selenium (Se)	2024/09/13	104	80 - 120	99	80 - 120	<0.10	ug/L	NC	20
B514639	Dissolved Silver (Ag)	2024/09/13	101	80 - 120	99	80 - 120	<0.020	ug/L	NC	20
B514639	Dissolved Strontium (Sr)	2024/09/13	NC	80 - 120	94	80 - 120	<1.0	ug/L	3.5	20
B514639	Dissolved Thallium (Tl)	2024/09/13	98	80 - 120	99	80 - 120	<0.010	ug/L	NC	20
B514639	Dissolved Tin (Sn)	2024/09/13	103	80 - 120	102	80 - 120	<5.0	ug/L	NC	20
B514639	Dissolved Titanium (Ti)	2024/09/13	101	80 - 120	103	80 - 120	<5.0	ug/L	NC	20
B514639	Dissolved Uranium (U)	2024/09/13	99	80 - 120	100	80 - 120	<0.10	ug/L	2.4	20
B514639	Dissolved Vanadium (V)	2024/09/13	96	80 - 120	97	80 - 120	<5.0	ug/L	NC	20
B514639	Dissolved Zinc (Zn)	2024/09/13	100	80 - 120	107	80 - 120	<5.0	ug/L	NC	20
B514731	True Colour	2024/09/12			97	80 - 120	<2.0	Col. Unit	7.4	20
B514752	Orthophosphate (P)	2024/09/12	81	80 - 120	92	80 - 120	<0.0030	mg/L	NC	20
B514762	Total Aluminum (Al)	2024/09/14	108	80 - 120	103	80 - 120	<3.0	ug/L		
B514762	Total Antimony (Sb)	2024/09/14	107	80 - 120	103	80 - 120	<0.50	ug/L		
B514762	Total Arsenic (As)	2024/09/14	NC	80 - 120	106	80 - 120	<0.10	ug/L	0.74	20
B514762	Total Barium (Ba)	2024/09/14	NC	80 - 120	103	80 - 120	<1.0	ug/L		
B514762	Total Beryllium (Be)	2024/09/14	105	80 - 120	107	80 - 120	<0.10	ug/L		
B514762	Total Bismuth (Bi)	2024/09/14	32 (1)	80 - 120	102	80 - 120	<1.0	ug/L		
B514762	Total Boron (B)	2024/09/14	104	80 - 120	114	80 - 120	<50	ug/L		
B514762	Total Cadmium (Cd)	2024/09/14	104	80 - 120	105	80 - 120	<0.010	ug/L		
B514762	Total Chromium (Cr)	2024/09/14	97	80 - 120	101	80 - 120	<1.0	ug/L		
B514762	Total Cobalt (Co)	2024/09/14	91	80 - 120	101	80 - 120	<0.20	ug/L		
B514762	Total Copper (Cu)	2024/09/14	68 (1)	80 - 120	99	80 - 120	<0.50	ug/L	NC	20

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B514762	Total Iron (Fe)	2024/09/14	115	80 - 120	104	80 - 120	<10	ug/L		
B514762	Total Lead (Pb)	2024/09/14	94	80 - 120	101	80 - 120	<0.20	ug/L	6.7	20
B514762	Total Lithium (Li)	2024/09/14	102	80 - 120	107	80 - 120	<2.0	ug/L		
B514762	Total Manganese (Mn)	2024/09/14	NC	80 - 120	105	80 - 120	<1.0	ug/L		
B514762	Total Molybdenum (Mo)	2024/09/14	NC	80 - 120	108	80 - 120	<1.0	ug/L		
B514762	Total Nickel (Ni)	2024/09/14	91	80 - 120	103	80 - 120	<1.0	ug/L	3.5	20
B514762	Total Selenium (Se)	2024/09/14	6.0 (1)	80 - 120	108	80 - 120	<0.10	ug/L		
B514762	Total Silver (Ag)	2024/09/14	40 (1)	80 - 120	104	80 - 120	<0.020	ug/L		
B514762	Total Strontium (Sr)	2024/09/14	NC	80 - 120	98	80 - 120	<1.0	ug/L		
B514762	Total Thallium (Tl)	2024/09/14	103	80 - 120	104	80 - 120	<0.010	ug/L		
B514762	Total Tin (Sn)	2024/09/14	104	80 - 120	104	80 - 120	<5.0	ug/L		
B514762	Total Titanium (Ti)	2024/09/14	109	80 - 120	107	80 - 120	<5.0	ug/L		
B514762	Total Uranium (U)	2024/09/14	106	80 - 120	108	80 - 120	<0.10	ug/L		
B514762	Total Vanadium (V)	2024/09/14	99	80 - 120	101	80 - 120	<5.0	ug/L		
B514762	Total Zinc (Zn)	2024/09/14	NC	80 - 120	106	80 - 120	<5.0	ug/L	1.3	20
B514778	Total Aluminum (Al)	2024/09/14	106	80 - 120	110	80 - 120	<3.0	ug/L	1.6	20
B514778	Total Antimony (Sb)	2024/09/14	105	80 - 120	105	80 - 120	<0.50	ug/L	NC	20
B514778	Total Arsenic (As)	2024/09/14	107	80 - 120	107	80 - 120	<0.10	ug/L	2.0	20
B514778	Total Barium (Ba)	2024/09/14	NC	80 - 120	103	80 - 120	<1.0	ug/L	3.1	20
B514778	Total Beryllium (Be)	2024/09/14	111	80 - 120	111	80 - 120	<0.10	ug/L	NC	20
B514778	Total Bismuth (Bi)	2024/09/14	100	80 - 120	105	80 - 120	<1.0	ug/L	NC	20
B514778	Total Boron (B)	2024/09/14	112	80 - 120	118	80 - 120	<50	ug/L	NC	20
B514778	Total Cadmium (Cd)	2024/09/14	103	80 - 120	105	80 - 120	<0.010	ug/L	NC	20
B514778	Total Chromium (Cr)	2024/09/14	97	80 - 120	100	80 - 120	<1.0	ug/L	NC	20
B514778	Total Cobalt (Co)	2024/09/14	95	80 - 120	102	80 - 120	<0.20	ug/L	NC	20
B514778	Total Copper (Cu)	2024/09/14	91	80 - 120	99	80 - 120	<0.50	ug/L	NC	20
B514778	Total Iron (Fe)	2024/09/14	104	80 - 120	105	80 - 120	<10	ug/L	NC	20
B514778	Total Lead (Pb)	2024/09/14	97	80 - 120	101	80 - 120	<0.20	ug/L	NC	20
B514778	Total Lithium (Li)	2024/09/14	107	80 - 120	109	80 - 120	<2.0	ug/L	NC	20
B514778	Total Manganese (Mn)	2024/09/14	100	80 - 120	104	80 - 120	<1.0	ug/L	NC	20
B514778	Total Molybdenum (Mo)	2024/09/14	106	80 - 120	108	80 - 120	<1.0	ug/L	NC	20
B514778	Total Nickel (Ni)	2024/09/14	95	80 - 120	103	80 - 120	<1.0	ug/L	NC	20

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B514778	Total Selenium (Se)	2024/09/14	106	80 - 120	107	80 - 120	<0.10	ug/L	NC	20
B514778	Total Silver (Ag)	2024/09/14	102	80 - 120	104	80 - 120	<0.020	ug/L	NC	20
B514778	Total Strontium (Sr)	2024/09/14	NC	80 - 120	99	80 - 120	<1.0	ug/L	2.3	20
B514778	Total Thallium (Tl)	2024/09/14	103	80 - 120	107	80 - 120	<0.010	ug/L	NC	20
B514778	Total Tin (Sn)	2024/09/14	104	80 - 120	105	80 - 120	<5.0	ug/L	NC	20
B514778	Total Titanium (Ti)	2024/09/14	104	80 - 120	107	80 - 120	<5.0	ug/L	NC	20
B514778	Total Uranium (U)	2024/09/14	107	80 - 120	107	80 - 120	<0.10	ug/L	2.2	20
B514778	Total Vanadium (V)	2024/09/14	99	80 - 120	101	80 - 120	<5.0	ug/L	NC	20
B514778	Total Zinc (Zn)	2024/09/14	99	80 - 120	105	80 - 120	<5.0	ug/L	NC	20
B514806	Total Suspended Solids	2024/09/13	111	80 - 120	98	80 - 120	<1.0	mg/L	NC	20
B515379	Dissolved Aluminum (Al)	2024/09/13	97	80 - 120	112	80 - 120	<3.0	ug/L	4.3	20
B515379	Dissolved Antimony (Sb)	2024/09/13	99	80 - 120	100	80 - 120	<0.50	ug/L	NC	20
B515379	Dissolved Arsenic (As)	2024/09/13	105	80 - 120	103	80 - 120	<0.10	ug/L	1.8	20
B515379	Dissolved Barium (Ba)	2024/09/13	NC	80 - 120	100	80 - 120	<1.0	ug/L	0.38	20
B515379	Dissolved Beryllium (Be)	2024/09/13	95	80 - 120	108	80 - 120	<0.10	ug/L	NC	20
B515379	Dissolved Bismuth (Bi)	2024/09/13	94	80 - 120	101	80 - 120	<1.0	ug/L	NC	20
B515379	Dissolved Boron (B)	2024/09/13	101	80 - 120	112	80 - 120	<50	ug/L	NC	20
B515379	Dissolved Cadmium (Cd)	2024/09/13	100	80 - 120	101	80 - 120	<0.010	ug/L	NC	20
B515379	Dissolved Chromium (Cr)	2024/09/13	92	80 - 120	95	80 - 120	<1.0	ug/L	NC	20
B515379	Dissolved Cobalt (Co)	2024/09/13	95	80 - 120	97	80 - 120	<0.20	ug/L	NC	20
B515379	Dissolved Copper (Cu)	2024/09/13	89	80 - 120	95	80 - 120	<0.20	ug/L	2.6	20
B515379	Dissolved Iron (Fe)	2024/09/13	98	80 - 120	105	80 - 120	<5.0	ug/L	2.3	20
B515379	Dissolved Lead (Pb)	2024/09/13	95	80 - 120	100	80 - 120	<0.20	ug/L	NC	20
B515379	Dissolved Lithium (Li)	2024/09/13	93	80 - 120	101	80 - 120	<2.0	ug/L	NC	20
B515379	Dissolved Manganese (Mn)	2024/09/13	91	80 - 120	101	80 - 120	<1.0	ug/L	1.0	20
B515379	Dissolved Molybdenum (Mo)	2024/09/13	102	80 - 120	102	80 - 120	<1.0	ug/L	NC	20
B515379	Dissolved Nickel (Ni)	2024/09/13	92	80 - 120	99	80 - 120	<1.0	ug/L	NC	20
B515379	Dissolved Selenium (Se)	2024/09/13	99	80 - 120	103	80 - 120	<0.10	ug/L	NC	20
B515379	Dissolved Silver (Ag)	2024/09/13	98	80 - 120	99	80 - 120	<0.020	ug/L	NC	20
B515379	Dissolved Strontium (Sr)	2024/09/13	NC	80 - 120	96	80 - 120	<1.0	ug/L	0.36	20
B515379	Dissolved Thallium (Tl)	2024/09/13	97	80 - 120	102	80 - 120	<0.010	ug/L	NC	20
B515379	Dissolved Tin (Sn)	2024/09/13	100	80 - 120	102	80 - 120	<5.0	ug/L	NC	20

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B515379	Dissolved Titanium (Ti)	2024/09/13	100	80 - 120	102	80 - 120	<5.0	ug/L	NC	20
B515379	Dissolved Uranium (U)	2024/09/13	105	80 - 120	106	80 - 120	<0.10	ug/L	0.062	20
B515379	Dissolved Vanadium (V)	2024/09/13	95	80 - 120	98	80 - 120	<5.0	ug/L	NC	20
B515379	Dissolved Zinc (Zn)	2024/09/13	98	80 - 120	108	80 - 120	<5.0	ug/L	NC	20
B515656	Dissolved Fluoride (F)	2024/09/13	276 (1)	80 - 120	101	80 - 120	<0.050	mg/L	NC	20
B515658	Dissolved Mercury (Hg)	2024/09/13	99	80 - 120	95	80 - 120	<0.0019	ug/L	1.9	20
B515761	Total Phosphorus (P)	2024/09/13	NC	N/A	106	80 - 120	<0.0030	mg/L	0.29	20
B515765	Total Phosphorus (P)	2024/09/13	91	N/A	108	80 - 120	<0.0030	mg/L	NC	20
B515813	Total Mercury (Hg)	2024/09/13	98	80 - 120	92	80 - 120	<0.0019	ug/L	NC	20
B515814	Chloride (Cl)	2024/09/13	101	80 - 120	102	80 - 120	<1.0	mg/L	NC	20
B515814	Sulphate (SO4)	2024/09/13	NC	80 - 120	102	80 - 120	<1.0	mg/L	1.2	20
B516001	Chloride (Cl)	2024/09/13	102	80 - 120	96	80 - 120	<1.0	mg/L	4.0	20
B516001	Sulphate (SO4)	2024/09/13	97	80 - 120	101	80 - 120	<1.0	mg/L	4.1	20
B516146	Total Suspended Solids	2024/09/16	105	80 - 120	100	80 - 120	<1.0	mg/L	NC	20
B516346	Dissolved Organic Carbon (C)	2024/09/13	103	80 - 120	99	80 - 120	<0.50	mg/L	6.9	20
B516565	Total Organic Carbon (C)	2024/09/14	103	80 - 120	100	80 - 120	<0.50	mg/L	8.1	20
B518512	Total Nitrogen (N)	2024/09/17	82	80 - 120	108	80 - 120	<0.020	mg/L	1.6	20
B518800	Acidity (pH 4.5)	2024/09/16					<1.0	mg/L	NC	20
B518800	Acidity (pH 8.3)	2024/09/16			99	80 - 120	<1.0	mg/L	NC	20
B519177	Total Ammonia (N)	2024/09/16	97	80 - 120	109	80 - 120	<0.015	mg/L		
B519408	Dissolved Organic Carbon (C)	2024/09/17			100	80 - 120	<0.50	mg/L	0.21 (2)	20
B522355	Phenols	2024/09/17	95	80 - 120	95	80 - 120	<0.0015	mg/L	NC	20

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B525529	Strong Acid Dissoc. Cyanide (CN)	2024/09/18	103	80 - 120	105	80 - 120	<0.00050	mg/L	NC	20

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(2) DOC higher than TOC, sample rerun to confirm data

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics



Mauro Oselin, P.Chem., QP, Scientific Specialist

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Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Raphael Kwan, General Manager, BC and Yukon Regions responsible for British Columbia Environmental laboratory operations.

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

C471255
2024/09/11 10:55

Bureau Veritas
4606 Canada Way, Burnaby, British Columbia Canada V5G 1K5 Tel:(604) 734 7276 Toll-free:800-563-6266 Fax:(604) 731 2386 www.bvna.com

Chain Of Custody Record

INVOICE TO:		Report Information		Project Information		Laboratory Use Only	
Company Name	#1776 SLR CONSULTING (CANADA) LTD	Company Name	SLR CONSULTING	Quotation #	C40429	Bureau Veritas Job #	Bottle Order #: 733646
Contact Name	Nathalie Brandebourger	Contact Name	Nathalie Brandebourger	P.O. #			
Address	#200 - 887 Great Northern Way	Address	887 GREAT NOTHERN WAY	Project #	201.V24219.00000		
	VANCOUVER BC V5T 4T5		SUITE 200, VANCOUVER,	Project Name	TENAS	Chain Of Custody Record	Project Manager
Phone	(604) 738-2500 Fax: (604) 738-2542	Phone	BC Fax:	Site #		C#733646-01-01	Nahed Amer
Email	nathalie.brandebourger@pecg.ca	Email	nathalie.brandebourger@pecg.ca	Sampled By	GLENN + BECKS		

Regulatory Criteria: ☐ CSR ☐ CCME ☐ BC Water Quality ☐ Other _____

Special Instructions

MVAN-2024-09-595

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

Regular (Standard) TAT: ☑
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests..
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (If applies to entire submission)
1 DAY ☐ 2 Day ☐ 3 Day ☐ Date Required: _____ ☐
Rush Confirmation Number: _____ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered ? (Y / N)	Color (True) by Automated Analyzer	Conductivity @25C	pH @25°C	Total Suspended Solids (NFR)	Total Dissolved Solids (Filt. Residue)	Turbidity	Acidity pH 4.5 & pH 8.3 (as CaCO3)	Alkalinity @25C (pp, total), CO3,HCO3,OH	Ammonia-N (Total)	Total Kjeldahl Nitrogen (Total), Nitrate, Nitrite	# of Bottles	Comments
1	TENAS FOUR CREEK	SITE 4 U S	2024-09-05	14:30	GW	Y	X	X	X	X	X	X	X	X	X	X	12	GROUNDWATER
2	TENAS FOUR CREEK	SITE 4 U SW	2024-09-05	15:03	SW	Y	X	X	X	X	X	X	X	X	X	X	12	SURFACE WATER
3	TENAS FOUR CREEK	SITE 4 U D	2024-09-05	15:40	GW	Y	X	X	X	X	X	X	X	X	X	X	2	GROUNDWATER ~100 ml METALS ~100ml GEN CHEM
4	TENAS FOUR CREEK	SITE 5 S	2024-09-06	12:59	GW	Y	X	X	X	X	X	X	X	X	X	X	12	GROUNDWATER
5	TENAS FOUR CREEK	SITE 5 D	2024-09-06	12:32	GW	Y	X	X	X	X	X	X	X	X	X	X	2	GROUNDWATER ~200ml GEN CHEM + ~500ml TOTAL METALS
6	TENAS FOUR CREEK	SITE 5 SW	2024-09-06	13:50	SW	Y	X	X	X	X	X	X	X	X	X	X	12	SURFACE WATER
7	TENAS FOUR CREEK	SITE 2 S	2024-09-06	15:16	GW	Y	X	X	X	X	X	X	X	X	X	X	12	GROUNDWATER
8	TENAS FOUR CREEK	SITE 2 D	2024-09-06	15:46	GW	Y	X	X	X	X	X	X	X	X	X	X	2	GROUNDWATER ~100ml TOTAL METAL ~200ml + GEN CHEM
9	TENAS FOUR CREEK	SITE 2 SW	2024-09-06	15:55	SW	Y	X	X	X	X	X	X	X	X	X	X	12	SURFACE WATER
10	TENAS FOUR CREEK	TOB96-02-06	2024-09-06	10:08	GW	Y	X	X	X	X	X	X	X	X	X	X	10	GROUNDWATER

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Lab Use Only: Time Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
REBECCA BRADFORD	24/09/09	08:30	Maria Zamora	2024/09/11	10:55		☐	9/9/9	☐ Yes ☒ No

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COC-TERMS-AND-CONDITIONS.

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13/13/13
10/9/19
LAB FRIDGE FROZEN

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2024/09/11 10:55

Bureau Veritas
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Chain Of Custody Record

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Company Name	#1776 SLR CONSULTING (CANADA) LTD	Company Name	SLR CONSULTING	Quotation #	C40429	Bureau Veritas Job #	Bottle Order #: 733646
Contact Name	Nathalie Brandebourger	Contact Name	Nathalie Brandebourger	P.O. #			
Address	#200 - 887 Great Northern Way VANCOUVER BC V5T 4T5	Address	887 GREAT NORTHERN WAY SUITE 200, VANCOUVER, BC	Project #	201.V24219.00000	Chain Of Custody Record	Project Manager
Phone	(604) 738-2500 Fax: (604) 738-2542	Phone	Fax:	Project Name	TENAS	C#733646-01-02	Nahed Amer
Email	nathalie.brandebourger@pecg.ca	Email	nathalie.brandebourger@pecg.ca	Site #			
				Sampled By	GLENN + BECKS		

Regulatory Criteria: ☐ CSR ☐ CCME ☐ BC Water Quality ☐ Other _____

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Job Specific Rush TAT (if applies to entire submission)
1 DAY ☐ 2 Day ☐ 3 Day ☐ Date Required: _____ ☐
Rush Confirmation Number: _____ (call lab for #)

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered? (Y/N)	Nitrogen (Total)	Orthophosphate by Automated Analyzer	Total Phosphorus	Fluoride	Chloride/Sulphate by Auto Colourimetry	Carbon (DOC)	Carbon (Total Organic)	Dissolved Al,Sb,As,Ba,Be,Bi,B,Cd,Cr,Co,Cu,Pb, Hardness	Dissolved Fe,Li,Mn,Hg,Mo,Ni,Se,Ag,Sr,Tl,Sn,Ti, U,V,Zn	Total Al,Sb,As,Ba,Be,Bi,B,Cd,Cr,Co,Cu,Pb, Hardness	# of Bottles	Comments
1	TENAS FOUR CREEK	SITE 4 U S	2024-09-05	14:30	GW	4	X	X	X	X	X	X	X	X	X	X	12	GROUNDWATER
2	TENAS FOUR CREEK	SITE 4 U SW	2024-09-05	15:03	SW	4	X	X	X	X	X	X	X	X	X	X	12	SURFACE WATER
3	TENAS FOUR CREEK	SITE 4 U D	2024-09-05	15:40	GW	4	X	X	X	X	X	X	X	X	X		2	GROUNDWATER ~100ml Metals ~100ml GEN CHEM
4	TENAS FOUR CREEK	SITE 5 S	2024-09-06	12:59	GW	4	X	X	X	X	X	X	X	X	X	X	12	GROUNDWATER
5	TENAS FOUR CREEK	SITE 5 D	2024-09-06	12:32	GW	4	X	X	X	X	X	X	X	X	X	X	2	GROUNDWATER ~200ml GEN CHEM ~50ML TOTAL METALS
6	TENAS FOUR CREEK	SITE 5 SW	2024-09-06	13:50	SW	4	X	X	X	X	X	X	X	X	X	X	12	SURFACE WATER
7	TENAS FOUR CREEK	SITE 2 S	2024-09-06	15:16	GW	4	X	X	X	X	X	X	X	X	X	X	12	GROUNDWATER
8	TENAS FOUR CREEK	SITE 2 D	2024-09-06	15:46	GW	4	X	X	X	X	X	X	X	X	X	X	2	GROUNDWATER ~100ml TOTAL METAL ~200ml GEN CHEM
9	TENAS FOUR CREEK	SITE 2 SW	2024-09-06	15:55	SW	4	X	X	X	X	X	X	X	X	X	X	12	SURFACE WATER
10	TENAS FOUR CREEK	TOB96-02-06	2024-09-06	10:08	GW	4	X	X	X	X	X	X	X	X	X	X	10	GROUNDWATER

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Lab Use Only: Time Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
REBECCA BRADFORD	24/09/09	09:30	Maria Zamora	2024/09/11	10:55		☐	9/9/9	☐ Yes ☒ No

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Bureau Veritas Canada (2019) Inc.

WE FROZEN 10/9/9

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2024/09/11 10:55

Bureau Veritas
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Chain Of Custody Record

INVOICE TO:		Report Information		Project Information		Laboratory Use Only	
Company Name	#1776 SLR CONSULTING (CANADA) LTD	Company Name	SLR CONSULTING	Quotation #	C40429	Bureau Veritas Job #	Bottle Order #: 733646
Contact Name	Nathalie Brandebourger	Contact Name	Nathalie Brandebourger	P.O. #			
Address	#200 - 887 Great Northern Way	Address	887 GREAT NORTHERN WAY SUITE 200, VANCOUVER, BC	Project #	201.V24219.00000		
	VANCOUVER BC V5T 4T5			Project Name	TENAS	Chain Of Custody Record	Project Manager
Phone	(604) 738-2500 Fax: (604) 738-2542	Phone	Fax:	Site #		C#733646-01-03	Nahed Amer
Email	nathalie.brandebourger@pecg.ca	Email	nathalie.brandebourger@pecg.ca	Sampled By	GLENN + BECKS		

Regulatory Criteria: ☐ CSR ☐ CCME ☐ BC Water Quality ☐ Other _____

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Job Specific Rush TAT (If applies to entire submission)
1 DAY ☐ 2 Day ☐ 3 Day ☐ Date Required: _____ ☐
Rush Confirmation Number: _____ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered ? (Y / N)	Total Fe,Li,Mn,Hg,Mo,Ni,Se,Ag,Sr,Tl,Sn,Ti,U,V,Zn	Cyanide (total)	Phenols (4-AAP)	# of Bottles	Comments
1	TENAS FOUR CREEK	SITE 4 U S	2024-09-05	14:30	GW	Y	X	X	X	12	GROUNDWATER
2	TENAS FOUR CREEK	SITE 4 U SW	2024-09-05	15:03	SW	Y	X	X	X	12	SURFACE WATER
3	TENAS FOUR CREEK	SITE 4 U D	2024-09-05	15:40	GW	Y	X	X	X	2	GROUNDWATER 100 ml Metals + 100 ml GENCHEM
4	TENAS FOUR CREEK	SITE 5 S	2024-09-06	12:59	GW	Y	X	X	X	12	GROUNDWATER
5	TENAS FOUR CREEK	SITE 5 D	2024-09-06	12:32	GW	Y	X	X	X	2	GROUNDWATER ~200ml GENCHEM + ~50ml TOTAL METAL
6	TENAS FOUR CREEK	SITE 5 SW	2024-09-06	13:50	SW	Y	X	X	X	12	SURFACE WATER
7	TENAS FOUR CREEK	SITE 2 S	2024-09-06	15:16	GW	Y	X	X	X	12	GROUNDWATER
8	TENAS FOUR CREEK	SITE 2 D	2024-09-06	15:46	GW	Y	X	X	X	2	GROUNDWATER ~ 100 ML TOTAL METAL + 200ML GENCHEM
9	TENAS FOUR CREEK	SITE 2 SW	2024-09-06	15:55	SW	Y	X	X	X	12	SURFACE WATER.
10	TENAS FOUR CREEK	TUB96-02-06	2024-09-06	10:08	GW	Y	X	X	X	10	GROUNDWATER

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Lab Use Only: Time Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
REBECCA BRADBERD	24/09/09	08:30	Blanca Zamora	2024/09/11	10:55		☐	9/9/9	☐ Yes ☒ No

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13/13/13

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Bureau Veritas Canada (2019) Inc.

ICE FROZEN 10/9/9

Your P.O. #: VAN16079
Your Project #: 201.V24219.00000
Site Location: TENAS
Your C.O.C. #: C#733646-03-01

Attention: Nathalie Brandebourger

SLR CONSULTING (CANADA) LTD
#200 - 887 Great Northern Way
VANCOUVER, BC
Canada V5T 4T5

Report Date: 2024/10/01
Report #: R3564484
Version: 5 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C472226
Received: 2024/09/13, 10:40

Sample Matrix: Water
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Acidity pH 4.5 & pH 8.3 (as CaCO3)	5	N/A	2024/09/16	BBY6SOP-00037	SM 24 2310 B m
Alkalinity @25C (pp, total), CO3,HCO3,OH	5	N/A	2024/09/14	BBY6SOP-00026	SM 24 2320 B m
Chloride/Sulphate by Auto Colourimetry	5	N/A	2024/09/16	BBY6SOP-00011 / BBY6SOP-00017	SM24-4500-Cl/SO4-E m
Cyanide (total) (1)	5	N/A	2024/09/20	CAL SOP-00270	SM 24 4500-CN m
Color (True) by Automated Analyzer	5	N/A	2024/09/13	BBY6SOP-00057	SM 24 2120 C m
Carbon (DOC) (2)	5	N/A	2024/09/18	BBY6SOP-00053	SM 24 5310 B m
Conductivity @25C	5	N/A	2024/09/14	BBY6SOP-00026	SM 24 2510 B m
Fluoride	5	N/A	2024/09/18	BBY6SOP-00037	SM 24 4500-F C m
Hardness Total (calculated as CaCO3) (3)	2	N/A	2024/09/16	BBY WI-00033	Auto Calc
Hardness Total (calculated as CaCO3) (3)	1	N/A	2024/09/17	BBY WI-00033	Auto Calc
Hardness Total (calculated as CaCO3) (3)	2	N/A	2024/09/27	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3)	3	N/A	2024/09/16	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3)	2	N/A	2024/09/20	BBY WI-00033	Auto Calc
Mercury (Dissolved) by CV (4)	5	2024/09/14	2024/09/17	BBY7SOP-00032	BCMOE LM 2023 C1.1.3
Mercury (Total) by CV	5	2024/09/17	2024/09/17	BBY7SOP-00032	BCMOE LM 2023 C1.1.3
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	3	N/A	2024/09/16	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	2	N/A	2024/09/20	BBY WI-00033	Auto Calc
Elements by CRC ICPMS (dissolved) (4)	5	N/A	2024/09/16	BBY7SOP-00002	EPA 6020b R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total)	2	2024/09/13	2024/09/16	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (total)	1	2024/09/13	2024/09/17	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (total)	2	2024/09/27	2024/09/27	BBY WI-00033	Auto Calc
Elements by CRC ICPMS (total)	3	2024/09/14	2024/09/16	BBY7SOP-00003 / BBY7SOP-00002	EPA 6020b R2 m
Elements by CRC ICPMS (total)	2	2024/09/27	2024/09/27	BBY7SOP-00003 / BBY7SOP-00002	EPA 6020b R2 m
Nitrogen (Total)	5	N/A	2024/09/19	BBY6SOP-00016	SM 24 4500-N C m
Ammonia-N (Total)	5	N/A	2024/09/19	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate + Nitrite (N)	5	N/A	2024/09/14	BBY6SOP-00010	SM 24 4500-NO3- H m
Nitrite (N) Regular Level Water	5	N/A	2024/09/14	BBY6SOP-00010	SM 24 4500-NO2- m
Nitrogen - Nitrate (as N)	2	N/A	2024/09/14	BBY WI-00033	Auto Calc
Nitrogen - Nitrate (as N)	3	N/A	2024/09/17	BBY WI-00033	Auto Calc

Your P.O. #: VAN16079
Your Project #: 201.V24219.00000
Site Location: TENAS
Your C.O.C. #: C#733646-03-01

Attention: Nathalie Brandebourger

SLR CONSULTING (CANADA) LTD
#200 - 887 Great Northern Way
VANCOUVER, BC
Canada V5T 4T5

Report Date: 2024/10/01
Report #: R3564484
Version: 5 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C472226
Received: 2024/09/13, 10:40

Sample Matrix: Water
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
pH @25°C (5)	5	N/A	2024/09/14	BBY6SOP-00026	SM 24 4500-H+ B m
Phenols (4-AAP) (1)	5	N/A	2024/09/18	AB SOP-00088	EPA 9066 R0 m
Orthophosphate by Automated Analyzer (6)	5	N/A	2024/09/13	BBY6SOP-00013	SM 24 4500-P E m
Total Dissolved Solids (Filt. Residue)	5	2024/09/16	2024/09/17	BBY6SOP-00033	SM 24 2540 C m
Total Kjeldahl Nitrogen (Total)	5	N/A	2024/09/20	BBY WI-00033	Auto Calc
Carbon (Total Organic) (7)	5	N/A	2024/09/19	BBY6SOP-00053	SM 24 5310 B m
Total Phosphorus	5	2024/09/17	2024/09/18	BBY6SOP-00013	SM 24 4500-P E m
Total Suspended Solids (NFR)	5	2024/09/16	2024/09/17	BBY6SOP-00034	SM 24 2540 D m
Turbidity	5	N/A	2024/09/13	BBY6SOP-00027	SM 24 2130 B m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Calgary, 4000 - 19 St. , Calgary, AB, T2E 6P8
(2) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.

Your P.O. #: VAN16079
Your Project #: 201.V24219.00000
Site Location: TENAS
Your C.O.C. #: C#733646-03-01

Attention: Nathalie Brandebourger

SLR CONSULTING (CANADA) LTD
#200 - 887 Great Northern Way
VANCOUVER, BC
Canada V5T 4T5

Report Date: 2024/10/01
Report #: R3564484
Version: 5 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C472226

Received: 2024/09/13, 10:40

(3) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).
(4) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(5) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas endeavours to analyze samples as soon as possible after receipt.
(6) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(7) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key



Nahed Amer
Key Account Specialist
01 Oct 2024 11:22:03

Please direct all questions regarding this Certificate of Analysis to:
Nahed Amer, Key Account Specialist
Email: Nahed.AMER@bureauveritas.com
Phone# (604) 734 7276

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Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Raphael Kwan, General Manager, BC and Yukon Regions responsible for British Columbia Environmental laboratory operations.

Bureau Veritas Job #: C472226
Report Date: 2024/10/01

SLR CONSULTING (CANADA) LTD
Client Project #: 201.V24219.00000
Site Location: TENAS
Your P.O. #: VAN16079
Sampler Initials: GH

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CVJ636		CVJ637		CVJ638		
Sampling Date		2024/09/09		2024/09/09 16:42		2024/09/09 13:40		
COC Number		C#733646-03-01		C#733646-03-01		C#733646-03-01		
	UNITS	**TRIP BLANK**	**QC Batch**	**T18-01D**	**QC Batch**	**T95R-64**	**RDL**	**QC Batch**
ANIONS								
Nitrite (N)	mg/L	<0.0050	B517403	<0.0050	B517403	<0.0050	0.0050	B516808
Calculated Parameters								
Dissolved Hardness (CaCO3)	mg/L	<0.50	B516639	11.4	B516639	55.3	0.50	B529822
Total Hardness (CaCO3)	mg/L	<0.50	B515419	11.1	B515419	51.2	0.50	B540087
Total Kjeldahl Nitrogen (Calc)	mg/L	<0.020	B515626	0.58	B515626	0.47	0.020	B515626
Nitrate (N)	mg/L	<0.020	B516645	<0.020	B516645	<0.020	0.020	B516645
Misc. Inorganics								
Conductivity	uS/cm	<2.0	B516820	1200	B516820	1300	2.0	B516820
Strong Acid Dissoc. Cyanide (CN)	mg/L	<0.00050	B529965	<0.00050	B529965	<0.00050	0.00050	B529965
Dissolved Organic Carbon (C)	mg/L	<0.50	B525368	3.1	B525368	<0.50	0.50	B525368
pH	pH	6.12	B516821	8.51	B516821	8.26	N/A	B516821
Acidity (pH 4.5)	mg/L	<1.0	B518800	<1.0	B519219	<1.0	1.0	B519219
Total Organic Carbon (C)	mg/L	<0.50	B525353	3.5	B525353	<0.50	0.50	B525353
Acidity (pH 8.3)	mg/L	<1.0	B518800	<1.0	B519219	<1.0	1.0	B519219
Total Dissolved Solids	mg/L	<10	B518446	780	B518446	780	10	B518446
Total Suspended Solids	mg/L	<1.0	B518343	8.8	B518343	2.0	1.0	B518343
Anions								
Alkalinity (PP as CaCO3)	mg/L	<1.0	B516818	34	B516818	<1.0	1.0	B516818
Alkalinity (Total as CaCO3)	mg/L	<1.0	B516818	640	B516818	740	1.0	B516818
Bicarbonate (HCO3)	mg/L	<1.0	B516818	700	B516818	910	1.0	B516818
Carbonate (CO3)	mg/L	<1.0	B516818	41	B516818	<1.0	1.0	B516818
Dissolved Fluoride (F)	mg/L	<0.050	B525229	2.4	B525229	1.6	0.050	B525229
Hydroxide (OH)	mg/L	<1.0	B516818	<1.0	B516818	<1.0	1.0	B516818
Chloride (Cl)	mg/L	<1.0	B518954	15	B518954	1.2	1.0	B518954
Sulphate (SO4)	mg/L	<1.0	B518954	25	B518954	<1.0	1.0	B518954
MISCELLANEOUS								
True Colour	Col. Unit	<2.0	B515810	18.5	B515810	2.1	2.0	B515810
Nutrients								
Total Ammonia (N)	mg/L	<0.015	B528323	0.39	B528323	0.37	0.015	B528323
Orthophosphate (P)	mg/L	<0.0030	B516618	0.0050	B516618	<0.0030	0.0030	B516618

RDL = Reportable Detection Limit
N/A = Not Applicable

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Bureau Veritas Job #: C472226
Report Date: 2024/10/01

SLR CONSULTING (CANADA) LTD
Client Project #: 201.V24219.00000
Site Location: TENAS
Your P.O. #: VAN16079
Sampler Initials: GH

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CVJ636		CVJ637		CVJ638		
Sampling Date		2024/09/09		2024/09/09 16:42		2024/09/09 13:40		
COC Number		C#733646-03-01		C#733646-03-01		C#733646-03-01		
	UNITS	**TRIP BLANK**	**QC Batch**	**T18-01D**	**QC Batch**	**T95R-64**	**RDL**	**QC Batch**
Total Phosphorus (P)	mg/L	<0.0030	B521730	0.046	B521730	0.0076	0.0030	B521730
Nitrate plus Nitrite (N)	mg/L	<0.020	B517402	<0.020	B517402	<0.020	0.020	B516806
Total Nitrogen (N)	mg/L	<0.020	B526045	0.577	B526045	0.472	0.020	B526045
Misc. Organics								
Phenols	mg/L	<0.0015	B526551	<0.0015	B526551	<0.0015	0.0015	B526551
Physical Properties								
Turbidity	NTU	<0.10	B516839	5.4	B516839	2.4	0.10	B516839
RDL = Reportable Detection Limit								

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

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SLR CONSULTING (CANADA) LTD
Client Project #: 201.V24219.00000
Site Location: TENAS
Your P.O. #: VAN16079
Sampler Initials: GH

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CVJ639		CVJ640		
Sampling Date		2024/09/09 13:40		2024/09/09 19:30		
COC Number		C#733646-03-01		C#733646-03-01		
	UNITS	**T95R-64FD**	**QC Batch**	**FIELD BLANK**	**RDL**	**QC Batch**
ANIONS						
Nitrite (N)	mg/L	<0.0050	B517403	<0.0050	0.0050	B516781
Calculated Parameters						
Dissolved Hardness (CaCO3)	mg/L	56.1	B529822	<0.50	0.50	B516639
Total Hardness (CaCO3)	mg/L	52.2	B540087	<0.50	0.50	B515419
Total Kjeldahl Nitrogen (Calc)	mg/L	0.44	B515626	0.030	0.020	B515626
Nitrate (N)	mg/L	<0.020	B516645	<0.020	0.020	B516645
Misc. Inorganics						
Conductivity	uS/cm	1300	B516820	2.8	2.0	B516820
Strong Acid Dissoc. Cyanide (CN)	mg/L	<0.00050	B529965	<0.00050	0.00050	B529965
Dissolved Organic Carbon (C)	mg/L	<0.50	B525368	<0.50	0.50	B525368
pH	pH	8.35	B516821	7.05	N/A	B516821
Acidity (pH 4.5)	mg/L	<1.0	B519219	<1.0	1.0	B519219
Total Organic Carbon (C)	mg/L	<0.50	B525353	<0.50	0.50	B525353
Acidity (pH 8.3)	mg/L	<1.0	B519219	<1.0	1.0	B519219
Total Dissolved Solids	mg/L	780	B518446	<10	10	B518446
Total Suspended Solids	mg/L	<1.0	B518343	<1.0	1.0	B518343
Anions						
Alkalinity (PP as CaCO3)	mg/L	32	B516818	<1.0	1.0	B516818
Alkalinity (Total as CaCO3)	mg/L	750	B516818	2.0	1.0	B516818
Bicarbonate (HCO3)	mg/L	830	B516818	2.4	1.0	B516818
Carbonate (CO3)	mg/L	38	B516818	<1.0	1.0	B516818
Dissolved Fluoride (F)	mg/L	1.6	B525229	<0.050	0.050	B525229
Hydroxide (OH)	mg/L	<1.0	B516818	<1.0	1.0	B516818
Chloride (Cl)	mg/L	1.4	B518954	<1.0	1.0	B518954
Sulphate (SO4)	mg/L	<1.0	B518954	<1.0	1.0	B518954
MISCELLANEOUS						
True Colour	Col. Unit	<2.0	B515810	<2.0	2.0	B515810
Nutrients						
Total Ammonia (N)	mg/L	0.39	B528323	<0.015	0.015	B528323
Orthophosphate (P)	mg/L	0.0054	B516618	<0.0030	0.0030	B516618

RDL = Reportable Detection Limit
N/A = Not Applicable

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Bureau Veritas Job #: C472226
Report Date: 2024/10/01

SLR CONSULTING (CANADA) LTD
Client Project #: 201.V24219.00000
Site Location: TENAS
Your P.O. #: VAN16079
Sampler Initials: GH

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CVJ639		CVJ640		
Sampling Date		2024/09/09 13:40		2024/09/09 19:30		
COC Number		C#733646-03-01		C#733646-03-01		
	UNITS	**T95R-64FD**	**QC Batch**	**FIELD BLANK**	**RDL**	**QC Batch**
Total Phosphorus (P)	mg/L	0.0086	B521730	<0.0030	0.0030	B521730
Nitrate plus Nitrite (N)	mg/L	<0.020	B517402	<0.020	0.020	B516769
Total Nitrogen (N)	mg/L	0.443	B526045	0.030	0.020	B526045
Misc. Organics						
Phenols	mg/L	<0.0015	B526551	<0.0015	0.0015	B526551
Physical Properties						
Turbidity	NTU	2.4	B516839	0.12	0.10	B516839
RDL = Reportable Detection Limit						

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Bureau Veritas Job #: C472226
Report Date: 2024/10/01

SLR CONSULTING (CANADA) LTD
Client Project #: 201.V24219.00000
Site Location: TENAS
Your P.O. #: VAN16079
Sampler Initials: GH

MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CVJ636	CVJ637	CVJ638	CVJ639	CVJ640		
Sampling Date		2024/09/09	2024/09/09 16:42	2024/09/09 13:40	2024/09/09 13:40	2024/09/09 19:30		
COC Number		C#733646-03-01	C#733646-03-01	C#733646-03-01	C#733646-03-01	C#733646-03-01		
	UNITS	**TRIP BLANK**	**T18-01D**	**T95R-64**	**T95R-64FD**	**FIELD BLANK**	**RDL**	**QC Batch**
Elements								
Dissolved Mercury (Hg)	ug/L	<0.0019	<0.0019	<0.0019	<0.0019	<0.0019	0.0019	B517310
Total Mercury (Hg)	ug/L	<0.0019	<0.0019	<0.0019	<0.0019	<0.0019	0.0019	B519977
RDL = Reportable Detection Limit								

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

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Report Date: 2024/10/01

SLR CONSULTING (CANADA) LTD
Client Project #: 201.V24219.00000
Site Location: TENAS
Your P.O. #: VAN16079
Sampler Initials: GH

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CVJ636			CVJ637		CVJ638		
Sampling Date		2024/09/09			2024/09/09 16:42		2024/09/09 13:40		
COC Number		C#733646-03-01			C#733646-03-01		C#733646-03-01		
	UNITS	**TRIP BLANK**	**RDL**	**QC Batch**	**T18-01D**	**QC Batch**	**T95R-64**	**RDL**	**QC Batch**
Dissolved Metals by ICPMS									
Dissolved Aluminum (Al)	ug/L	<3.0	3.0	B517188	946	B517188	<3.0	3.0	B517188
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	B517188	<0.50	B517188	<0.50	0.50	B517188
Dissolved Barium (Ba)	ug/L	<1.0	1.0	B517188	115	B517188	447	1.0	B530060
Dissolved Beryllium (Be)	ug/L	<0.10	0.10	B517188	<0.10	B517188	<0.10	0.10	B517188
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	B517188	<1.0	B517188	<1.0	1.0	B517188
Dissolved Boron (B)	ug/L	<50	50	B517188	123	B517188	148	50	B517188
Dissolved Cadmium (Cd)	ug/L	<0.010	0.010	B517188	<0.010	B517188	<0.010	0.010	B517188
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	B517188	<1.0	B517188	<1.0	1.0	B517188
Dissolved Cobalt (Co)	ug/L	<0.20	0.20	B517188	<0.20	B517188	<0.20	0.20	B517188
Dissolved Copper (Cu)	ug/L	<0.20	0.20	B517188	0.68	B517188	<0.20	0.20	B517188
Dissolved Iron (Fe)	ug/L	<5.0	5.0	B517188	435	B517188	363	5.0	B530060
Dissolved Lead (Pb)	ug/L	<0.20	0.20	B517188	0.72	B517188	<0.20	0.20	B517188
Dissolved Lithium (Li)	ug/L	<2.0	2.0	B517188	41.0	B517188	55.2	2.0	B530060
Dissolved Manganese (Mn)	ug/L	<1.0	1.0	B517188	6.2	B517188	14.9	1.0	B530060
Dissolved Molybdenum (Mo)	ug/L	<1.0	1.0	B517188	14.1	B517188	<1.0	1.0	B517188
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	B517188	<1.0	B517188	<1.0	1.0	B517188
Dissolved Phosphorus (P)	ug/L	<10	10	B517188	33	B517188	13	10	B517188
Dissolved Selenium (Se)	ug/L	<0.10	0.10	B517188	<0.10	B517188	<0.10	0.10	B517188
Dissolved Silver (Ag)	ug/L	<0.020	0.020	B517188	<0.020	B517188	<0.020	0.020	B517188
Dissolved Strontium (Sr)	ug/L	<1.0	1.0	B517188	127	B517188	285	1.0	B530060
Dissolved Thallium (Tl)	ug/L	<0.010	0.010	B517188	<0.010	B517188	<0.010	0.010	B517188
Dissolved Tin (Sn)	ug/L	<5.0	5.0	B517188	<5.0	B517188	<5.0	5.0	B517188
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	B517188	8.2	B517188	<5.0	5.0	B517188
Dissolved Uranium (U)	ug/L	<0.10	0.10	B517188	5.50	B517188	<0.10	0.10	B517188
Dissolved Vanadium (V)	ug/L	<5.0	5.0	B517188	<5.0	B517188	<5.0	5.0	B517188
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	B517188	<5.0	B517188	<5.0	5.0	B517188
Dissolved Calcium (Ca)	mg/L	<0.050	0.050	B515424	3.05	B515424	19.0	0.050	B529824
Dissolved Magnesium (Mg)	mg/L	<0.050	0.050	B515424	0.910	B515424	1.91	0.050	B529824
Dissolved Potassium (K)	mg/L	<0.050	0.050	B515424	2.39	B515424	1.36	0.050	B529824
Dissolved Sodium (Na)	mg/L	<0.050	0.050	B515424	316	B515424	323	0.050	B529824
Dissolved Sulphur (S)	mg/L	<3.0	3.0	B515424	6.6	B515424	<3.0	3.0	B529824
RDL = Reportable Detection Limit									

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ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CVJ636			CVJ637		CVJ638		
Sampling Date		2024/09/09			2024/09/09 16:42		2024/09/09 13:40		
COC Number		C#733646-03-01			C#733646-03-01		C#733646-03-01		
	UNITS	**TRIP BLANK**	**RDL**	**QC Batch**	**T18-01D**	**QC Batch**	**T95R-64**	**RDL**	**QC Batch**
Total Metals by ICPMS									
Total Aluminum (Al)	ug/L	<3.0	3.0	B517306	747	B517004	24.9	6.0	B540384
Total Antimony (Sb)	ug/L	<0.50	0.50	B517306	<1.0	B517004	1.6	1.0	B540384
Total Arsenic (As)	ug/L	<0.10	0.10	B517306	8.22	B517004	<0.20	0.20	B540384
Total Barium (Ba)	ug/L	<1.0	1.0	B517306	117	B517004	368	2.0	B540384
Total Beryllium (Be)	ug/L	<0.10	0.10	B517306	<0.20	B517004	<0.20	0.20	B540384
Total Bismuth (Bi)	ug/L	<1.0	1.0	B517306	<2.0	B517004	<2.0	2.0	B540384
Total Boron (B)	ug/L	<50	50	B517306	120	B517004	136	100	B540384
Total Cadmium (Cd)	ug/L	<0.010	0.010	B517306	<0.020	B517004	0.061	0.020	B540384
Total Chromium (Cr)	ug/L	<1.0	1.0	B517306	<2.0	B517004	<2.0	2.0	B540384
Total Cobalt (Co)	ug/L	<0.20	0.20	B517306	<0.40	B517004	<0.40	0.40	B540384
Total Copper (Cu)	ug/L	<0.50	0.50	B517306	1.6	B517004	1.4	1.0	B540384
Total Iron (Fe)	ug/L	<10	10	B517306	592	B517004	349	20	B540384
Total Lead (Pb)	ug/L	<0.20	0.20	B517306	1.86	B517004	<0.40	0.40	B540384
Total Lithium (Li)	ug/L	<2.0	2.0	B517306	41.6	B517004	53.9	4.0	B540384
Total Manganese (Mn)	ug/L	<1.0	1.0	B517306	9.6	B517004	15.3	2.0	B540384
Total Molybdenum (Mo)	ug/L	<1.0	1.0	B517306	11.7	B517004	<2.0	2.0	B540384
Total Nickel (Ni)	ug/L	<1.0	1.0	B517306	<2.0	B517004	3.3	2.0	B540384
Total Phosphorus (P)	ug/L	<10	10	B517306	39	B517004	<20	20	B540384
Total Selenium (Se)	ug/L	<0.10	0.10	B517306	<0.20	B517004	<0.20	0.20	B540384
Total Silver (Ag)	ug/L	<0.020	0.020	B517306	<0.040	B517004	<0.040	0.040	B540384
Total Strontium (Sr)	ug/L	<1.0	1.0	B517306	110	B517004	249	2.0	B540384
Total Thallium (Tl)	ug/L	<0.010	0.010	B517306	<0.020	B517004	0.046	0.020	B540384
Total Tin (Sn)	ug/L	<5.0	5.0	B517306	<10	B517004	<10	10	B540384
Total Titanium (Ti)	ug/L	<5.0	5.0	B517306	<10	B517004	<10	10	B540384
Total Uranium (U)	ug/L	<0.10	0.10	B517306	5.42	B517004	<0.20	0.20	B540384
Total Vanadium (V)	ug/L	<5.0	5.0	B517306	<10	B517004	<10	10	B540384
Total Zinc (Zn)	ug/L	<5.0	5.0	B517306	<10	B517004	<10	10	B540384
Total Calcium (Ca)	mg/L	<0.050	0.050	B515426	3.09	B515426	17.7	0.10	B540094
Total Magnesium (Mg)	mg/L	<0.050	0.050	B515426	0.81	B515426	1.71	0.10	B540094
Total Potassium (K)	mg/L	<0.050	0.050	B515426	2.20	B515426	1.27	0.10	B540094
Total Sodium (Na)	mg/L	<0.050	0.050	B515426	270	B515426	275	0.10	B540094
RDL = Reportable Detection Limit									

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Bureau Veritas Job #: C472226
Report Date: 2024/10/01

SLR CONSULTING (CANADA) LTD
Client Project #: 201.V24219.00000
Site Location: TENAS
Your P.O. #: VAN16079
Sampler Initials: GH

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CVJ636			CVJ637		CVJ638		
Sampling Date		2024/09/09			2024/09/09 16:42		2024/09/09 13:40		
COC Number		C#733646-03-01			C#733646-03-01		C#733646-03-01		
	UNITS	**TRIP BLANK**	**RDL**	**QC Batch**	**T18-01D**	**QC Batch**	**T95R-64**	**RDL**	**QC Batch**
Total Sulphur (S)	mg/L	<3.0	3.0	B515426	<6.0	B515426	<6.0	6.0	B540094
RDL = Reportable Detection Limit									

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ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CVJ639			CVJ640		
Sampling Date		2024/09/09 13:40			2024/09/09 19:30		
COC Number		C#733646-03-01			C#733646-03-01		
	UNITS	**T95R-64FD**	**RDL**	**QC Batch**	**FIELD BLANK**	**RDL**	**QC Batch**
Dissolved Metals by ICPMS							
Dissolved Aluminum (Al)	ug/L	<3.0	3.0	B517188	<3.0	3.0	B517188
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	B517188	<0.50	0.50	B517188
Dissolved Barium (Ba)	ug/L	452	1.0	B530060	<1.0	1.0	B517188
Dissolved Beryllium (Be)	ug/L	<0.10	0.10	B517188	<0.10	0.10	B517188
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	B517188	<1.0	1.0	B517188
Dissolved Boron (B)	ug/L	170	50	B530060	<50	50	B517188
Dissolved Cadmium (Cd)	ug/L	<0.010	0.010	B517188	<0.010	0.010	B517188
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	B517188	<1.0	1.0	B517188
Dissolved Cobalt (Co)	ug/L	<0.20	0.20	B517188	<0.20	0.20	B517188
Dissolved Copper (Cu)	ug/L	<0.20	0.20	B517188	0.35	0.20	B517188
Dissolved Iron (Fe)	ug/L	370	5.0	B530060	<5.0	5.0	B517188
Dissolved Lead (Pb)	ug/L	<0.20	0.20	B517188	<0.20	0.20	B517188
Dissolved Lithium (Li)	ug/L	61.3	2.0	B530060	<2.0	2.0	B517188
Dissolved Manganese (Mn)	ug/L	15.2	1.0	B530060	<1.0	1.0	B517188
Dissolved Molybdenum (Mo)	ug/L	<1.0	1.0	B517188	<1.0	1.0	B517188
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	B517188	<1.0	1.0	B517188
Dissolved Phosphorus (P)	ug/L	14	10	B517188	<10	10	B517188
Dissolved Selenium (Se)	ug/L	<0.10	0.10	B517188	<0.10	0.10	B517188
Dissolved Silver (Ag)	ug/L	<0.020	0.020	B517188	<0.020	0.020	B517188
Dissolved Strontium (Sr)	ug/L	300	1.0	B517188	<1.0	1.0	B517188
Dissolved Thallium (Tl)	ug/L	<0.010	0.010	B517188	<0.010	0.010	B517188
Dissolved Tin (Sn)	ug/L	<5.0	5.0	B517188	<5.0	5.0	B517188
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	B517188	<5.0	5.0	B517188
Dissolved Uranium (U)	ug/L	<0.10	0.10	B517188	<0.10	0.10	B517188
Dissolved Vanadium (V)	ug/L	<5.0	5.0	B517188	<5.0	5.0	B517188
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	B517188	<5.0	5.0	B517188
Dissolved Calcium (Ca)	mg/L	19.0	0.050	B529824	<0.050	0.050	B515424
Dissolved Magnesium (Mg)	mg/L	2.09	0.050	B529824	<0.050	0.050	B515424
Dissolved Potassium (K)	mg/L	1.39	0.050	B529824	<0.050	0.050	B515424
Dissolved Sodium (Na)	mg/L	339	0.050	B529824	0.530	0.050	B515424
Dissolved Sulphur (S)	mg/L	<3.0	3.0	B529824	<3.0	3.0	B515424
RDL = Reportable Detection Limit							

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ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CVJ639			CVJ640		
Sampling Date		2024/09/09 13:40			2024/09/09 19:30		
COC Number		C#733646-03-01			C#733646-03-01		
	UNITS	**T95R-64FD**	**RDL**	**QC Batch**	**FIELD BLANK**	**RDL**	**QC Batch**
Total Metals by ICPMS							
Total Aluminum (Al)	ug/L	16.2	6.0	B540384	<3.0	3.0	B517306
Total Antimony (Sb)	ug/L	2.4	1.0	B540384	<0.50	0.50	B517306
Total Arsenic (As)	ug/L	0.23	0.20	B540384	<0.10	0.10	B517306
Total Barium (Ba)	ug/L	372	2.0	B540384	<1.0	1.0	B517306
Total Beryllium (Be)	ug/L	<0.20	0.20	B540384	<0.10	0.10	B517306
Total Bismuth (Bi)	ug/L	<2.0	2.0	B540384	<1.0	1.0	B517306
Total Boron (B)	ug/L	138	100	B540384	<50	50	B517306
Total Cadmium (Cd)	ug/L	0.075	0.020	B540384	<0.010	0.010	B517306
Total Chromium (Cr)	ug/L	<2.0	2.0	B540384	<1.0	1.0	B517306
Total Cobalt (Co)	ug/L	<0.40	0.40	B540384	<0.20	0.20	B517306
Total Copper (Cu)	ug/L	1.9	1.0	B540384	<0.50	0.50	B517306
Total Iron (Fe)	ug/L	353	20	B540384	<10	10	B517306
Total Lead (Pb)	ug/L	<0.40	0.40	B540384	<0.20	0.20	B517306
Total Lithium (Li)	ug/L	53.5	4.0	B540384	<2.0	2.0	B517306
Total Manganese (Mn)	ug/L	15.7	2.0	B540384	<1.0	1.0	B517306
Total Molybdenum (Mo)	ug/L	<2.0	2.0	B540384	<1.0	1.0	B517306
Total Nickel (Ni)	ug/L	4.7	2.0	B540384	<1.0	1.0	B517306
Total Phosphorus (P)	ug/L	<20	20	B540384	<10	10	B517306
Total Selenium (Se)	ug/L	<0.20	0.20	B540384	<0.10	0.10	B517306
Total Silver (Ag)	ug/L	<0.040	0.040	B540384	<0.020	0.020	B517306
Total Strontium (Sr)	ug/L	253	2.0	B540384	<1.0	1.0	B517306
Total Thallium (Tl)	ug/L	0.067	0.020	B540384	<0.010	0.010	B517306
Total Tin (Sn)	ug/L	<10	10	B540384	<5.0	5.0	B517306
Total Titanium (Ti)	ug/L	<10	10	B540384	<5.0	5.0	B517306
Total Uranium (U)	ug/L	<0.20	0.20	B540384	<0.10	0.10	B517306
Total Vanadium (V)	ug/L	<10	10	B540384	<5.0	5.0	B517306
Total Zinc (Zn)	ug/L	<10	10	B540384	<5.0	5.0	B517306
Total Calcium (Ca)	mg/L	18.1	0.10	B540094	<0.050	0.050	B515426
Total Magnesium (Mg)	mg/L	1.72	0.10	B540094	<0.050	0.050	B515426
Total Potassium (K)	mg/L	1.27	0.10	B540094	<0.050	0.050	B515426
Total Sodium (Na)	mg/L	273	0.10	B540094	0.542	0.050	B515426
RDL = Reportable Detection Limit							

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SLR CONSULTING (CANADA) LTD
Client Project #: 201.V24219.00000
Site Location: TENAS
Your P.O. #: VAN16079
Sampler Initials: GH

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CVJ639			CVJ640		
Sampling Date		2024/09/09 13:40			2024/09/09 19:30		
COC Number		C#733646-03-01			C#733646-03-01		
	UNITS	**T95R-64FD**	**RDL**	**QC Batch**	**FIELD BLANK**	**RDL**	**QC Batch**
Total Sulphur (S)	mg/L	<6.0	6.0	B540094	<3.0	3.0	B515426
RDL = Reportable Detection Limit							

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	11.3°C

Version #3: Report reissued to include results for Sulphur and Phosphorus on all samples as per client request received 2024/09/25.
Version #4: Report reissued to include results for Sodium and Potassium on all samples as per client request received 2024/09/25.
Version #5: Report reissued to include reworked total metals results for samples T95R-64 and T95R-64FD (2024/10/01).

Sample CVJ636 [TRIP BLANK] : Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Color (True) by Automated Analyzer. Sample received past method specified hold time for Color (True) by Automated Analyzer. Sample received past method specified hold time for Nitrate + Nitrite (N). Sample received past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Sample was analyzed past method specified hold time for Nitrite (N) Regular Level Water.

Sample CVJ637 [T18-01D] : Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Color (True) by Automated Analyzer. Sample received past method specified hold time for Color (True) by Automated Analyzer. Sample received past method specified hold time for Nitrate + Nitrite (N). Sample received past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Sample was analyzed past method specified hold time for Nitrite (N) Regular Level Water.

Sample CVJ638 [T95R-64] : Sample received past method specified hold time for Nitrate + Nitrite (N). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample received past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Sample was analyzed past method specified hold time for Nitrite (N) Regular Level Water. Sample received past method specified hold time for Color (True) by Automated Analyzer.

Sample CVJ639 [T95R-64FD] : Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Color (True) by Automated Analyzer. Sample received past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Sample received past method specified hold time for Nitrate + Nitrite (N). Sample was analyzed past method specified hold time for Nitrite (N) Regular Level Water. Sample received past method specified hold time for Nitrite (N) Regular Level Water.

Sample CVJ640 [FIELD BLANK] : Sample received past method specified hold time for Nitrate + Nitrite (N). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample received past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Color (True) by Automated Analyzer. Sample received past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Sample was analyzed past method specified hold time for Nitrite (N) Regular Level Water.

Sample CVJ638, Elements by CRC ICPMS (dissolved): Test repeated.
Sample CVJ639, Elements by CRC ICPMS (dissolved): Test repeated.

Results relate only to the items tested.

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B515810	True Colour	2024/09/13			104	80 - 120	<2.0	Col. Unit	5.8	20
B516618	Orthophosphate (P)	2024/09/13			104	80 - 120	<0.0030	mg/L		
B516769	Nitrate plus Nitrite (N)	2024/09/14	113	80 - 120	105	80 - 120	<0.020	mg/L	NC	25
B516781	Nitrite (N)	2024/09/14	105	80 - 120	102	80 - 120	<0.0050	mg/L	NC	20
B516806	Nitrate plus Nitrite (N)	2024/09/14	103	80 - 120	104	80 - 120	<0.020	mg/L	0.99	25
B516808	Nitrite (N)	2024/09/14	111	80 - 120	101	80 - 120	<0.0050	mg/L	NC	20
B516818	Alkalinity (PP as CaCO3)	2024/09/14					<1.0	mg/L	NC	20
B516818	Alkalinity (Total as CaCO3)	2024/09/14			100	80 - 120	<1.0	mg/L	1.5	20
B516818	Bicarbonate (HCO3)	2024/09/14					<1.0	mg/L	NC	20
B516818	Carbonate (CO3)	2024/09/14					<1.0	mg/L	NC	20
B516818	Hydroxide (OH)	2024/09/14					<1.0	mg/L	NC	20
B516820	Conductivity	2024/09/14			100	90 - 110	<2.0	uS/cm	NC	10
B516821	pH	2024/09/14			100	97 - 103			11	N/A
B516839	Turbidity	2024/09/13			103	80 - 120	<0.10	NTU	18	20
B517004	Total Aluminum (Al)	2024/09/17	94	80 - 120	102	80 - 120	<3.0	ug/L	3.9	20
B517004	Total Antimony (Sb)	2024/09/17	99	80 - 120	102	80 - 120	<0.50	ug/L	NC	20
B517004	Total Arsenic (As)	2024/09/17	99	80 - 120	99	80 - 120	<0.10	ug/L	NC	20
B517004	Total Barium (Ba)	2024/09/17	NC	80 - 120	95	80 - 120	<1.0	ug/L	0.21	20
B517004	Total Beryllium (Be)	2024/09/17	95	80 - 120	100	80 - 120	<0.10	ug/L	NC	20
B517004	Total Bismuth (Bi)	2024/09/17	94	80 - 120	99	80 - 120	<1.0	ug/L	NC	20
B517004	Total Boron (B)	2024/09/17	102	80 - 120	103	80 - 120	<50	ug/L	5.3	20
B517004	Total Cadmium (Cd)	2024/09/17	96	80 - 120	98	80 - 120	<0.010	ug/L	NC	20
B517004	Total Chromium (Cr)	2024/09/17	94	80 - 120	100	80 - 120	<1.0	ug/L	NC	20
B517004	Total Cobalt (Co)	2024/09/17	92	80 - 120	99	80 - 120	<0.20	ug/L	NC	20
B517004	Total Copper (Cu)	2024/09/17	89	80 - 120	98	80 - 120	<0.50	ug/L	NC	20
B517004	Total Iron (Fe)	2024/09/17	92	80 - 120	100	80 - 120	<10	ug/L	2.5	20
B517004	Total Lead (Pb)	2024/09/17	91	80 - 120	100	80 - 120	<0.20	ug/L	NC	20
B517004	Total Lithium (Li)	2024/09/17	97	80 - 120	99	80 - 120	<2.0	ug/L	1.6	20
B517004	Total Manganese (Mn)	2024/09/17	92	80 - 120	98	80 - 120	<1.0	ug/L	2.1	20
B517004	Total Molybdenum (Mo)	2024/09/17	102	80 - 120	99	80 - 120	<1.0	ug/L	NC	20
B517004	Total Nickel (Ni)	2024/09/17	92	80 - 120	99	80 - 120	<1.0	ug/L	NC	20

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B517004	Total Phosphorus (P)	2024/09/17	99	80 - 120	99	80 - 120	<10	ug/L	5.5	20
B517004	Total Selenium (Se)	2024/09/17	93	80 - 120	100	80 - 120	<0.10	ug/L	NC	20
B517004	Total Silver (Ag)	2024/09/17	94	80 - 120	97	80 - 120	<0.020	ug/L	NC	20
B517004	Total Strontium (Sr)	2024/09/17	NC	80 - 120	96	80 - 120	<1.0	ug/L	1.3	20
B517004	Total Thallium (Tl)	2024/09/17	96	80 - 120	99	80 - 120	<0.010	ug/L	NC	20
B517004	Total Tin (Sn)	2024/09/17	94	80 - 120	97	80 - 120	<5.0	ug/L	NC	20
B517004	Total Titanium (Ti)	2024/09/17	95	80 - 120	95	80 - 120	<5.0	ug/L	NC	20
B517004	Total Uranium (U)	2024/09/17	102	80 - 120	103	80 - 120	<0.10	ug/L	NC	20
B517004	Total Vanadium (V)	2024/09/17	98	80 - 120	101	80 - 120	<5.0	ug/L	NC	20
B517004	Total Zinc (Zn)	2024/09/17	95	80 - 120	101	80 - 120	<5.0	ug/L	NC	20
B517188	Dissolved Aluminum (Al)	2024/09/16	110	80 - 120	107	80 - 120	<3.0	ug/L	NC	20
B517188	Dissolved Antimony (Sb)	2024/09/16	101	80 - 120	107	80 - 120	<0.50	ug/L	NC	20
B517188	Dissolved Barium (Ba)	2024/09/16	97	80 - 120	105	80 - 120	<1.0	ug/L	NC	20
B517188	Dissolved Beryllium (Be)	2024/09/16	96	80 - 120	105	80 - 120	<0.10	ug/L	NC	20
B517188	Dissolved Bismuth (Bi)	2024/09/16	96	80 - 120	108	80 - 120	<1.0	ug/L	NC	20
B517188	Dissolved Boron (B)	2024/09/16	100	80 - 120	109	80 - 120	<50	ug/L	NC	20
B517188	Dissolved Cadmium (Cd)	2024/09/16	102	80 - 120	107	80 - 120	<0.010	ug/L	NC	20
B517188	Dissolved Chromium (Cr)	2024/09/16	95	80 - 120	104	80 - 120	<1.0	ug/L	NC	20
B517188	Dissolved Cobalt (Co)	2024/09/16	102	80 - 120	109	80 - 120	<0.20	ug/L	NC	20
B517188	Dissolved Copper (Cu)	2024/09/16	94	80 - 120	101	80 - 120	<0.20	ug/L	0.11	20
B517188	Dissolved Iron (Fe)	2024/09/16	114	80 - 120	108	80 - 120	<5.0	ug/L	NC	20
B517188	Dissolved Lead (Pb)	2024/09/16	97	80 - 120	106	80 - 120	<0.20	ug/L	NC	20
B517188	Dissolved Lithium (Li)	2024/09/16	93	80 - 120	104	80 - 120	<2.0	ug/L	NC	20
B517188	Dissolved Manganese (Mn)	2024/09/16	95	80 - 120	101	80 - 120	<1.0	ug/L	NC	20
B517188	Dissolved Molybdenum (Mo)	2024/09/16	102	80 - 120	109	80 - 120	<1.0	ug/L	NC	20
B517188	Dissolved Nickel (Ni)	2024/09/16	97	80 - 120	104	80 - 120	<1.0	ug/L	NC	20
B517188	Dissolved Phosphorus (P)	2024/09/16	116	80 - 120	112	80 - 120	<10	ug/L	NC	20
B517188	Dissolved Selenium (Se)	2024/09/16	102	80 - 120	106	80 - 120	<0.10	ug/L	NC	20
B517188	Dissolved Silver (Ag)	2024/09/16	101	80 - 120	106	80 - 120	<0.020	ug/L	NC	20
B517188	Dissolved Strontium (Sr)	2024/09/16	NC	80 - 120	104	80 - 120	<1.0	ug/L	NC	20
B517188	Dissolved Thallium (Tl)	2024/09/16	100	80 - 120	108	80 - 120	<0.010	ug/L	NC	20

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B517188	Dissolved Tin (Sn)	2024/09/16	101	80 - 120	109	80 - 120	<5.0	ug/L	NC	20
B517188	Dissolved Titanium (Ti)	2024/09/16	104	80 - 120	108	80 - 120	<5.0	ug/L	NC	20
B517188	Dissolved Uranium (U)	2024/09/16	104	80 - 120	113	80 - 120	<0.10	ug/L	NC	20
B517188	Dissolved Vanadium (V)	2024/09/16	98	80 - 120	103	80 - 120	<5.0	ug/L	NC	20
B517188	Dissolved Zinc (Zn)	2024/09/16	103	80 - 120	111	80 - 120	<5.0	ug/L	NC	20
B517306	Total Aluminum (Al)	2024/09/16	100	80 - 120	105	80 - 120	<3.0	ug/L	NC	20
B517306	Total Antimony (Sb)	2024/09/16	103	80 - 120	105	80 - 120	<0.50	ug/L	NC	20
B517306	Total Arsenic (As)	2024/09/16	106	80 - 120	110	80 - 120	<0.10	ug/L	NC	20
B517306	Total Barium (Ba)	2024/09/16	99	80 - 120	104	80 - 120	<1.0	ug/L	NC	20
B517306	Total Beryllium (Be)	2024/09/16	96	80 - 120	103	80 - 120	<0.10	ug/L	NC	20
B517306	Total Bismuth (Bi)	2024/09/16	100	80 - 120	107	80 - 120	<1.0	ug/L	NC	20
B517306	Total Boron (B)	2024/09/16	101	80 - 120	105	80 - 120	<50	ug/L	NC	20
B517306	Total Cadmium (Cd)	2024/09/16	104	80 - 120	106	80 - 120	<0.010	ug/L	NC	20
B517306	Total Chromium (Cr)	2024/09/16	96	80 - 120	100	80 - 120	<1.0	ug/L	NC	20
B517306	Total Cobalt (Co)	2024/09/16	103	80 - 120	109	80 - 120	<0.20	ug/L	NC	20
B517306	Total Copper (Cu)	2024/09/16	95	80 - 120	100	80 - 120	<0.50	ug/L	NC	20
B517306	Total Iron (Fe)	2024/09/16	102	80 - 120	107	80 - 120	<10	ug/L	NC	20
B517306	Total Lead (Pb)	2024/09/16	100	80 - 120	106	80 - 120	<0.20	ug/L	NC	20
B517306	Total Lithium (Li)	2024/09/16	93	80 - 120	100	80 - 120	<2.0	ug/L	NC	20
B517306	Total Manganese (Mn)	2024/09/16	96	80 - 120	100	80 - 120	<1.0	ug/L	NC	20
B517306	Total Molybdenum (Mo)	2024/09/16	102	80 - 120	106	80 - 120	<1.0	ug/L	NC	20
B517306	Total Nickel (Ni)	2024/09/16	98	80 - 120	104	80 - 120	<1.0	ug/L	NC	20
B517306	Total Phosphorus (P)	2024/09/16	118	80 - 120	114	80 - 120	<10	ug/L	NC	20
B517306	Total Selenium (Se)	2024/09/16	101	80 - 120	106	80 - 120	<0.10	ug/L	NC	20
B517306	Total Silver (Ag)	2024/09/16	101	80 - 120	104	80 - 120	<0.020	ug/L	NC	20
B517306	Total Strontium (Sr)	2024/09/16	98	80 - 120	103	80 - 120	<1.0	ug/L	NC	20
B517306	Total Thallium (Tl)	2024/09/16	101	80 - 120	108	80 - 120	<0.010	ug/L	NC	20
B517306	Total Tin (Sn)	2024/09/16	103	80 - 120	107	80 - 120	<5.0	ug/L	NC	20
B517306	Total Titanium (Ti)	2024/09/16	102	80 - 120	107	80 - 120	<5.0	ug/L	NC	20
B517306	Total Uranium (U)	2024/09/16	100	80 - 120	113	80 - 120	<0.10	ug/L	NC	20
B517306	Total Vanadium (V)	2024/09/16	98	80 - 120	101	80 - 120	<5.0	ug/L	NC	20

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B517306	Total Zinc (Zn)	2024/09/16	106	80 - 120	111	80 - 120	<5.0	ug/L	NC	20
B517310	Dissolved Mercury (Hg)	2024/09/17	97	80 - 120	97	80 - 120	<0.0019	ug/L	NC	20
B517402	Nitrate plus Nitrite (N)	2024/09/14	NC	80 - 120	106	80 - 120	<0.020	mg/L	0.17 (1)	25
B517403	Nitrite (N)	2024/09/14	126 (2)	80 - 120	101	80 - 120	<0.0050	mg/L	NC	20
B518343	Total Suspended Solids	2024/09/17	103	80 - 120	100	80 - 120	<1.0	mg/L	NC	20
B518446	Total Dissolved Solids	2024/09/17	105	80 - 120	96	80 - 120	<10	mg/L	4.8	20
B518800	Acidity (pH 4.5)	2024/09/16					<1.0	mg/L	NC	20
B518800	Acidity (pH 8.3)	2024/09/16			99	80 - 120	<1.0	mg/L	NC	20
B518954	Chloride (Cl)	2024/09/16	105	80 - 120	99	80 - 120	<1.0	mg/L		
B518954	Sulphate (SO4)	2024/09/16	NC	80 - 120	99	80 - 120	<1.0	mg/L		
B519219	Acidity (pH 4.5)	2024/09/16					<1.0	mg/L	NC	20
B519219	Acidity (pH 8.3)	2024/09/16			99	80 - 120	<1.0	mg/L	NC	20
B519977	Total Mercury (Hg)	2024/09/17	99	80 - 120	99	80 - 120	<0.0019	ug/L	NC	20
B521730	Total Phosphorus (P)	2024/09/18	NC	80 - 120	94	80 - 120	<0.0030	mg/L	0.042	20
B525229	Dissolved Fluoride (F)	2024/09/18	112	80 - 120	101	80 - 120	<0.050	mg/L	3.7	20
B525353	Total Organic Carbon (C)	2024/09/19	111	80 - 120	100	80 - 120	<0.50	mg/L	NC	20
B525368	Dissolved Organic Carbon (C)	2024/09/18	115	80 - 120	99	80 - 120	<0.50	mg/L	NC	20
B526045	Total Nitrogen (N)	2024/09/19	NC	80 - 120	104	80 - 120	<0.020	mg/L	5.2	20
B526551	Phenols	2024/09/18	86	80 - 120	94	80 - 120	<0.0015	mg/L	NC	20
B528323	Total Ammonia (N)	2024/09/19	104	80 - 120	111	80 - 120	<0.015	mg/L	0.37	20
B529965	Strong Acid Dissoc. Cyanide (CN)	2024/09/20	94	80 - 120	99	80 - 120	<0.00050	mg/L	NC	20
B530060	Dissolved Barium (Ba)	2024/09/20			100	80 - 120	<1.0	ug/L		
B530060	Dissolved Boron (B)	2024/09/20			87	80 - 120	<50	ug/L		
B530060	Dissolved Iron (Fe)	2024/09/20			102	80 - 120	<5.0	ug/L		
B530060	Dissolved Lithium (Li)	2024/09/20			87	80 - 120	<2.0	ug/L		
B530060	Dissolved Manganese (Mn)	2024/09/20			94	80 - 120	<1.0	ug/L		
B530060	Dissolved Strontium (Sr)	2024/09/20			95	80 - 120	<1.0	ug/L		
B540384	Total Aluminum (Al)	2024/09/27	NC	80 - 120	102	80 - 120	<3.0	ug/L	2.6	20
B540384	Total Antimony (Sb)	2024/09/27	107	80 - 120	109	80 - 120	<0.50	ug/L	NC	20
B540384	Total Arsenic (As)	2024/09/27	105	80 - 120	106	80 - 120	<0.10	ug/L	1.3	20
B540384	Total Barium (Ba)	2024/09/27	NC	80 - 120	106	80 - 120	<1.0	ug/L	4.0	20

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B540384	Total Beryllium (Be)	2024/09/27	104	80 - 120	104	80 - 120	<0.10	ug/L	NC	20
B540384	Total Bismuth (Bi)	2024/09/27	105	80 - 120	106	80 - 120	<1.0	ug/L	NC	20
B540384	Total Boron (B)	2024/09/27	103	80 - 120	103	80 - 120	<50	ug/L	NC	20
B540384	Total Cadmium (Cd)	2024/09/27	103	80 - 120	106	80 - 120	<0.010	ug/L	3.9	20
B540384	Total Chromium (Cr)	2024/09/27	105	80 - 120	106	80 - 120	<1.0	ug/L	6.3	20
B540384	Total Cobalt (Co)	2024/09/27	101	80 - 120	103	80 - 120	<0.20	ug/L	1.3	20
B540384	Total Copper (Cu)	2024/09/27	100	80 - 120	103	80 - 120	<0.50	ug/L	3.0	20
B540384	Total Iron (Fe)	2024/09/27	NC	80 - 120	109	80 - 120	<10	ug/L	6.1	20
B540384	Total Lead (Pb)	2024/09/27	109	80 - 120	107	80 - 120	<0.20	ug/L	5.0	20
B540384	Total Lithium (Li)	2024/09/27	102	80 - 120	102	80 - 120	<2.0	ug/L	1.6	20
B540384	Total Manganese (Mn)	2024/09/27	NC	80 - 120	105	80 - 120	<1.0	ug/L	0.93	20
B540384	Total Molybdenum (Mo)	2024/09/27	111	80 - 120	110	80 - 120	<1.0	ug/L	7.1	20
B540384	Total Nickel (Ni)	2024/09/27	103	80 - 120	104	80 - 120	<1.0	ug/L	2.2	20
B540384	Total Phosphorus (P)	2024/09/27	105	80 - 120	104	80 - 120	<10	ug/L	2.0	20
B540384	Total Selenium (Se)	2024/09/27	104	80 - 120	105	80 - 120	<0.10	ug/L	13	20
B540384	Total Silver (Ag)	2024/09/27	102	80 - 120	107	80 - 120	<0.020	ug/L	4.9	20
B540384	Total Strontium (Sr)	2024/09/27	110	80 - 120	105	80 - 120	<1.0	ug/L	1.5	20
B540384	Total Thallium (Tl)	2024/09/27	106	80 - 120	106	80 - 120	<0.010	ug/L	2.7	20
B540384	Total Tin (Sn)	2024/09/27	103	80 - 120	108	80 - 120	<5.0	ug/L	NC	20
B540384	Total Titanium (Ti)	2024/09/27	NC	80 - 120	107	80 - 120	<5.0	ug/L	1.1	20
B540384	Total Uranium (U)	2024/09/27	107	80 - 120	105	80 - 120	<0.10	ug/L	0.96	20
B540384	Total Vanadium (V)	2024/09/27	107	80 - 120	104	80 - 120	<5.0	ug/L	6.4	20

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B540384	Total Zinc (Zn)	2024/09/27	105	80 - 120	105	80 - 120	<5.0	ug/L	3.8	20

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Detection limit raised due to interferent.

(2) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

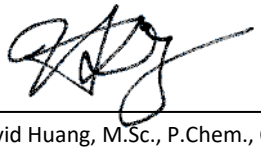
Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Bureau Veritas Job #: C472226
Report Date: 2024/10/01

SLR CONSULTING (CANADA) LTD
Client Project #: 201.V24219.00000
Site Location: TENAS
Your P.O. #: VAN16079
Sampler Initials: GH

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



David Huang, M.Sc., P.Chem., QP, Scientific Services Manager



Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics



Mauro Oselin, P.Chem., QP, Scientific Specialist

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Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

C472226
2024/09/13 10:40

Bureau Veritas
4606 Canada Way, Burnaby, British Columbia Canada V5G 1K5 Tel:(604) 734 7276 Toll-free:800-563-6266 Fax:(604) 731 2386 www.bvna.com

Chain Of Custody Record

INVOICE TO:		Report Information		Project Information		Laboratory Use Only	
Company Name	#1776 SLR CONSULTING (CANADA) LTD	Company Name	SLR CONSULTING	Quotation #	C40429	Bureau Veritas Job #	Bottle Order #: 733646
Contact Name	Nathalie Brandebourger	Contact Name	Nathalie Brandebourger	P.O. #			
Address	#200 - 887 Great Northern Way VANCOUVER BC V5T 4T5	Address	88 F GREAT NOTHERN WAY VANCOUVER	Project #	201-V2421 9.00000	Chain Of Custody Record	Project Manager
Phone	(604) 738-2500 Fax: (604) 738-2542	Phone	Fax:	Project Name	TENAS	C#733646-03-01	Nahed Amer
Email	nathalie.brandebourger@pecg.ca	Email	nathalie.brandebourger@pecg.ca	Site #			
				Sampled By	GLENN HALL + BECKS BRADFORD		

Regulatory Criteria:
- [ ] CSR
- [ ] CCME
- [ ] BC Water Quality
- [ ] Other

Special Instructions: PLEASE INCLUDE ANALYSIS LISTED IN THE COMMENTS FOR ALL SAMPLES.

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

Regular (Standard) TAT: (will be applied if Rush TAT is not specified): [X]
Standard TAT = 5-7 Working days for most tests..
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
1 DAY [ ] 2 Day [ ] 3 Day [ ] Date Required: _____ [ ]
Rush Confirmation Number: _____ (call lab for #)

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered ? (Y / N)	Color (True) by Automated Analyzer	Conductivity @25C	pH @25°C	Total Suspended Solids (NFR)	Total Dissolved Solids (Filt. Residue)	Turbidity	Acidity pH 4.5 & pH 8.3 (as CaCO3)	Alkalinity @25C (pp, total), CO3,HCO3,OH	Ammonia-N (Total)	Total Kjeldahl Nitrogen (Total), Nitrate, Nitrite	# of Bottles	Comments
1	TENAS POUR CREEK T18-OID	TRIP BLANK	2024/09/09			N	X	X	X	X	X	X	X	X	X	X	12	PLEASE INCLUDE THE FOLLOWING IN ALL SAMPLES:
2	TENAS POUR CREEK	T18-OID	2024/09/09	16:42	GW	N	X	X	X	X	X	X	X	X	X	X	12	• CYANIDE (TOTAL)
3	TENAS POUR CREEK	T95R-64	2024/09/09	13:40	GW	N	X	X	X	X	X	X	X	X	X	X	12	• PHENOLS (4-AAP)
4	TENAS POUR CREEK	T95R-64 FD	2024/09/09	13:40	GW	N	X	X	X	X	X	X	X	X	X	X	12	• TOTAL Fe, Li, Mn, Hg, Mo,
5	TENAS POUR CREEK	FIELD BLANK	2024/09/09	19:30	WATER	N	X	X	X	X	X	X	X	X	X	X	12	Ni, Se, Ag, Sr, Tl, Sn, Ti, U, V, Zn
6																		
7																		
8																		
9																		
10																		

MVAN-2024-09-777

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Lab Use Only: Time Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
REBECCA BRADFORD	24/09/11	08:15	Ian Irem Ates	2024/09/13	10:40		[ ]	10/12/12	[ ] Yes [X] No

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COC-TERMS-AND-CONDITIONS.
* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

White: Bureau Veritas Yellow: Client

Bureau Veritas Canada (2019) Inc.

ICE MELTED.

C472226
2024/09/13 10:40

Bureau Veritas
4606 Canada Way, Burnaby, British Columbia Canada V5G 1K5 Tel:(604) 734 7276 Toll-free:800-563-6266 Fax:(604) 731 2386 www.bvna.com

Chain Of Custody Record

INVOICE TO:		Report Information		Project Information		Laboratory Use Only	
Company Name	#1776 SLR CONSULTING (CANADA) LTD	Company Name	SLR CONSULTING	Quotation #	C40429	Bureau Veritas Job #	Bottle Order #: 733646
Contact Name	Nathalie Brandebourger	Contact Name	Nathalie Brandebourger	P.O. #			
Address	#200 - 887 Great Northern Way VANCOUVER BC V5T 4T5	Address	887 GREAT NOTHERN WAY VANCOUVER, BC	Project #	201.V24219.00000	Chain Of Custody Record	Project Manager
Phone	(604) 738-2500 Fax: (604) 738-2542	Phone	Fax:	Project Name	TENAS	C#733646-03-02	Nahed Amer
Email	nathalie.brandebourger@pecg.ca	Email	nathalie.brandebourger@pecg.ca	Site #			
				Sampled By	GLENN HALL + ISECKS BRADFORD		

Regulatory Criteria:
- ☐ CSR
- ☐ CCME
- ☐ BC Water Quality
- ☐ Other _____

Special Instructions

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

Regular (Standard) TAT:
(will be applied if Rush TAT is not specified): ☑
Standard TAT = 5-7 Working days for most tests..
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
1 DAY ☐ 2 Day ☐ 3 Day ☐ Date Required: _____ ☐
Rush Confirmation Number: _____ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered ? (Y / N)	Nitrogen (Total)	Orthophosphate by Automated Analyzer	Total Phosphorus	Fluoride	Chloride/Sulphate by Auto Colourimetry	Carbon (DOC)	Carbon (Total Organic)	Dissolved Al,Sb,As,Ba,Be,Bi,B,Cd,Cr,Co,Cu,Pb, Hardness	Dissolved Fe,Li,Mn,Hg,Mo,Ni,Se,Ag,Sr,Tl,Sn,Ti, U,V,Zn	Total Al,Sb,As,Ba,Be,Bi,B,Cd,Cr,Co,Cu,Pb, Hardness	# of Bottles	Comments
1	TENAS FOUR CREEK	TRIP BLANK	2024/09/09			Y	X	X	X	X	X	X	X	X	X	X	12	
2	TEN AS FOUR CREEK	T18-01D	2024/09/09	16:42	GW	Y	X	X	X	X	X	X	X	X	X	X	12	
3	TENAS FOUR CREEK	T95R-64	2024/09/09	13:40	GW	Y	X	X	X	X	X	X	X	X	X	X	12	
4	TENAS FOUR CREEK	T95R-64 FD	2024/09/09	13:40	GW	Y	X	X	X	X	X	X	X	X	X	X	12	
5	TENAS FOUR CREEK	FIELD BLANK	2024/09/09	19:30	WATER	Y	X	X	X	X	X	X	X	X	X	X	12	
6																		
7																		
8																		
9																		
10																		

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# Jars used and not submitted	Lab Use Only: Time Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
REBECCA BRADFORD	24/09/11	08:15	[illegible]	2024/09/13	10:40		☐	10/12/12	☐ Yes ☒ No

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COC-TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

White: Bureau Veritas Yellow: Client

Bureau Veritas Canada (2019) Inc.

ICE MELTED.

Your Project #: 1905903 TENAS 2024
Your C.O.C. #: C#728282-01-01

Attention: Nathalie Brandebourger

Palmer Environmental Consulting Group (PECG)
#630 – 470 Granville Street
Vancouver, BC
CANADA V6C 1V5

Report Date: 2024/07/24
Report #: R3531668
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C453392
Received: 2024/07/16, 09:30

Sample Matrix: Water
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Acidity pH 4.5 & pH 8.3 (as CaCO3)	6	N/A	2024/07/19	BBY6SOP-00037	SM 24 2310 B m
Alkalinity @25C (pp, total), CO3,HCO3,OH	5	N/A	2024/07/17	BBY6SOP-00026	SM 24 2320 B m
Alkalinity @25C (pp, total), CO3,HCO3,OH	1	N/A	2024/07/19	BBY6SOP-00026	SM 24 2320 B m
Chloride/Sulphate by Auto Colourimetry	6	N/A	2024/07/18	BBY6SOP-00011 / BBY6SOP-00017	SM24-4500-Cl/SO4-E m
Cyanide (total) (1)	4	N/A	2024/07/22	CAL SOP-00270	SM 24 4500-CN m
Color (Apparent) by Automated Analyzer	6	N/A	2024/07/19	BBY6SOP-00057	SM 24 2120-C m
Color (True) by Automated Analyzer	5	N/A	2024/07/17	BBY6SOP-00057	SM 24 2120 C m
Color (True) by Automated Analyzer	1	N/A	2024/07/19	BBY6SOP-00057	SM 24 2120 C m
Carbon (DOC) -Lab Filtered (2)	1	N/A	2024/07/19	BBY6SOP-00053	SM 24 5310 B m
Carbon (DOC) (2)	3	N/A	2024/07/20	BBY6SOP-00053	SM 24 5310 B m
Carbon (DOC) (2)	2	N/A	2024/07/22	BBY6SOP-00053	SM 24 5310 B m
Fluoride	5	N/A	2024/07/17	BBY6SOP-00037	SM 24 4500-F C m
Fluoride	1	N/A	2024/07/19	BBY6SOP-00037	SM 24 4500-F C m
Hardness Total (calculated as CaCO3) (3)	4	N/A	2024/07/19	BBY WI-00033	Auto Calc
Hardness Total (calculated as CaCO3) (3)	1	N/A	2024/07/22	BBY WI-00033	Auto Calc
Hardness Total (calculated as CaCO3) (3)	1	N/A	2024/07/23	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3)	5	N/A	2024/07/18	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3)	1	N/A	2024/07/24	BBY WI-00033	Auto Calc
Mercury (Dissolved) by CV (4)	6	2024/07/22	2024/07/22	BBY7SOP-00032	BCMOE LM 2023 C1.1.3
Mercury (Total) by CV	5	2024/07/22	2024/07/23	BBY7SOP-00032	BCMOE LM 2023 C1.1.3
Mercury (Total) by CV	1	2024/07/23	2024/07/23	BBY7SOP-00032	BCMOE LM 2023 C1.1.3
Ion Ratio (Cation sum/Anion sum)	1	N/A	2024/07/19	BBY WI-00033	Auto Calc
Ion Ratio (Cation sum/Anion sum)	5	N/A	2024/07/22	BBY WI-00033	Auto Calc
Ion Balance	1	N/A	2024/07/19	BBY WI-00033	Auto Calc
Ion Balance	5	N/A	2024/07/22	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	5	N/A	2024/07/18	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	1	N/A	2024/07/24	BBY WI-00033	Auto Calc
Elements by CRC ICPMS (dissolved) (4)	6	N/A	2024/07/18	BBY7SOP-00002	EPA 6020b R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total)	4	2024/07/16	2024/07/19	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (total)	1	2024/07/16	2024/07/22	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (total)	1	2024/07/16	2024/07/23	BBY WI-00033	Auto Calc

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Your Project #: 1905903 TENAS 2024
Your C.O.C. #: C#728282-01-01

Attention: Nathalie Brandebourger

Palmer Environmental Consulting Group (PECG)
#630 – 470 Granville Street
Vancouver, BC
CANADA V6C 1V5

Report Date: 2024/07/24
Report #: R3531668
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C453392
Received: 2024/07/16, 09:30

Sample Matrix: Water
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Elements by CRC ICPMS (total)	4	2024/07/18	2024/07/18	BBY7SOP-00003 / BBY7SOP-00002	EPA 6020b R2 m
Elements by CRC ICPMS (total)	1	2024/07/18	2024/07/20	BBY7SOP-00003 / BBY7SOP-00002	EPA 6020b R2 m
Elements by CRC ICPMS (total)	1	2024/07/20	2024/07/23	BBY7SOP-00003 / BBY7SOP-00002	EPA 6020b R2 m
Nitrogen (Total)	6	N/A	2024/07/19	BBY6SOP-00016	SM 24 4500-N C m
Ammonia-N (Total)	4	N/A	2024/07/22	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate + Nitrite (N)	5	N/A	2024/07/17	BBY6SOP-00010	SM 24 4500-NO3- H m
Nitrate + Nitrite (N)	1	N/A	2024/07/18	BBY6SOP-00010	SM 24 4500-NO3- H m
Nitrite (N) Regular Level Water	5	N/A	2024/07/17	BBY6SOP-00010	SM 24 4500-NO2- m
Nitrite (N) Regular Level Water	1	N/A	2024/07/18	BBY6SOP-00010	SM 24 4500-NO2- m
Nitrogen - Nitrate (as N)	6	N/A	2024/07/19	BBY WI-00033	Auto Calc
pH @25°C (5)	5	N/A	2024/07/17	BBY6SOP-00026	SM 24 4500-H+ B m
pH @25°C (5)	1	N/A	2024/07/19	BBY6SOP-00026	SM 24 4500-H+ B m
Phenols (4-AAP) (1)	6	N/A	2024/07/22	AB SOP-00088	EPA 9066 R0 m
Orthophosphate by Automated Analyzer (6)	6	N/A	2024/07/20	BBY6SOP-00013	SM 24 4500-P E m
Total Dissolved Solids (Filt. Residue)	1	2024/07/18	2024/07/18	BBY6SOP-00033	SM 24 2540 C m
Total Dissolved Solids (Filt. Residue)	5	2024/07/18	2024/07/19	BBY6SOP-00033	SM 24 2540 C m
Total Kjeldahl Nitrogen (Total)	6	N/A	2024/07/19	BBY WI-00033	Auto Calc
Carbon (Total Organic) (7)	6	N/A	2024/07/19	BBY6SOP-00053	SM 24 5310 B m
Total Phosphorus	6	2024/07/17	2024/07/19	BBY6SOP-00013	SM 24 4500-P E m
Total Suspended Solids (NFR)	6	2024/07/17	2024/07/18	BBY6SOP-00034	SM 24 2540 D m
Turbidity	5	N/A	2024/07/17	BBY6SOP-00027	SM 24 2130 B m
Turbidity	1	N/A	2024/07/18	BBY6SOP-00027	SM 24 2130 B m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are

Your Project #: 1905903 TENAS 2024
Your C.O.C. #: C#728282-01-01

Attention: Nathalie Brandebourger

Palmer Environmental Consulting Group (PECG)
#630 – 470 Granville Street
Vancouver, BC
CANADA V6C 1V5

Report Date: 2024/07/24
Report #: R3531668
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C453392
Received: 2024/07/16, 09:30

reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Calgary, 4000 - 19 St. , Calgary, AB, T2E 6P8
(2) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(3) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).
(4) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(5) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas endeavours to analyze samples as soon as possible after receipt.
(6) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(7) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
24 Jul 2024 14:50:00

Please direct all questions regarding this Certificate of Analysis to:
Nahed Amer, Key Account Specialist
Email: Nahed.AMER@bureauveritas.com
Phone# (604) 734 7276

==========

This report has been generated and distributed using a secure automated process.
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Raphael Kwan, Senior Manager, BC and Yukon Regions responsible for British Columbia Environmental laboratory operations.

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CRI441			CRI442		
Sampling Date		2024/07/09 16:00			2024/07/08 14:30		
COC Number		C#728282-01-01			C#728282-01-01		
	UNITS	T19-18S	RDL	QC Batch	T0B96-02-06	RDL	QC Batch
ANIONS							
Nitrite (N)	mg/L	<0.0050	0.0050	B443829	<0.0050	0.0050	B442329
Calculated Parameters							
Dissolved Hardness (CaCO3)	mg/L	219	0.50	B440213	309	0.50	B440213
Total Hardness (CaCO3)	mg/L	216	0.50	B440451	274	0.50	B440451
Ion Balance (% Difference)	%	1.2	N/A	B440608	0.21	N/A	B440608
Ion Ratio (cation sum / anion sum)	N/A	0.98	0.010	B440605	1.0	0.010	B440605
Nitrate (N)	mg/L	<0.020	0.020	B440455	<0.020	0.020	B440455
Total Total Kjeldahl Nitrogen (Calc)	mg/L	3.59	0.10	B440550	0.063	0.020	B440550
Misc. Inorganics							
Strong Acid Dissoc. Cyanide (CN)	mg/L				<0.00050	0.00050	B447922
Dissolved Organic Carbon (C)	mg/L	14	0.50	B446050	1.0	0.50	B446050
pH	pH	8.20	N/A	B444332	8.03	N/A	B442505
Acidity (pH 4.5)	mg/L	<1.0	1.0	B444456	<1.0	1.0	B444456
Total Organic Carbon (C)	mg/L	41	5.0	B446160	0.82	0.50	B446160
Acidity (pH 8.3)	mg/L	<1.0	1.0	B444456	3.3	1.0	B444456
Total Dissolved Solids	mg/L	600	10	B444500	340	10	B443397
Total Suspended Solids	mg/L	9.2	1.0	B442803	25	1.0	B442258
Anions							
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B444278	<1.0	1.0	B442520
Alkalinity (Total as CaCO3)	mg/L	240	1.0	B444278	320	1.0	B442520
Bicarbonate (HCO3)	mg/L	290	1.0	B444278	390	1.0	B442520
Carbonate (CO3)	mg/L	<1.0	1.0	B444278	<1.0	1.0	B442520
Dissolved Fluoride (F)	mg/L	0.18	0.050	B444257	0.086	0.050	B442375
Hydroxide (OH)	mg/L	<1.0	1.0	B444278	<1.0	1.0	B442520
Chloride (Cl)	mg/L	13	1.0	B444245	<1.0	1.0	B442408
Sulphate (SO4)	mg/L	220	5.0	B444245	13	1.0	B442408
MISCELLANEOUS							
True Colour	Col. Unit	15.8	2.0	B446199	<2.0	2.0	B442256
Nutrients							
Total Ammonia (N)	mg/L				<0.015	0.015	B448334
Orthophosphate (P)	mg/L	0.063	0.0030	B446674	0.0042	0.0030	B446674

RDL = Reportable Detection Limit
N/A = Not Applicable

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CRI441			CRI442		
Sampling Date		2024/07/09 16:00			2024/07/08 14:30		
COC Number		C#728282-01-01			C#728282-01-01		
	UNITS	**T19-18S**	**RDL**	**QC Batch**	**T0B96-02-06**	**RDL**	**QC Batch**
Total Phosphorus (P)	mg/L	1.3	0.015	B442178	0.0056	0.0030	B442178
Nitrate plus Nitrite (N)	mg/L	<0.020	0.020	B443802	<0.020	0.020	B442322
Total Nitrogen (N)	mg/L	3.59	0.10	B443545	0.063	0.020	B443545
Misc. Organics							
Phenols	mg/L	0.0043	0.0015	B447464	<0.0015	0.0015	B447464
Physical Properties							
Turbidity	NTU	9.8	0.10	B443699	380	0.10	B442470
Apparent Colour	PtCo units	32	2.0	B445995	9.8	2.0	B445995
RDL = Reportable Detection Limit							

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CRI443			CRI444		CRI445		
Sampling Date		2024/07/09 17:30			2024/07/09 12:00		2024/07/08 18:00		
COC Number		C#728282-01-01			C#728282-01-01		C#728282-01-01		
	UNITS	T0B96-01-05	RDL	QC Batch	T95R-40	QC Batch	T18-01D	RDL	QC Batch
ANIONS									
Nitrite (N)	mg/L	<0.0050	0.0050	B442329	<0.0050	B442329	0.0062	0.0050	B442329
Calculated Parameters									
Dissolved Hardness (CaCO3)	mg/L	357	0.50	B449714	112	B440213	9.34	0.50	B440213
Total Hardness (CaCO3)	mg/L	312	0.50	B440451	101	B440451	11.4	0.50	B440451
Ion Balance (% Difference)	%	2.3	N/A	B440608	1.3	B440608	3.5	N/A	B440608
Ion Ratio (cation sum / anion sum)	N/A	1.0	0.010	B440605	1.0	B440605	1.1	0.010	B440605
Nitrate (N)	mg/L	<0.020	0.020	B440455	<0.020	B440455	<0.020	0.020	B440455
Total Total Kjeldahl Nitrogen (Calc)	mg/L	0.481	0.020	B440550	0.926	B440550	1.49	0.020	B440550
Misc. Inorganics									
Strong Acid Dissoc. Cyanide (CN)	mg/L				<0.00050	B447922	<0.00050	0.00050	B447922
Dissolved Organic Carbon (C)	mg/L				0.80	B446050	2.3	0.50	B447471
pH	pH	7.91	N/A	B442505	7.96	B442505	8.44	N/A	B442505
Acidity (pH 4.5)	mg/L	<1.0	1.0	B445389	<1.0	B444339	<1.0	1.0	B444339
Total Organic Carbon (C)	mg/L	90	0.50	B446160	0.95	B446160	2.6	0.50	B446160
Acidity (pH 8.3)	mg/L	<1.0	1.0	B445389	2.1	B444339	<1.0	1.0	B444339
Total Dissolved Solids	mg/L	420	10	B443397	1800	B443397	790	10	B443397
Total Suspended Solids	mg/L	57	1.0	B442803	17	B442258	42	1.0	B442258
Lab Filtered Inorganics									
Dissolved Organic Carbon (C)	mg/L	91 (1)	0.50	B445386					
Anions									
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B442520	<1.0	B442520	21	1.0	B442520
Alkalinity (Total as CaCO3)	mg/L	340	1.0	B442520	1700	B442520	610	1.0	B442520
Bicarbonate (HCO3)	mg/L	410	1.0	B442520	2000	B442520	690	1.0	B442520
Carbonate (CO3)	mg/L	<1.0	1.0	B442520	<1.0	B442520	25	1.0	B442520
Dissolved Fluoride (F)	mg/L	0.070	0.050	B442375	0.49	B442375	2.1	0.050	B442375
Hydroxide (OH)	mg/L	<1.0	1.0	B442520	<1.0	B442520	<1.0	1.0	B442520
Chloride (Cl)	mg/L	<1.0	1.0	B442408	12	B442408	15	1.0	B442408
Sulphate (SO4)	mg/L	41	1.0	B442408	10	B442408	25	1.0	B442408
MISCELLANEOUS									
True Colour	Col. Unit	16.9	2.0	B442256	<2.0	B442323	3.4	2.0	B442323

RDL = Reportable Detection Limit
N/A = Not Applicable
(1) Sample filtered and preserved past method specified hold time

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CRI443			CRI444		CRI445		
Sampling Date		2024/07/09 17:30			2024/07/09 12:00		2024/07/08 18:00		
COC Number		C#728282-01-01			C#728282-01-01		C#728282-01-01		
	UNITS	T0B96-01-05	RDL	QC Batch	T95R-40	QC Batch	T18-01D	RDL	QC Batch
Nutrients									
Total Ammonia (N)	mg/L				0.60	B448334	0.37	0.015	B448334
Orthophosphate (P)	mg/L	0.0077 (1)	0.0030	B446674	0.0074	B446674	0.0043	0.0030	B446715
Total Phosphorus (P)	mg/L	0.065	0.0030	B442178	0.087	B442178	0.080	0.0030	B442178
Nitrate plus Nitrite (N)	mg/L	<0.020	0.020	B442322	<0.020	B442322	<0.020	0.020	B442322
Total Nitrogen (N)	mg/L	0.481	0.020	B443545	0.926	B443545	1.49	0.020	B443545
Misc. Organics									
Phenols	mg/L	<0.0015	0.0015	B447464	<0.0015	B447464	<0.0015	0.0015	B447464
Physical Properties									
Turbidity	NTU	31	0.10	B442470	0.63	B442470	4.9	0.10	B442470
Apparent Colour	PtCo units	12	2.0	B445995	2.4	B445995	39	2.0	B445995

RDL = Reportable Detection Limit
(1) Matrix spike exceeds acceptance limits due to matrix interference.

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CRI446		
Sampling Date		2024/07/08 18:00		
COC Number		C#728282-01-01		
	UNITS	DUP-B	RDL	QC Batch
ANIONS				
Nitrite (N)	mg/L	<0.0050	0.0050	B442329
Calculated Parameters				
Dissolved Hardness (CaCO3)	mg/L	9.34	0.50	B440213
Total Hardness (CaCO3)	mg/L	11.6	0.50	B440451
Ion Balance (% Difference)	%	3.8	N/A	B440608
Ion Ratio (cation sum / anion sum)	N/A	1.1	0.010	B440605
Nitrate (N)	mg/L	<0.020	0.020	B440455
Total Total Kjeldahl Nitrogen (Calc)	mg/L	0.730	0.020	B440550
Misc. Inorganics				
Strong Acid Dissoc. Cyanide (CN)	mg/L	<0.00050	0.00050	B447922
Dissolved Organic Carbon (C)	mg/L	2.4	0.50	B447471
pH	pH	8.38	N/A	B442505
Acidity (pH 4.5)	mg/L	<1.0	1.0	B444339
Total Organic Carbon (C)	mg/L	2.4	0.50	B446160
Acidity (pH 8.3)	mg/L	<1.0	1.0	B444339
Total Dissolved Solids	mg/L	790	10	B443397
Total Suspended Solids	mg/L	26	1.0	B442258
Anions				
Alkalinity (PP as CaCO3)	mg/L	19	1.0	B442520
Alkalinity (Total as CaCO3)	mg/L	620	1.0	B442520
Bicarbonate (HCO3)	mg/L	710	1.0	B442520
Carbonate (CO3)	mg/L	23	1.0	B442520
Dissolved Fluoride (F)	mg/L	2.2	0.050	B442375
Hydroxide (OH)	mg/L	<1.0	1.0	B442520
Chloride (Cl)	mg/L	15	1.0	B442408
Sulphate (SO4)	mg/L	25	1.0	B442408
MISCELLANEOUS				
True Colour	Col. Unit	3.1	2.0	B442323
Nutrients				
Total Ammonia (N)	mg/L	0.37	0.015	B448334
Orthophosphate (P)	mg/L	0.012	0.0030	B446674

RDL = Reportable Detection Limit
N/A = Not Applicable

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CRI446		
Sampling Date		2024/07/08 18:00		
COC Number		C#728282-01-01		
	UNITS	**DUP-B**	**RDL**	**QC Batch**
Total Phosphorus (P)	mg/L	0.052	0.0030	B442178
Nitrate plus Nitrite (N)	mg/L	<0.020	0.020	B442322
Total Nitrogen (N)	mg/L	0.730	0.020	B443545
Misc. Organics				
Phenols	mg/L	<0.0015	0.0015	B447464
Physical Properties				
Turbidity	NTU	3.9	0.10	B442470
Apparent Colour	PtCo units	34	2.0	B445995
RDL = Reportable Detection Limit				

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CRI441			CRI442	CRI443	CRI444		
Sampling Date		2024/07/09 16:00			2024/07/08 14:30	2024/07/09 17:30	2024/07/09 12:00		
COC Number		C#728282-01-01			C#728282-01-01	C#728282-01-01	C#728282-01-01		
	UNITS	T19-18S	RDL	QC Batch	T0B96-02-06	T0B96-01-05	T95R-40	RDL	QC Batch
Elements									
Dissolved Mercury (Hg)	ug/L	<0.0019	0.0019	B447719	<0.0019	0.0035 (1)	<0.0019	0.0019	B447719
Total Mercury (Hg)	ug/L	<0.0095 (2)	0.0095	B449571	<0.0019	<0.0019 (1)	<0.0019	0.0019	B448098

RDL = Reportable Detection Limit
(1) Sample received was not in compliance with BC CSR sampling requirements for Mercury in water.
(2) RDL raised due to limited sample volume. Sample received was not in compliance with BC CSR sampling requirements for Mercury in water.

Bureau Veritas ID		CRI445	CRI446		
Sampling Date		2024/07/08 18:00	2024/07/08 18:00		
COC Number		C#728282-01-01	C#728282-01-01		
	UNITS	T18-01D	DUP-B	RDL	QC Batch
Elements					
Dissolved Mercury (Hg)	ug/L	<0.0019	<0.0019	0.0019	B447719
Total Mercury (Hg)	ug/L	<0.0019	<0.0019	0.0019	B448098

RDL = Reportable Detection Limit

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CRI441			CRI442		CRI443		
Sampling Date		2024/07/09 16:00			2024/07/08 14:30		2024/07/09 17:30		
COC Number		C#728282-01-01			C#728282-01-01		C#728282-01-01		
	UNITS	T19-18S	RDL	QC Batch	T0B96-02-06	QC Batch	T0B96-01-05	RDL	QC Batch
Dissolved Metals by ICPMS									
Dissolved Aluminum (Al)	ug/L	<3.0	3.0	B442119	<3.0	B442119	5.9	3.0	B442119
Dissolved Antimony (Sb)	ug/L	0.75	0.50	B442119	<0.50	B442119	0.51	0.50	B442119
Dissolved Arsenic (As)	ug/L	2.79	0.10	B442119	0.14	B442119	1.11	0.10	B442119
Dissolved Barium (Ba)	ug/L	82.4	1.0	B442119	128	B442119	175	1.0	B442119
Dissolved Beryllium (Be)	ug/L	<0.10	0.10	B442119	<0.10	B442119	<0.10	0.10	B442119
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	B442119	<1.0	B442119	<1.0	1.0	B442119
Dissolved Boron (B)	ug/L	69	50	B442119	<50	B442119	<50	50	B442119
Dissolved Cadmium (Cd)	ug/L	<0.010	0.010	B442119	0.021	B442119	0.015	0.010	B442119
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	B442119	<1.0	B442119	<1.0	1.0	B442119
Dissolved Cobalt (Co)	ug/L	<0.20	0.20	B442119	<0.20	B442119	0.90	0.20	B442119
Dissolved Copper (Cu)	ug/L	0.44	0.20	B442119	0.54	B442119	1.03	0.20	B442119
Dissolved Iron (Fe)	ug/L	177	5.0	B450485	<5.0	B442119	21.4	5.0	B442119
Dissolved Lead (Pb)	ug/L	<0.20	0.20	B442119	<0.20	B442119	<0.20	0.20	B442119
Dissolved Lithium (Li)	ug/L	3.8	2.0	B442119	4.2	B442119	2.9	2.0	B442119
Dissolved Manganese (Mn)	ug/L	585	1.0	B450485	33.9	B442119	350	1.0	B442119
Dissolved Molybdenum (Mo)	ug/L	15.1	1.0	B442119	<1.0	B442119	1.3	1.0	B442119
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	B442119	<1.0	B442119	2.4	1.0	B442119
Dissolved Phosphorus (P)	ug/L	12	10	B442119	<10	B442119	16	10	B442119
Dissolved Selenium (Se)	ug/L	<0.10	0.10	B442119	<0.10	B442119	0.11	0.10	B442119
Dissolved Silicon (Si)	ug/L	4430	100	B442119	5820	B442119	4690	100	B442119
Dissolved Silver (Ag)	ug/L	<0.020	0.020	B442119	<0.020	B442119	<0.020	0.020	B442119
Dissolved Strontium (Sr)	ug/L	575	1.0	B442119	449	B442119	596	1.0	B442119
Dissolved Thallium (Tl)	ug/L	<0.010	0.010	B442119	<0.010	B442119	<0.010	0.010	B442119
Dissolved Tin (Sn)	ug/L	<5.0	5.0	B442119	<5.0	B442119	<5.0	5.0	B442119
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	B442119	<5.0	B442119	<5.0	5.0	B442119
Dissolved Tungsten (W)	ug/L	<1.0	1.0	B442119	<1.0	B442119	<1.0	1.0	B442119
Dissolved Uranium (U)	ug/L	1.02	0.10	B442119	1.14	B442119	2.36	0.10	B442119
Dissolved Vanadium (V)	ug/L	<5.0	5.0	B442119	<5.0	B442119	<5.0	5.0	B442119
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	B442119	<5.0	B442119	<5.0	5.0	B442119
Dissolved Zirconium (Zr)	ug/L	<0.10	0.10	B442119	<0.10	B442119	0.30	0.10	B442119
Dissolved Calcium (Ca)	mg/L	53.9	0.050	B440542	80.0	B440542	90.9	0.050	B449739
Dissolved Magnesium (Mg)	mg/L	20.5	0.050	B440542	26.5	B440542	31.6	0.050	B449739
Dissolved Potassium (K)	mg/L	1.88	0.050	B440542	0.897	B440542	1.19	0.050	B449739

RDL = Reportable Detection Limit

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ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CRI441			CRI442		CRI443		
Sampling Date		2024/07/09 16:00			2024/07/08 14:30		2024/07/09 17:30		
COC Number		C#728282-01-01			C#728282-01-01		C#728282-01-01		
	UNITS	T19-18S	RDL	QC Batch	T0B96-02-06	QC Batch	T0B96-01-05	RDL	QC Batch
Dissolved Sodium (Na)	mg/L	114	0.050	B440542	11.4	B440542	20.7	0.050	B449739
Dissolved Sulphur (S)	mg/L	77.6	3.0	B440542	4.2	B440542	17.5	3.0	B449739
Total Metals by ICPMS									
Total Aluminum (Al)	ug/L	158	15	B446570	326	B443191	744	3.0	B443191
Total Antimony (Sb)	ug/L	<2.5	2.5	B446570	<0.50	B443191	0.53	0.50	B443191
Total Arsenic (As)	ug/L	3.55	0.50	B446570	0.21	B443191	0.96	0.10	B443191
Total Barium (Ba)	ug/L	78.7	5.0	B446570	119	B443191	174	1.0	B443191
Total Beryllium (Be)	ug/L	<0.50	0.50	B446570	<0.10	B443191	<0.10	0.10	B443191
Total Bismuth (Bi)	ug/L	<5.0	5.0	B446570	<1.0	B443191	<1.0	1.0	B443191
Total Boron (B)	ug/L	<250	250	B446570	<50	B443191	<50	50	B443191
Total Cadmium (Cd)	ug/L	0.053	0.050	B446570	0.024	B443191	0.099	0.010	B443191
Total Chromium (Cr)	ug/L	<5.0	5.0	B446570	<1.0	B443191	<1.0	1.0	B443191
Total Cobalt (Co)	ug/L	<1.0	1.0	B446570	<0.20	B443191	0.60	0.20	B443191
Total Copper (Cu)	ug/L	3.7	2.5	B446570	<0.50	B443191	3.77	0.50	B443191
Total Iron (Fe)	ug/L	<50	50	B446570	174	B443191	550	10	B443191
Total Lead (Pb)	ug/L	<1.0	1.0	B446570	0.38	B443191	0.95	0.20	B443191
Total Lithium (Li)	ug/L	<10	10	B446570	3.6	B443191	2.9	2.0	B443191
Total Manganese (Mn)	ug/L	385	5.0	B446570	91.1	B443191	299	1.0	B443191
Total Molybdenum (Mo)	ug/L	7.6	5.0	B446570	<1.0	B443191	1.4	1.0	B443191
Total Nickel (Ni)	ug/L	<5.0	5.0	B446570	<1.0	B443191	2.6	1.0	B443191
Total Phosphorus (P)	ug/L	563	50	B446570	<10	B443191	37	10	B443191
Total Selenium (Se)	ug/L	<0.50	0.50	B446570	<0.10	B443191	0.15	0.10	B443191
Total Silicon (Si)	ug/L	4950	500	B446570	6240	B443191	5660	100	B443191
Total Silver (Ag)	ug/L	<0.10	0.10	B446570	<0.020	B443191	0.026	0.020	B443191
Total Strontium (Sr)	ug/L	489	5.0	B446570	423	B443191	547	1.0	B443191
Total Thallium (Tl)	ug/L	<0.050	0.050	B446570	<0.010	B443191	0.017	0.010	B443191
Total Tin (Sn)	ug/L	<25	25	B446570	<5.0	B443191	<5.0	5.0	B443191
Total Titanium (Ti)	ug/L	<25	25	B446570	6.5	B443191	14.7	5.0	B443191
Total Tungsten (W)	ug/L	<5.0	5.0	B446570	<1.0	B443191	<1.0	1.0	B443191
Total Uranium (U)	ug/L	0.93	0.50	B446570	1.25	B443191	2.88	0.10	B443191
Total Vanadium (V)	ug/L	<25	25	B446570	<5.0	B443191	<5.0	5.0	B443191
Total Zinc (Zn)	ug/L	<25	25	B446570	<5.0	B443191	6.6	5.0	B443191
Total Zirconium (Zr)	ug/L	<0.50	0.50	B446570	0.34	B443191	0.80	0.10	B443191
Total Calcium (Ca)	mg/L	52.7	0.25	B440690	72.2	B440690	78.7	0.050	B440690
RDL = Reportable Detection Limit									

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CRI441			CRI442		CRI443		
Sampling Date		2024/07/09 16:00			2024/07/08 14:30		2024/07/09 17:30		
COC Number		C#728282-01-01			C#728282-01-01		C#728282-01-01		
	UNITS	**T19-18S**	**RDL**	**QC Batch**	**T0B96-02-06**	**QC Batch**	**T0B96-01-05**	**RDL**	**QC Batch**
Total Magnesium (Mg)	mg/L	20.5	0.25	B440690	22.8	B440690	28.1	0.050	B440690
Total Potassium (K)	mg/L	3.34	0.25	B440690	0.828	B440690	1.11	0.050	B440690
Total Sodium (Na)	mg/L	127	0.25	B440690	10.1	B440690	18.4	0.050	B440690
Total Sulphur (S)	mg/L	73	15	B440690	3.8	B440690	12.0	3.0	B440690
RDL = Reportable Detection Limit									

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ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CRI444		CRI445		CRI446		
Sampling Date		2024/07/09 12:00		2024/07/08 18:00		2024/07/08 18:00		
COC Number		C#728282-01-01		C#728282-01-01		C#728282-01-01		
	UNITS	T95R-40	RDL	T18-01D	QC Batch	DUP-B	RDL	QC Batch
Dissolved Metals by ICPMS								
Dissolved Aluminum (Al)	ug/L	<30	30	5.9	B442119	6.4	3.0	B442119
Dissolved Antimony (Sb)	ug/L	<5.0	5.0	<0.50	B442119	<0.50	0.50	B442119
Dissolved Arsenic (As)	ug/L	<1.0	1.0	8.25	B442119	8.47	0.10	B442119
Dissolved Barium (Ba)	ug/L	4920	10	97.3	B442119	98.3	1.0	B442119
Dissolved Beryllium (Be)	ug/L	<1.0	1.0	<0.10	B442119	<0.10	0.10	B442119
Dissolved Bismuth (Bi)	ug/L	<10	10	<1.0	B442119	<1.0	1.0	B442119
Dissolved Boron (B)	ug/L	<500	500	128	B442119	132	50	B442119
Dissolved Cadmium (Cd)	ug/L	<0.10	0.10	<0.010	B442119	<0.010	0.010	B442119
Dissolved Chromium (Cr)	ug/L	<10	10	<1.0	B442119	<1.0	1.0	B442119
Dissolved Cobalt (Co)	ug/L	<2.0	2.0	<0.20	B442119	<0.20	0.20	B442119
Dissolved Copper (Cu)	ug/L	<2.0	2.0	0.25	B442119	<0.20	0.20	B442119
Dissolved Iron (Fe)	ug/L	90	50	37.3	B442119	22.4	5.0	B442119
Dissolved Lead (Pb)	ug/L	<2.0	2.0	<0.20	B442119	<0.20	0.20	B442119
Dissolved Lithium (Li)	ug/L	127	20	46.9	B442119	47.3	2.0	B442119
Dissolved Manganese (Mn)	ug/L	28	10	3.3	B442119	3.2	1.0	B442119
Dissolved Molybdenum (Mo)	ug/L	<10	10	13.5	B442119	13.6	1.0	B442119
Dissolved Nickel (Ni)	ug/L	<10	10	<1.0	B442119	<1.0	1.0	B442119
Dissolved Phosphorus (P)	ug/L	<100	100	16	B442119	16	10	B442119
Dissolved Selenium (Se)	ug/L	<1.0	1.0	<0.10	B442119	<0.10	0.10	B442119
Dissolved Silicon (Si)	ug/L	3330	1000	9700	B442119	9760	100	B442119
Dissolved Silver (Ag)	ug/L	<0.20	0.20	<0.020	B442119	<0.020	0.020	B442119
Dissolved Strontium (Sr)	ug/L	664	10	100	B442119	104	1.0	B442119
Dissolved Thallium (Tl)	ug/L	<0.10	0.10	<0.010	B442119	<0.010	0.010	B442119
Dissolved Tin (Sn)	ug/L	<50	50	<5.0	B442119	<5.0	5.0	B442119
Dissolved Titanium (Ti)	ug/L	<50	50	<5.0	B442119	<5.0	5.0	B442119
Dissolved Tungsten (W)	ug/L	<10	10	1.1	B442119	1.1	1.0	B442119
Dissolved Uranium (U)	ug/L	<1.0	1.0	4.29	B442119	4.41	0.10	B442119
Dissolved Vanadium (V)	ug/L	<50	50	<5.0	B442119	<5.0	5.0	B442119
Dissolved Zinc (Zn)	ug/L	<50	50	<5.0	B442119	<5.0	5.0	B442119
Dissolved Zirconium (Zr)	ug/L	<1.0	1.0	0.76	B442119	0.81	0.10	B442119
Dissolved Calcium (Ca)	mg/L	33.0	0.50	2.64	B440542	2.64	0.050	B440542
Dissolved Magnesium (Mg)	mg/L	7.14	0.50	0.670	B440542	0.670	0.050	B440542
Dissolved Potassium (K)	mg/L	3.14	0.50	2.44	B440542	2.48	0.050	B440542
RDL = Reportable Detection Limit								

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CRI444		CRI445		CRI446		
Sampling Date		2024/07/09 12:00		2024/07/08 18:00		2024/07/08 18:00		
COC Number		C#728282-01-01		C#728282-01-01		C#728282-01-01		
	UNITS	T95R-40	RDL	T18-01D	QC Batch	DUP-B	RDL	QC Batch
Dissolved Sodium (Na)	mg/L	738	0.50	321	B440542	326	0.050	B440542
Dissolved Sulphur (S)	mg/L	<30	30	7.1	B440542	7.2	3.0	B440542
Total Metals by ICPMS								
Total Aluminum (Al)	ug/L	75	30	1240	B443191	838	3.0	B443197
Total Antimony (Sb)	ug/L	<5.0	5.0	0.93	B443191	0.76	0.50	B443197
Total Arsenic (As)	ug/L	<1.0	1.0	8.49	B443191	8.59	0.10	B443197
Total Barium (Ba)	ug/L	4820	10	120	B443191	120	1.0	B443197
Total Beryllium (Be)	ug/L	<1.0	1.0	0.10	B443191	<0.10	0.10	B443197
Total Bismuth (Bi)	ug/L	<10	10	<1.0	B443191	<1.0	1.0	B443197
Total Boron (B)	ug/L	<500	500	112	B443191	127	50	B443197
Total Cadmium (Cd)	ug/L	<0.10	0.10	<0.010	B443191	0.013	0.010	B443197
Total Chromium (Cr)	ug/L	<10	10	<1.0	B443191	<1.0	1.0	B443197
Total Cobalt (Co)	ug/L	<2.0	2.0	0.22	B443191	0.20	0.20	B443197
Total Copper (Cu)	ug/L	<5.0	5.0	1.09	B443191	1.00	0.50	B443197
Total Iron (Fe)	ug/L	631	100	872	B443191	786	10	B443197
Total Lead (Pb)	ug/L	39.3	2.0	3.36	B443191	3.62	0.20	B443197
Total Lithium (Li)	ug/L	114	20	41.1	B443191	42.5	2.0	B443197
Total Manganese (Mn)	ug/L	30	10	14.0	B443191	14.7	1.0	B443197
Total Molybdenum (Mo)	ug/L	<10	10	12.2	B443191	12.4	1.0	B443197
Total Nickel (Ni)	ug/L	<10	10	<1.0	B443191	<1.0	1.0	B443197
Total Phosphorus (P)	ug/L	<100	100	49	B443191	39	10	B443197
Total Selenium (Se)	ug/L	<1.0	1.0	<0.10	B443191	<0.10	0.10	B443197
Total Silicon (Si)	ug/L	3300	1000	12300	B443191	11100	100	B443197
Total Silver (Ag)	ug/L	<0.20	0.20	<0.020	B443191	<0.020	0.020	B443197
Total Strontium (Sr)	ug/L	662	10	116	B443191	116	1.0	B443197
Total Thallium (Tl)	ug/L	<0.10	0.10	0.016	B443191	0.018	0.010	B443197
Total Tin (Sn)	ug/L	<50	50	<5.0	B443191	<5.0	5.0	B443197
Total Titanium (Ti)	ug/L	<50	50	11.3	B443191	8.3	5.0	B443197
Total Tungsten (W)	ug/L	<10	10	1.5	B443191	1.3	1.0	B443197
Total Uranium (U)	ug/L	<1.0	1.0	5.24	B443191	4.96	0.10	B443197
Total Vanadium (V)	ug/L	<50	50	<5.0	B443191	<5.0	5.0	B443197
Total Zinc (Zn)	ug/L	<50	50	5.9	B443191	5.8	5.0	B443197
Total Zirconium (Zr)	ug/L	<1.0	1.0	1.25	B443191	0.97	0.10	B443197
Total Calcium (Ca)	mg/L	30.1	0.50	3.03	B440690	3.11	0.050	B440690

RDL = Reportable Detection Limit

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ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CRI444		CRI445		CRI446		
Sampling Date		2024/07/09 12:00		2024/07/08 18:00		2024/07/08 18:00		
COC Number		C#728282-01-01		C#728282-01-01		C#728282-01-01		
	UNITS	**T95R-40**	**RDL**	**T18-01D**	**QC Batch**	**DUP-B**	**RDL**	**QC Batch**
Total Magnesium (Mg)	mg/L	6.35	0.50	0.929	B440690	0.921	0.050	B440690
Total Potassium (K)	mg/L	2.95	0.50	2.32	B440690	2.35	0.050	B440690
Total Sodium (Na)	mg/L	645	0.50	276	B440690	292	0.050	B440690
Total Sulphur (S)	mg/L	<30	30	6.0	B440690	6.6	3.0	B440690
RDL = Reportable Detection Limit								

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GENERAL COMMENTS

Sample CRI441 [T19-18S] : Sample was analyzed past method specified hold time for Total Suspended Solids (NFR). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample received past method specified hold time for Nitrate + Nitrite (N). Sample received past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Total Dissolved Solids (Filt. Residue). Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Sample was analyzed past method specified hold time for Nitrite (N) Regular Level Water. Sample received past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for Color (True) by Automated Analyzer.

Sample CRI442 [T0B96-02-06] : Sample received past method specified hold time for Nitrate + Nitrite (N). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample received past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Turbidity. Sample received past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Total Suspended Solids (NFR). Sample was analyzed past method specified hold time for Total Dissolved Solids (Filt. Residue). Sample was analyzed past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Sample was analyzed past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer.

Sample CRI443 [T0B96-01-05] : Sample received past method specified hold time for Nitrate + Nitrite (N). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample received past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Turbidity. Sample received past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Total Dissolved Solids (Filt. Residue). Sample was analyzed past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Total Suspended Solids (NFR). Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Sample was analyzed past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer.

Sample CRI444 [T95R-40] : Sample received past method specified hold time for Nitrate + Nitrite (N). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample received past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Turbidity. Sample received past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Total Suspended Solids (NFR). Sample was analyzed past method specified hold time for Total Dissolved Solids (Filt. Residue). Sample was analyzed past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Sample was analyzed past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer.

Sample CRI445 [T18-01D] : Sample received past method specified hold time for Nitrate + Nitrite (N). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample received past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Turbidity. Sample received past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Total Suspended Solids (NFR). Sample was analyzed past method specified hold time for Total Dissolved Solids (Filt. Residue). Sample was analyzed past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Sample was analyzed past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer.

Sample CRI446 [DUP-B] : Sample received past method specified hold time for Nitrate + Nitrite (N). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample received past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Turbidity. Sample received past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Total Suspended Solids (NFR). Sample was analyzed past method specified hold time for Total Dissolved Solids (Filt. Residue). Sample was analyzed past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Sample was analyzed past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer.

Sample CRI441, Elements by CRC ICPMS (dissolved): Test repeated.

Results relate only to the items tested.

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			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B442119	Dissolved Aluminum (Al)	2024/07/18	97	80 - 120	101	80 - 120	<3.0	ug/L	1.3	20
B442119	Dissolved Antimony (Sb)	2024/07/18	96	80 - 120	102	80 - 120	<0.50	ug/L	0.96	20
B442119	Dissolved Arsenic (As)	2024/07/18	100	80 - 120	101	80 - 120	<0.10	ug/L	1.4	20
B442119	Dissolved Barium (Ba)	2024/07/18	NC	80 - 120	100	80 - 120	<1.0	ug/L	0.77	20
B442119	Dissolved Beryllium (Be)	2024/07/18	93	80 - 120	97	80 - 120	<0.10	ug/L	NC	20
B442119	Dissolved Bismuth (Bi)	2024/07/18	92	80 - 120	97	80 - 120	<1.0	ug/L	NC	20
B442119	Dissolved Boron (B)	2024/07/18	93	80 - 120	97	80 - 120	<50	ug/L	NC	20
B442119	Dissolved Cadmium (Cd)	2024/07/18	97	80 - 120	101	80 - 120	<0.010	ug/L	2.9	20
B442119	Dissolved Chromium (Cr)	2024/07/18	88	80 - 120	93	80 - 120	<1.0	ug/L	NC	20
B442119	Dissolved Cobalt (Co)	2024/07/18	87	80 - 120	95	80 - 120	<0.20	ug/L	NC	20
B442119	Dissolved Copper (Cu)	2024/07/18	87	80 - 120	94	80 - 120	<0.20	ug/L	1.4	20
B442119	Dissolved Iron (Fe)	2024/07/18	97	80 - 120	100	80 - 120	<5.0	ug/L	NC	20
B442119	Dissolved Lead (Pb)	2024/07/18	93	80 - 120	97	80 - 120	<0.20	ug/L	NC	20
B442119	Dissolved Lithium (Li)	2024/07/18	96	80 - 120	100	80 - 120	<2.0	ug/L	NC	20
B442119	Dissolved Manganese (Mn)	2024/07/18	91	80 - 120	97	80 - 120	<1.0	ug/L	0.70	20
B442119	Dissolved Molybdenum (Mo)	2024/07/18	106	80 - 120	104	80 - 120	<1.0	ug/L	NC	20
B442119	Dissolved Nickel (Ni)	2024/07/18	90	80 - 120	97	80 - 120	<1.0	ug/L	1.4	20
B442119	Dissolved Phosphorus (P)	2024/07/18	103	80 - 120	102	80 - 120	<10	ug/L	NC	20
B442119	Dissolved Selenium (Se)	2024/07/18	96	80 - 120	101	80 - 120	<0.10	ug/L	0.56	20
B442119	Dissolved Silicon (Si)	2024/07/18	99	80 - 120	104	80 - 120	<100	ug/L	2.7	20
B442119	Dissolved Silver (Ag)	2024/07/18	96	80 - 120	99	80 - 120	<0.020	ug/L	NC	20
B442119	Dissolved Strontium (Sr)	2024/07/18	NC	80 - 120	97	80 - 120	<1.0	ug/L	1.5	20
B442119	Dissolved Thallium (Tl)	2024/07/18	95	80 - 120	99	80 - 120	<0.010	ug/L	1.5	20
B442119	Dissolved Tin (Sn)	2024/07/18	98	80 - 120	102	80 - 120	<5.0	ug/L	NC	20
B442119	Dissolved Titanium (Ti)	2024/07/18	95	80 - 120	98	80 - 120	<5.0	ug/L	NC	20
B442119	Dissolved Tungsten (W)	2024/07/18	99	80 - 120	102	80 - 120	<1.0	ug/L		
B442119	Dissolved Uranium (U)	2024/07/18	98	80 - 120	102	80 - 120	<0.10	ug/L	2.6	20
B442119	Dissolved Vanadium (V)	2024/07/18	93	80 - 120	96	80 - 120	<5.0	ug/L	NC	20
B442119	Dissolved Zinc (Zn)	2024/07/18	NC	80 - 120	99	80 - 120	<5.0	ug/L	0.48	20
B442119	Dissolved Zirconium (Zr)	2024/07/18	102	80 - 120	101	80 - 120	<0.10	ug/L	NC	20
B442178	Total Phosphorus (P)	2024/07/19	111	N/A	102	80 - 120	<0.0030	mg/L	NC	20
B442256	True Colour	2024/07/17			103	80 - 120	<2.0	Col. Unit	NC	20
B442258	Total Suspended Solids	2024/07/18	100	80 - 120	98	80 - 120	<1.0	mg/L	12	20

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			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B442322	Nitrate plus Nitrite (N)	2024/07/17	NC	80 - 120	108	80 - 120	<0.020	mg/L	1.1	25
B442323	True Colour	2024/07/17			111	80 - 120	<2.0	Col. Unit	NC	20
B442329	Nitrite (N)	2024/07/17	NC	80 - 120	105	80 - 120	<0.0050	mg/L	0.31	20
B442375	Dissolved Fluoride (F)	2024/07/17	NC	80 - 120	91	80 - 120	<0.050	mg/L	0.88	20
B442408	Chloride (Cl)	2024/07/18	106	80 - 120	102	80 - 120	<1.0	mg/L	NC	20
B442408	Sulphate (SO4)	2024/07/18	99	80 - 120	100	80 - 120	<1.0	mg/L	1.2	20
B442470	Turbidity	2024/07/17			104	80 - 120	<0.10	NTU	8.8	20
B442505	pH	2024/07/17			100	97 - 103			1.4	N/A
B442520	Alkalinity (PP as CaCO3)	2024/07/17					<1.0	mg/L	NC	20
B442520	Alkalinity (Total as CaCO3)	2024/07/17			96	80 - 120	<1.0	mg/L	0.19	20
B442520	Bicarbonate (HCO3)	2024/07/17					<1.0	mg/L	0.19	20
B442520	Carbonate (CO3)	2024/07/17					<1.0	mg/L	NC	20
B442520	Hydroxide (OH)	2024/07/17					<1.0	mg/L	NC	20
B442803	Total Suspended Solids	2024/07/18	104	80 - 120	100	80 - 120	<1.0	mg/L	NC	20
B443191	Total Aluminum (Al)	2024/07/18	103	80 - 120	99	80 - 120	<3.0	ug/L	0.60	20
B443191	Total Antimony (Sb)	2024/07/18	102	80 - 120	103	80 - 120	<0.50	ug/L	NC	20
B443191	Total Arsenic (As)	2024/07/18	103	80 - 120	104	80 - 120	<0.10	ug/L	4.1	20
B443191	Total Barium (Ba)	2024/07/18	99	80 - 120	101	80 - 120	<1.0	ug/L	2.4	20
B443191	Total Beryllium (Be)	2024/07/18	104	80 - 120	103	80 - 120	<0.10	ug/L	NC	20
B443191	Total Bismuth (Bi)	2024/07/18	97	80 - 120	102	80 - 120	<1.0	ug/L	NC	20
B443191	Total Boron (B)	2024/07/18	101	80 - 120	98	80 - 120	<50	ug/L	NC	20
B443191	Total Cadmium (Cd)	2024/07/18	102	80 - 120	103	80 - 120	<0.010	ug/L	NC	20
B443191	Total Chromium (Cr)	2024/07/18	99	80 - 120	104	80 - 120	<1.0	ug/L	NC	20
B443191	Total Cobalt (Co)	2024/07/18	94	80 - 120	99	80 - 120	<0.20	ug/L	NC	20
B443191	Total Copper (Cu)	2024/07/18	94	80 - 120	99	80 - 120	<0.50	ug/L	6.0	20
B443191	Total Iron (Fe)	2024/07/18	102	80 - 120	110	80 - 120	<10	ug/L	0.22	20
B443191	Total Lead (Pb)	2024/07/18	99	80 - 120	102	80 - 120	<0.20	ug/L	NC	20
B443191	Total Lithium (Li)	2024/07/18	100	80 - 120	102	80 - 120	<2.0	ug/L	0.79	20
B443191	Total Manganese (Mn)	2024/07/18	95	80 - 120	103	80 - 120	<1.0	ug/L	0.85	20
B443191	Total Molybdenum (Mo)	2024/07/18	105	80 - 120	107	80 - 120	<1.0	ug/L	NC	20
B443191	Total Nickel (Ni)	2024/07/18	96	80 - 120	102	80 - 120	<1.0	ug/L	NC	20
B443191	Total Phosphorus (P)	2024/07/18	102	80 - 120	101	80 - 120	<10	ug/L	3.3	20
B443191	Total Selenium (Se)	2024/07/18	101	80 - 120	107	80 - 120	<0.10	ug/L	NC	20

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			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B443191	Total Silicon (Si)	2024/07/18	108	80 - 120	114	80 - 120	<100	ug/L	5.1	20
B443191	Total Silver (Ag)	2024/07/18	99	80 - 120	102	80 - 120	<0.020	ug/L	NC	20
B443191	Total Strontium (Sr)	2024/07/18	100	80 - 120	104	80 - 120	<1.0	ug/L	0.59	20
B443191	Total Thallium (Tl)	2024/07/18	100	80 - 120	104	80 - 120	<0.010	ug/L	NC	20
B443191	Total Tin (Sn)	2024/07/18	101	80 - 120	105	80 - 120	<5.0	ug/L	NC	20
B443191	Total Titanium (Ti)	2024/07/18	104	80 - 120	104	80 - 120	<5.0	ug/L	4.0	20
B443191	Total Tungsten (W)	2024/07/18	97	80 - 120	102	80 - 120	<1.0	ug/L		
B443191	Total Uranium (U)	2024/07/18	104	80 - 120	110	80 - 120	<0.10	ug/L	NC	20
B443191	Total Vanadium (V)	2024/07/18	100	80 - 120	103	80 - 120	<5.0	ug/L	NC	20
B443191	Total Zinc (Zn)	2024/07/18	102	80 - 120	105	80 - 120	<5.0	ug/L	NC	20
B443191	Total Zirconium (Zr)	2024/07/18	103	80 - 120	106	80 - 120	<0.10	ug/L	NC	20
B443197	Total Aluminum (Al)	2024/07/20	108	80 - 120	104	80 - 120	<3.0	ug/L		
B443197	Total Antimony (Sb)	2024/07/20	106	80 - 120	103	80 - 120	<0.50	ug/L		
B443197	Total Arsenic (As)	2024/07/20	108	80 - 120	103	80 - 120	<0.10	ug/L		
B443197	Total Barium (Ba)	2024/07/20	104	80 - 120	101	80 - 120	<1.0	ug/L		
B443197	Total Beryllium (Be)	2024/07/20	105	80 - 120	103	80 - 120	<0.10	ug/L		
B443197	Total Bismuth (Bi)	2024/07/20	99	80 - 120	104	80 - 120	<1.0	ug/L		
B443197	Total Boron (B)	2024/07/20	109	80 - 120	111	80 - 120	<50	ug/L		
B443197	Total Cadmium (Cd)	2024/07/20	104	80 - 120	103	80 - 120	<0.010	ug/L		
B443197	Total Chromium (Cr)	2024/07/20	101	80 - 120	99	80 - 120	<1.0	ug/L		
B443197	Total Cobalt (Co)	2024/07/20	98	80 - 120	99	80 - 120	<0.20	ug/L		
B443197	Total Copper (Cu)	2024/07/20	96	80 - 120	97	80 - 120	<0.50	ug/L		
B443197	Total Iron (Fe)	2024/07/20	147 (1)	80 - 120	103	80 - 120	<10	ug/L		
B443197	Total Lead (Pb)	2024/07/20	102	80 - 120	103	80 - 120	<0.20	ug/L		
B443197	Total Lithium (Li)	2024/07/20	105	80 - 120	106	80 - 120	<2.0	ug/L		
B443197	Total Manganese (Mn)	2024/07/20	109	80 - 120	103	80 - 120	<1.0	ug/L		
B443197	Total Molybdenum (Mo)	2024/07/20	114	80 - 120	108	80 - 120	<1.0	ug/L		
B443197	Total Nickel (Ni)	2024/07/20	100	80 - 120	101	80 - 120	<1.0	ug/L		
B443197	Total Phosphorus (P)	2024/07/20	113	80 - 120	105	80 - 120	<10	ug/L		
B443197	Total Selenium (Se)	2024/07/20	107	80 - 120	103	80 - 120	<0.10	ug/L		
B443197	Total Silicon (Si)	2024/07/20	109	80 - 120	106	80 - 120	<100	ug/L		
B443197	Total Silver (Ag)	2024/07/20	103	80 - 120	101	80 - 120	<0.020	ug/L		
B443197	Total Strontium (Sr)	2024/07/20	113	80 - 120	103	80 - 120	<1.0	ug/L		

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			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B443197	Total Thallium (Tl)	2024/07/20	106	80 - 120	104	80 - 120	<0.010	ug/L		
B443197	Total Tin (Sn)	2024/07/20	104	80 - 120	103	80 - 120	<5.0	ug/L		
B443197	Total Titanium (Ti)	2024/07/20	105	80 - 120	102	80 - 120	<5.0	ug/L		
B443197	Total Tungsten (W)	2024/07/20	105	80 - 120	105	80 - 120	<1.0	ug/L		
B443197	Total Uranium (U)	2024/07/20	113	80 - 120	109	80 - 120	<0.10	ug/L		
B443197	Total Vanadium (V)	2024/07/20	104	80 - 120	101	80 - 120	<5.0	ug/L		
B443197	Total Zinc (Zn)	2024/07/20	108	80 - 120	104	80 - 120	<5.0	ug/L		
B443197	Total Zirconium (Zr)	2024/07/20	102	80 - 120	104	80 - 120	<0.10	ug/L		
B443397	Total Dissolved Solids	2024/07/19	100	80 - 120	97	80 - 120	<10	mg/L	0	20
B443545	Total Nitrogen (N)	2024/07/19	92	80 - 120	109	80 - 120	<0.020	mg/L	3.4	20
B443699	Turbidity	2024/07/18			104	80 - 120	<0.10	NTU	2.1	20
B443802	Nitrate plus Nitrite (N)	2024/07/18	113	80 - 120	110	80 - 120	<0.020	mg/L	NC	25
B443829	Nitrite (N)	2024/07/18	108	80 - 120	105	80 - 120	<0.0050	mg/L	NC	20
B444245	Chloride (Cl)	2024/07/18	109	80 - 120	102	80 - 120	<1.0	mg/L		
B444245	Sulphate (SO4)	2024/07/18	103	80 - 120	100	80 - 120	<1.0	mg/L	0.18	20
B444257	Dissolved Fluoride (F)	2024/07/19	105	80 - 120	96	80 - 120	<0.050	mg/L	NC	20
B444278	Alkalinity (PP as CaCO3)	2024/07/19					<1.0	mg/L	2.0	20
B444278	Alkalinity (Total as CaCO3)	2024/07/19			96	80 - 120	<1.0	mg/L	0.21	20
B444278	Bicarbonate (HCO3)	2024/07/19					<1.0	mg/L	0.063	20
B444278	Carbonate (CO3)	2024/07/19					<1.0	mg/L	2.0	20
B444278	Hydroxide (OH)	2024/07/19					<1.0	mg/L	NC	20
B444332	pH	2024/07/19			100	97 - 103			0.43	N/A
B444339	Acidity (pH 4.5)	2024/07/19					<1.0	mg/L	NC	20
B444339	Acidity (pH 8.3)	2024/07/19			99	80 - 120	<1.0	mg/L	NC	20
B444456	Acidity (pH 4.5)	2024/07/19					<1.0	mg/L	NC	20
B444456	Acidity (pH 8.3)	2024/07/19			100	80 - 120	<1.0	mg/L	NC	20
B444500	Total Dissolved Solids	2024/07/18	98	80 - 120	98	80 - 120	<10	mg/L	6.1	20
B445386	Dissolved Organic Carbon (C)	2024/07/19	NC	80 - 120	96	80 - 120	<0.50	mg/L	2.3	20
B445389	Acidity (pH 4.5)	2024/07/19					<1.0	mg/L	NC	20
B445389	Acidity (pH 8.3)	2024/07/19			99	80 - 120	<1.0	mg/L	NC	20
B445995	Apparent Colour	2024/07/19			95	80 - 120	<2.0	PtCo units	7.1	20
B446050	Dissolved Organic Carbon (C)	2024/07/19	103	80 - 120	97	80 - 120	<0.50	mg/L	NC	20
B446160	Total Organic Carbon (C)	2024/07/19	103	80 - 120	97	80 - 120	<0.50	mg/L	5.9	20

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			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B446199	True Colour	2024/07/19			97	80 - 120	<2.0	Col. Unit	0.83	20
B446570	Total Aluminum (Al)	2024/07/23	100	80 - 120	101	80 - 120	<3.0	ug/L	6.7	20
B446570	Total Antimony (Sb)	2024/07/23	99	80 - 120	99	80 - 120	<0.50	ug/L	NC	20
B446570	Total Arsenic (As)	2024/07/23	102	80 - 120	102	80 - 120	<0.10	ug/L	2.3	20
B446570	Total Barium (Ba)	2024/07/23	98	80 - 120	99	80 - 120	<1.0	ug/L	5.3	20
B446570	Total Beryllium (Be)	2024/07/23	98	80 - 120	100	80 - 120	<0.10	ug/L	NC	20
B446570	Total Bismuth (Bi)	2024/07/23	97	80 - 120	101	80 - 120	<1.0	ug/L	NC	20
B446570	Total Boron (B)	2024/07/23	102	80 - 120	104	80 - 120	<50	ug/L	NC	20
B446570	Total Cadmium (Cd)	2024/07/23	99	80 - 120	99	80 - 120	<0.010	ug/L	NC	20
B446570	Total Chromium (Cr)	2024/07/23	100	80 - 120	102	80 - 120	<1.0	ug/L	NC	20
B446570	Total Cobalt (Co)	2024/07/23	98	80 - 120	100	80 - 120	<0.20	ug/L	NC	20
B446570	Total Copper (Cu)	2024/07/23	95	80 - 120	98	80 - 120	<0.50	ug/L	NC	20
B446570	Total Iron (Fe)	2024/07/23	NC	80 - 120	101	80 - 120	<10	ug/L	1.8	20
B446570	Total Lead (Pb)	2024/07/23	100	80 - 120	102	80 - 120	<0.20	ug/L	NC	20
B446570	Total Lithium (Li)	2024/07/23	97	80 - 120	101	80 - 120	<2.0	ug/L	NC	20
B446570	Total Manganese (Mn)	2024/07/23	NC	80 - 120	101	80 - 120	<1.0	ug/L	3.0	20
B446570	Total Molybdenum (Mo)	2024/07/23	104	80 - 120	103	80 - 120	<1.0	ug/L	NC	20
B446570	Total Nickel (Ni)	2024/07/23	97	80 - 120	100	80 - 120	<1.0	ug/L	NC	20
B446570	Total Phosphorus (P)	2024/07/23	96	80 - 120	104	80 - 120	<10	ug/L		
B446570	Total Selenium (Se)	2024/07/23	103	80 - 120	102	80 - 120	<0.10	ug/L	NC	20
B446570	Total Silicon (Si)	2024/07/23	NC	80 - 120	106	80 - 120	<100	ug/L	0.43	20
B446570	Total Silver (Ag)	2024/07/23	99	80 - 120	99	80 - 120	<0.020	ug/L	NC	20
B446570	Total Strontium (Sr)	2024/07/23	101	80 - 120	99	80 - 120	<1.0	ug/L	1.7	20
B446570	Total Thallium (Tl)	2024/07/23	100	80 - 120	101	80 - 120	<0.010	ug/L	8.7	20
B446570	Total Tin (Sn)	2024/07/23	99	80 - 120	101	80 - 120	<5.0	ug/L	NC	20
B446570	Total Titanium (Ti)	2024/07/23	100	80 - 120	102	80 - 120	<5.0	ug/L	NC	20
B446570	Total Tungsten (W)	2024/07/23	98	80 - 120	101	80 - 120	<1.0	ug/L		
B446570	Total Uranium (U)	2024/07/23	100	80 - 120	101	80 - 120	<0.10	ug/L	NC	20
B446570	Total Vanadium (V)	2024/07/23	100	80 - 120	101	80 - 120	<5.0	ug/L	NC	20
B446570	Total Zinc (Zn)	2024/07/23	101	80 - 120	103	80 - 120	<5.0	ug/L	NC	20
B446570	Total Zirconium (Zr)	2024/07/23	104	80 - 120	102	80 - 120	<0.10	ug/L	NC	20
B446674	Orthophosphate (P)	2024/07/20	123 (1)	80 - 120	97	80 - 120	<0.0030	mg/L	NC	20
B446715	Orthophosphate (P)	2024/07/20	111	80 - 120	97	80 - 120	<0.0030	mg/L	2.4	20

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			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B447464	Phenols	2024/07/22	82	80 - 120	99	80 - 120	<0.0015	mg/L	NC	20
B447471	Dissolved Organic Carbon (C)	2024/07/22			101	80 - 120	<0.50	mg/L		
B447719	Dissolved Mercury (Hg)	2024/07/22	108	80 - 120	106	80 - 120	<0.0019	ug/L	NC	20
B447922	Strong Acid Dissoc. Cyanide (CN)	2024/07/22	96	80 - 120	99	80 - 120	<0.00050	mg/L	14	20
B448098	Total Mercury (Hg)	2024/07/23	111	80 - 120	102	80 - 120	<0.0019	ug/L	NC	20
B448334	Total Ammonia (N)	2024/07/22	96	80 - 120	99	80 - 120	<0.015	mg/L	NC	20
B449571	Total Mercury (Hg)	2024/07/23	108	80 - 120	102	80 - 120	<0.0019	ug/L	NC	20
B450485	Dissolved Iron (Fe)	2024/07/24			101	80 - 120	<5.0	ug/L		
B450485	Dissolved Manganese (Mn)	2024/07/24			100	80 - 120	<1.0	ug/L		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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2024/07/16 09:30

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Chain Of Custody Record

INVOICE TO:		Report Information		Project Information		Laboratory Use Only	
Company Name	#9888 Palmer Environmental Consulting Group (PEC	Company Name		Quotation #	C40429	Bureau Veritas Job #	Bottle Order #: 728282
Contact Name	Nathalie Brandebourger	Contact Name	Nathalie Brandebourger	P.O. #			
Address	#630 – 470 Granville Street Vancouver BC V6C 1V5	Address		Project #	1905903 Tenas 2024		
Phone	(604) 629-9075 Fax:	Phone	Fax:	Project Name		Chain Of Custody Record	Project Manager
Email	nathalie.brandebourger@pecg.ca	Email	nathalie.brandebourger@pecg.ca	Site #		C#728282-01-01	Nahed Amer
				Sampled By	NICOLE ANTSIS		

Regulatory Criteria: ☐ CSR ☐ CCME ☐ BC Water Quality ☐ Other

Special Instructions

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

Regular (Standard) TAT: ☑
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests..
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
1 DAY ☐ 2 Day ☐ 3 Day ☐ Date Required: ☐
Rush Confirmation Number: (call lab for #)

	Sample Barcode Label	Sample (Location) Identification	Date Sampled (mm/dd)	Time Sampled	Matrix	Metals Field Filtered ? (Y / N)	Color (True) by Automated Analyzer	Colour (Apparent)	Hardness (calculated as CaCO3)	pH @25°C	Total Suspended Solids (NFR)	Total Dissolved Solids (Filt. Residue)	Turbidity	Acidity pH 4.5 & pH 8.3 (as CaCO3)	Alkalinity @25C (pp, total), CO3,HCO3,OH	Ammonia-N (Total)	# of Bottles	Comments
1	T19-18S	Tenas Four Creek	07/09	1600	GW	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓		5	500 mL Gen Chem, F. Metals, F Mercury F. DOC, Nutrients
2	TOB96-02-06	Tenas Four Creek	07/08	1430	GW	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	12	1L Gen. Chem bottle 1/3 Full
3	TOB96-01-05	Tenas Four Creek	07/09	1730	GW	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓		3	1L Gen Chem, F. Metals, 250mL Gen Chem
4	T95R-40	Tenas Four Creek	07/09	1200	GW	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	12	
5	T18-01D	Tenas Four Creek	07/08	1800	GW	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	12	
6	DUP-B	Tenas Four Creek	07/08	1800	GW	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	12	
7																		
8																		
9																		
10																		

MVAN-2024-07-806

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Lab Use Only: Time Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
NICOLE ANTSIS	2024/07/10	7:30	HARIGNA JOSHI	2024/07/16	09:30		☐	SEE ACTR	☐ Yes ☑ No

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COC-TERMS-AND-CONDITIONS.

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Chain Of Custody Record

INVOICE TO:		Report Information		Project Information		Laboratory Use Only	
Company Name	#9888 Palmer Environmental Consulting Group (PEC	Company Name		Quotation #	C40429	Bureau Veritas Job #	Bottle Order #:
Contact Name	Nathalie Brandebourger	Contact Name	Nathalie Brandebourger	P.O. #			728282
Address	#630 – 470 Granville Street	Address		Project #	1905903 Tenas 2024	Chain Of Custody Record	Project Manager
	Vancouver BC V6C 1V5			Project Name		C#728282-01-02	Nahed Amer
Phone	(604) 629-9075 Fax:	Phone	Fax:	Site #			
Email	nathalie.brandebourger@pecg.ca	Email	nathalie.brandebourger@pecg.ca	Sampled By	NICOLE ANASIS		

Regulatory Criteria: ☐ CSR ☐ CCME ☐ BC Water Quality ☐ Other _____

Special Instructions:

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

Regular (Standard) TAT: ☑
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests..
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
1 DAY ☐ 2 Day ☐ 3 Day ☐ Date Required: _____ ☐
Rush Confirmation Number: _____ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered ? (Y / N)	Nitrogen - Nitrate (as N)	Total TKN in Water	Orthophosphate by Automated Analyzer	Total Phosphorus	Chloride/Sulphate by Auto Colourimetry	Fluoride	Carbon (Total Organic)	Carbon (DOC)	CSR Dissolved Metals in Water with CV Hg	CSR Total Metals in Water with CV Hg	# of Bottles	Comments
1	T19-185	Tenas Four Creek	07/09	1600	GW	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	5	500ML Genchem, F. Metals, F. Mercury F. DOC, Nutrients
2	TOB96-02-06	Tenas Four Creek	07/08	1430	GW	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	12	1L Genchem bottle 1/3 FULL
3	TOB96-01-05	Tenas Fourcreek	07/09	1730	GW	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	3	1L Gen chem F. Metals, 250ML Genchem
4	T95K-40	Tenas Four creek	07/09	1200	GW	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	12	
5	T18-01D	Tenas Four Creek	07/08	1800	GW	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	12	
6	DUP-B	Tenas Four Creek	07/08	1800	GW	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	12	
7																		
8																		
9																		
10																		

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Lab Use Only: Time Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
NICOLE ANASIS	2024/07/10	7:30	HARIGNA JOSHI	2024/07/16	09:30		☐	SEE ABOVE	☐ Yes ☑ No

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COC-TERMS-AND-CONDITIONS.

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Chain Of Custody Record

INVOICE TO:		Report Information		Project Information		Laboratory Use Only	
Company Name	#9888 Palmer Environmental Consulting Group (PEC	Company Name		Quotation #	C40429	Bureau Veritas Job #	Bottle Order #:
Contact Name	Nathalie Brandebourger	Contact Name	Nathalie Brandebourger	P.O. #			728282
Address	#630 – 470 Granville Street	Address		Project #	1905903 Tenas 2024	Chain Of Custody Record	Project Manager
	Vancouver BC V6C 1V5			Project Name		C#728282-01-03	Nahed Amer
Phone	(604) 629-9075 Fax:	Phone	Fax:	Site #			
Email	nathalie.brandebourger@pecg.ca	Email	nathalie.brandebourger@pecg.ca	Sampled By	NICOLE ANTSIS		

Regulatory Criteria:
- ☐ CSR
- ☐ CCME
- ☐ BC Water Quality
- ☐ Other

Special Instructions

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered ? (Y / N)	Cyanide (total)	Phenols (4-AAP)	# of Bottles	Comments
1	T19-185	Tenas Four Creek	07/09	1600	GW	Y	✓	✓	5	500ML Gen chem, F. Metals F. Mercury F. DOC, NUTRIENTS
2	TOB96-02-06	Tenas Four Creek	07/08	1430	GW	Y	✓	✓	12	1L Gen Chem bottle 1/3 Full
3	TOB96-01-05	Tenas Four Creek	07/09	1730	GW	Y	✓	✓	3	1L Gen chem, F. Metals, 100 mL Gen chem
4	T95R-40	Tenas Four Creek	07/08	1200	GW	Y	✓	✓	12	
5	T18-010	Tenas Four Creek	07/08	1200	GW	Y	✓	✓	12	
6	DUP-B	TENAS FOUR CREEK	07/08	1800	GW		✓	✓	12	
7										
8										
9										
10										

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

Regular (Standard) TAT:
(will be applied if Rush TAT is not specified): ☑
Standard TAT = 5-7 Working days for most tests..
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
1 DAY ☐ 2 Day ☐ 3 Day ☐ Date Required: ☐
Rush Confirmation Number: *(call lab for #)*

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
NICOLE ANTSIS	2024/07/16	7:30	HARJINA JOSHI	2024/07/16	09:30	

Lab Use Only: Time Sensitive ☐ | Temperature (°C) on Receipt: SEE ACTR | Custody Seal Intact on Cooler? ☐ Yes ☒ No

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COC-TERMS-AND-CONDITIONS.
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Bureau Veritas Canada (2019) Inc.

Your Project #: 1905903 TENAS 2024
Your C.O.C. #: C#728282-02-01

Attention: Nathalie Brandebourger

Palmer Environmental Consulting Group (PECG)
#630 – 470 Granville Street
Vancouver, BC
CANADA V6C 1V5

Report Date: 2024/07/23
Report #: R3531225
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C453348
Received: 2024/07/16, 09:00

Sample Matrix: Water
Samples Received: 10

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Acidity pH 4.5 & pH 8.3 (as CaCO3)	10	N/A	2024/07/19	BBY6SOP-00037	SM 24 2310 B m
Alkalinity @25C (pp, total), CO3,HCO3,OH	9	N/A	2024/07/17	BBY6SOP-00026	SM 24 2320 B m
Alkalinity @25C (pp, total), CO3,HCO3,OH	1	N/A	2024/07/22	BBY6SOP-00026	SM 24 2320 B m
Chloride/Sulphate by Auto Colourimetry	9	N/A	2024/07/18	BBY6SOP-00011 / BBY6SOP-00017	SM24-4500-Cl/SO4-E m
Chloride/Sulphate by Auto Colourimetry	1	N/A	2024/07/22	BBY6SOP-00011 / BBY6SOP-00017	SM24-4500-Cl/SO4-E m
Cyanide (total) (1)	9	N/A	2024/07/19	CAL SOP-00270	SM 24 4500-CN m
Color (Apparent) by Automated Analyzer	10	N/A	2024/07/19	BBY6SOP-00057	SM 24 2120-C m
Color (True) by Automated Analyzer	7	N/A	2024/07/17	BBY6SOP-00057	SM 24 2120 C m
Color (True) by Automated Analyzer	3	N/A	2024/07/19	BBY6SOP-00057	SM 24 2120 C m
Carbon (DOC) -Lab Filtered (2)	1	N/A	2024/07/19	BBY6SOP-00053	SM 24 5310 B m
Carbon (DOC) (2)	5	N/A	2024/07/19	BBY6SOP-00053	SM 24 5310 B m
Carbon (DOC) (2)	4	N/A	2024/07/20	BBY6SOP-00053	SM 24 5310 B m
Fluoride	8	N/A	2024/07/17	BBY6SOP-00037	SM 24 4500-F C m
Fluoride	1	N/A	2024/07/18	BBY6SOP-00037	SM 24 4500-F C m
Fluoride	1	N/A	2024/07/19	BBY6SOP-00037	SM 24 4500-F C m
Hardness Total (calculated as CaCO3) (3)	9	N/A	2024/07/19	BBY WI-00033	Auto Calc
Hardness Total (calculated as CaCO3) (3)	1	N/A	2024/07/23	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3)	9	N/A	2024/07/18	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3)	1	N/A	2024/07/22	BBY WI-00033	Auto Calc
Mercury (Dissolved) by CV (4)	10	2024/07/22	2024/07/22	BBY7SOP-00032	BCMOE LM 2023 C1.1.3
Mercury (Total) by CV	10	2024/07/22	2024/07/23	BBY7SOP-00032	BCMOE LM 2023 C1.1.3
Ion Ratio (Cation sum/Anion sum)	10	N/A	2024/07/19	BBY WI-00033	Auto Calc
Ion Balance	10	N/A	2024/07/19	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	9	N/A	2024/07/18	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	1	N/A	2024/07/22	BBY WI-00033	Auto Calc
Elements by CRC ICPMS (dissolved) (4)	10	N/A	2024/07/18	BBY7SOP-00002	EPA 6020b R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total)	9	2024/07/16	2024/07/19	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (total)	1	2024/07/19	2024/07/23	BBY WI-00033	Auto Calc
Elements by CRC ICPMS (total)	1	2024/07/17	2024/07/19	BBY7SOP-00003 / BBY7SOP-00002	EPA 6020b R2 m

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Your Project #: 1905903 TENAS 2024
Your C.O.C. #: C#728282-02-01

Attention: Nathalie Brandebourger

Palmer Environmental Consulting Group (PECG)
#630 – 470 Granville Street
Vancouver, BC
CANADA V6C 1V5

Report Date: 2024/07/23
Report #: R3531225
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C453348
Received: 2024/07/16, 09:00

Sample Matrix: Water
Samples Received: 10

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Elements by CRC ICPMS (total)	9	2024/07/18	2024/07/18	BBY7SOP-00003 / BBY7SOP-00002	EPA 6020b R2 m
Nitrogen (Total)	9	N/A	2024/07/19	BBY6SOP-00016	SM 24 4500-N C m
Nitrogen (Total)	1	N/A	2024/07/23	BBY6SOP-00016	SM 24 4500-N C m
Ammonia-N (Total)	10	N/A	2024/07/22	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate + Nitrite (N)	9	N/A	2024/07/17	BBY6SOP-00010	SM 24 4500-NO3- H m
Nitrate + Nitrite (N)	1	N/A	2024/07/18	BBY6SOP-00010	SM 24 4500-NO3- H m
Nitrite (N) Regular Level Water	9	N/A	2024/07/17	BBY6SOP-00010	SM 24 4500-NO2- m
Nitrite (N) Regular Level Water	1	N/A	2024/07/18	BBY6SOP-00010	SM 24 4500-NO2- m
Nitrogen - Nitrate (as N)	10	N/A	2024/07/19	BBY WI-00033	Auto Calc
pH @25°C (5)	9	N/A	2024/07/17	BBY6SOP-00026	SM 24 4500-H+ B m
pH @25°C (5)	1	N/A	2024/07/22	BBY6SOP-00026	SM 24 4500-H+ B m
Phenols (4-AAP) (1)	9	N/A	2024/07/22	AB SOP-00088	EPA 9066 R0 m
Orthophosphate by Automated Analyzer (6)	10	N/A	2024/07/20	BBY6SOP-00013	SM 24 4500-P E m
Total Dissolved Solids (Filt. Residue)	2	2024/07/18	2024/07/18	BBY6SOP-00033	SM 24 2540 C m
Total Dissolved Solids (Filt. Residue)	8	2024/07/18	2024/07/19	BBY6SOP-00033	SM 24 2540 C m
Total Kjeldahl Nitrogen (Total)	9	N/A	2024/07/19	BBY WI-00033	Auto Calc
Total Kjeldahl Nitrogen (Total)	1	N/A	2024/07/23	BBY WI-00033	Auto Calc
Carbon (Total Organic) (7)	10	N/A	2024/07/19	BBY6SOP-00053	SM 24 5310 B m
Total Phosphorus	4	2024/07/17	2024/07/18	BBY6SOP-00013	SM 24 4500-P E m
Total Phosphorus	6	2024/07/17	2024/07/19	BBY6SOP-00013	SM 24 4500-P E m
Total Suspended Solids (NFR)	10	2024/07/17	2024/07/18	BBY6SOP-00034	SM 24 2540 D m
Turbidity	6	N/A	2024/07/17	BBY6SOP-00027	SM 24 2130 B m
Turbidity	4	N/A	2024/07/18	BBY6SOP-00027	SM 24 2130 B m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement

Your Project #: 1905903 TENAS 2024
Your C.O.C. #: C#728282-02-01

Attention: Nathalie Brandebourger

Palmer Environmental Consulting Group (PECG)
#630 – 470 Granville Street
Vancouver, BC
CANADA V6C 1V5

Report Date: 2024/07/23
Report #: R3531225
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C453348
Received: 2024/07/16, 09:00

Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Calgary, 4000 - 19 St. , Calgary, AB, T2E 6P8
(2) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(3) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).
(4) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(5) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas endeavours to analyze samples as soon as possible after receipt.
(6) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(7) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
23 Jul 2024 18:25:41

Please direct all questions regarding this Certificate of Analysis to:
Nahed Amer, Key Account Specialist
Email: Nahed.AMER@bureauveritas.com
Phone# (604) 734 7276

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This report has been generated and distributed using a secure automated process.
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Raphael Kwan, Senior Manager, BC and Yukon Regions responsible for British Columbia Environmental laboratory operations.

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CRI255		CRI256	CRI257		
Sampling Date		2024/07/05 13:00		2024/07/05 13:00	2024/07/07 11:00		
COC Number		C#728282-02-01		C#728282-02-01	C#728282-02-01		
	UNITS	SITE 2S	QC Batch	SITE 2SW	SITE 4 UPPER S	RDL	QC Batch
ANIONS							
Nitrite (N)	mg/L	<0.0050	B442329	<0.0050	<0.0050	0.0050	B442329
Calculated Parameters							
Dissolved Hardness (CaCO3)	mg/L	72.6	B440213	74.1	93.5	0.50	B440213
Total Hardness (CaCO3)	mg/L	70.2	B440451	69.9	90.6	0.50	B440451
Ion Balance (% Difference)	%	2.0	B440608	2.5	1.4	N/A	B440608
Ion Ratio (cation sum / anion sum)	N/A	1.0	B440605	1.1	1.0	0.010	B440605
Nitrate (N)	mg/L	0.028	B440455	0.049	<0.020	0.020	B440455
Total Total Kjeldahl Nitrogen (Calc)	mg/L	0.294	B440550	0.257	0.257	0.020	B440550
Misc. Inorganics							
Strong Acid Dissoc. Cyanide (CN)	mg/L	0.00053	B445151	0.00051	<0.00050	0.00050	B445151
Dissolved Organic Carbon (C)	mg/L	11	B446050	11	7.5	0.50	B446050
pH	pH	7.70	B442275	7.81	7.94	N/A	B442275
Acidity (pH 4.5)	mg/L	<1.0	B444339	<1.0	<1.0	1.0	B444339
Total Organic Carbon (C)	mg/L	11	B444524	11	7.6	0.50	B444524
Acidity (pH 8.3)	mg/L	<1.0	B444339	<1.0	<1.0	1.0	B444339
Total Dissolved Solids	mg/L	110	B443397	110	120	10	B443397
Total Suspended Solids	mg/L	2.8	B442102	<1.0	11	1.0	B442102
Anions							
Alkalinity (PP as CaCO3)	mg/L	<1.0	B442285	<1.0	<1.0	1.0	B442285
Alkalinity (Total as CaCO3)	mg/L	79	B442285	80	100	1.0	B442285
Bicarbonate (HCO3)	mg/L	97	B442285	97	120	1.0	B442285
Carbonate (CO3)	mg/L	<1.0	B442285	<1.0	<1.0	1.0	B442285
Dissolved Fluoride (F)	mg/L	<0.050	B442375	<0.050	<0.050	0.050	B442375
Hydroxide (OH)	mg/L	<1.0	B442285	<1.0	<1.0	1.0	B442285
Chloride (Cl)	mg/L	<1.0	B442465	<1.0	<1.0	1.0	B442465
Sulphate (SO4)	mg/L	<1.0	B442465	<1.0	<1.0	1.0	B442465
MISCELLANEOUS							
True Colour	Col. Unit	42.9	B446199	43.1	31.4	2.0	B442323
Nutrients							
Total Ammonia (N)	mg/L	<0.015	B448317	<0.015	0.023	0.015	B448317

RDL = Reportable Detection Limit
N/A = Not Applicable

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RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CRI255		CRI256	CRI257		
Sampling Date		2024/07/05 13:00		2024/07/05 13:00	2024/07/07 11:00		
COC Number		C#728282-02-01		C#728282-02-01	C#728282-02-01		
	UNITS	SITE 2S	QC Batch	SITE 2SW	SITE 4 UPPER S	RDL	QC Batch
Orthophosphate (P)	mg/L	<0.0030	B446674	0.0079	0.0066	0.0030	B446674
Total Phosphorus (P)	mg/L	0.0059	B442175	0.0046 (1)	0.0069	0.0030	B442175
Nitrate plus Nitrite (N)	mg/L	0.028	B442322	0.049	<0.020	0.020	B442322
Total Nitrogen (N)	mg/L	0.322	B443543	0.306	0.257	0.020	B443543
Misc. Organics							
Phenols	mg/L	<0.0015	B447464	<0.0015	<0.0015	0.0015	B447464
Physical Properties							
Turbidity	NTU	5.2	B442470	0.34	6.2	0.10	B442470
Apparent Colour	PtCo units	48	B445995	43	35	2.0	B445995

RDL = Reportable Detection Limit
(1) Phosphorus < Orthophosphate: Both values fall within the method uncertainty for duplicates and are likely equivalent.

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RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CRI258			CRI259		
Sampling Date		2024/07/06 17:30			2024/07/07 11:00		
COC Number		C#728282-02-01			C#728282-02-01		
	UNITS	SITE 4 UPPER SW	RDL	QC Batch	SITE 4 UPPER D	RDL	QC Batch
ANIONS							
Nitrite (N)	mg/L	<0.0050	0.0050	B442329	<0.0050	0.0050	B443829
Calculated Parameters							
Dissolved Hardness (CaCO3)	mg/L	89.1	0.50	B440213	89.3	0.50	B440213
Total Hardness (CaCO3)	mg/L	85.5	0.50	B440451	84.2	0.50	B440451
Ion Balance (% Difference)	%	0.24	N/A	B440608	0.62	N/A	B440608
Ion Ratio (cation sum / anion sum)	N/A	1.0	0.010	B440605	1.0	0.010	B440605
Nitrate (N)	mg/L	<0.020	0.020	B440455	<0.020	0.020	B440455
Total Total Kjeldahl Nitrogen (Calc)	mg/L	0.262	0.020	B440550	1.16	0.020	B440550
Misc. Inorganics							
Strong Acid Dissoc. Cyanide (CN)	mg/L	<0.00050	0.00050	B445151			
Dissolved Organic Carbon (C)	mg/L	8.0	0.50	B446050			
pH	pH	7.92	N/A	B442275	7.90	N/A	B447682
Acidity (pH 4.5)	mg/L	<1.0	1.0	B444339	<1.0	1.0	B444456
Total Organic Carbon (C)	mg/L	7.9	0.50	B444524	35	0.50	B444524
Acidity (pH 8.3)	mg/L	<1.0	1.0	B444339	<1.0	1.0	B444456
Total Dissolved Solids	mg/L	120	10	B443397	160	10	B444500
Total Suspended Solids	mg/L	<1.0	1.0	B442102	61	1.0	B442803
Lab Filtered Inorganics							
Dissolved Organic Carbon (C)	mg/L				32 (1)	0.50	B445386
Anions							
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B442285	<1.0	1.0	B447677
Alkalinity (Total as CaCO3)	mg/L	99	1.0	B442285	100	1.0	B447677
Bicarbonate (HCO3)	mg/L	120	1.0	B442285	130	1.0	B447677
Carbonate (CO3)	mg/L	<1.0	1.0	B442285	<1.0	1.0	B447677
Dissolved Fluoride (F)	mg/L	<0.050	0.050	B442375	<0.050	0.050	B444257
Hydroxide (OH)	mg/L	<1.0	1.0	B442285	<1.0	1.0	B447677
Chloride (Cl)	mg/L	<1.0	1.0	B442465	<1.0	1.0	B447852
Sulphate (SO4)	mg/L	<1.0	1.0	B442465	<1.0	1.0	B447852
MISCELLANEOUS							
True Colour	Col. Unit	32.4	2.0	B442323	16.8	2.0	B446199

RDL = Reportable Detection Limit
N/A = Not Applicable
(1) Sample filtered and preserved past method specified hold time

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RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CRI258			CRI259		
Sampling Date		2024/07/06 17:30			2024/07/07 11:00		
COC Number		C#728282-02-01			C#728282-02-01		
	UNITS	SITE 4 UPPER SW	RDL	QC Batch	SITE 4 UPPER D	RDL	QC Batch
Nutrients							
Total Ammonia (N)	mg/L	<0.015	0.015	B448448	0.19	0.015	B448448
Orthophosphate (P)	mg/L	0.0056	0.0030	B446674	<0.0030	0.0030	B446674
Total Phosphorus (P)	mg/L	0.0048 (1)	0.0030	B442175	0.10	0.0030	B442178
Nitrate plus Nitrite (N)	mg/L	<0.020	0.020	B442322	<0.020	0.020	B443802
Total Nitrogen (N)	mg/L	0.262	0.020	B443543	1.16	0.020	B443543
Misc. Organics							
Phenols	mg/L	<0.0015	0.0015	B447464			
Physical Properties							
Turbidity	NTU	1.6	0.10	B442470	11	0.10	B443699
Apparent Colour	PtCo units	32	2.0	B445995	26	2.0	B445995

RDL = Reportable Detection Limit
(1) Phosphorus < Orthophosphate: Both values fall within the method uncertainty for duplicates and are likely equivalent.

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RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CRI260		CRI261		CRI262		
Sampling Date		2024/07/07 18:00		2024/07/07 16:00		2024/07/06 11:00		
COC Number		C#728282-02-01		C#728282-02-01		C#728282-02-01		
	UNITS	SITE 5S	QC Batch	SITE 5SW	QC Batch	T95R-64	RDL	QC Batch
ANIONS								
Nitrite (N)	mg/L	<0.0050	B442570	<0.0050	B442570	<0.0050	0.0050	B442570
Calculated Parameters								
Dissolved Hardness (CaCO3)	mg/L	80.3	B440213	75.9	B440213	52.3	0.50	B440213
Total Hardness (CaCO3)	mg/L	74.9	B440451	71.6	B440451	48.9	0.50	B440451
Ion Balance (% Difference)	%	4.5	B440608	3.0	B440608	2.9	N/A	B440608
Ion Ratio (cation sum / anion sum)	N/A	1.1	B440605	1.1	B440605	1.1	0.010	B440605
Nitrate (N)	mg/L	<0.020	B440455	<0.020	B440455	<0.020	0.020	B440455
Total Total Kjeldahl Nitrogen (Calc)	mg/L	0.430	B440550	0.311	B440550	0.446	0.020	B440550
Misc. Inorganics								
Strong Acid Dissoc. Cyanide (CN)	mg/L	0.00065	B445151	0.00052	B445151	<0.00050	0.00050	B445151
Dissolved Organic Carbon (C)	mg/L	12	B446050	11	B446050	0.68	0.50	B446050
pH	pH	7.55	B442275	7.83	B442275	8.06	N/A	B442275
Acidity (pH 4.5)	mg/L	<1.0	B444339	<1.0	B444339	<1.0	1.0	B444339
Total Organic Carbon (C)	mg/L	12	B444524	10	B444524	<0.50	0.50	B444524
Acidity (pH 8.3)	mg/L	<1.0	B444339	<1.0	B444339	<1.0	1.0	B444339
Total Dissolved Solids	mg/L	130	B443397	110	B443397	790	10	B443397
Total Suspended Solids	mg/L	20	B442102	<1.0	B442102	1.6	1.0	B442102
Anions								
Alkalinity (PP as CaCO3)	mg/L	<1.0	B442285	<1.0	B442285	<1.0	1.0	B442285
Alkalinity (Total as CaCO3)	mg/L	84	B442285	82	B442285	720	1.0	B442285
Bicarbonate (HCO3)	mg/L	100	B442285	100	B442285	880	1.0	B442285
Carbonate (CO3)	mg/L	<1.0	B442285	<1.0	B442285	<1.0	1.0	B442285
Dissolved Fluoride (F)	mg/L	<0.050	B442375	<0.050	B442375	1.4	0.050	B442375
Hydroxide (OH)	mg/L	<1.0	B442285	<1.0	B442285	<1.0	1.0	B442285
Chloride (Cl)	mg/L	<1.0	B442465	<1.0	B442465	1.1	1.0	B442465
Sulphate (SO4)	mg/L	<1.0	B442465	<1.0	B442465	<1.0	1.0	B442465
MISCELLANEOUS								
True Colour	Col. Unit	45.2	B446199	38.8	B442323	<2.0	2.0	B442323
Nutrients								
Total Ammonia (N)	mg/L	0.027	B448334	<0.015	B448334	0.36	0.015	B448334

RDL = Reportable Detection Limit
N/A = Not Applicable

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CRI260		CRI261		CRI262		
Sampling Date		2024/07/07 18:00		2024/07/07 16:00		2024/07/06 11:00		
COC Number		C#728282-02-01		C#728282-02-01		C#728282-02-01		
	UNITS	**SITE 5S**	**QC Batch**	**SITE 5SW**	**QC Batch**	**T95R-64**	**RDL**	**QC Batch**
Orthophosphate (P)	mg/L	0.0044	B446674	<0.0030	B446674	<0.0030	0.0030	B446674
Total Phosphorus (P)	mg/L	0.016	B442178	0.0037	B442178	0.012	0.0030	B442178
Nitrate plus Nitrite (N)	mg/L	<0.020	B442537	<0.020	B442537	<0.020	0.020	B442537
Total Nitrogen (N)	mg/L	0.430	B443545	0.311	B443545	0.446	0.020	B443545
Misc. Organics								
Phenols	mg/L	<0.0015	B447464	<0.0015	B447464	<0.0015	0.0015	B447464
Physical Properties								
Turbidity	NTU	5.7	B442470	0.32	B442470	0.69	0.10	B443699
Apparent Colour	PtCo units	53	B445995	39	B445995	3.5	2.0	B445995
RDL = Reportable Detection Limit								

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RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CRI263		CRI264		
Sampling Date		2024/07/09 18:30		2024/07/06 11:00		
COC Number		C#728282-02-01		C#728282-02-01		
	UNITS	TRIP BLANK	QC Batch	DUP-A	RDL	QC Batch
ANIONS						
Nitrite (N)	mg/L	<0.0050	B442570	<0.0050	0.0050	B442570
Calculated Parameters						
Dissolved Hardness (CaCO3)	mg/L	<0.50	B446285	52.4	0.50	B440213
Total Hardness (CaCO3)	mg/L	<0.50	B446256	49.4	0.50	B440451
Ion Balance (% Difference)	%	26	B440608	3.5	N/A	B440608
Ion Ratio (cation sum / anion sum)	N/A	NC	B440605	1.1	0.010	B440605
Nitrate (N)	mg/L	<0.020	B440455	<0.020	0.020	B440455
Total Total Kjeldahl Nitrogen (Calc)	mg/L	<0.020	B445191	0.444	0.020	B440550
Misc. Inorganics						
Strong Acid Dissoc. Cyanide (CN)	mg/L	<0.00050	B445151	<0.00050	0.00050	B445151
Dissolved Organic Carbon (C)	mg/L	<0.50	B446050	<0.50	0.50	B446050
pH	pH	6.80	B442505	8.13	N/A	B442505
Acidity (pH 4.5)	mg/L	<1.0	B444339	<1.0	1.0	B444339
Total Organic Carbon (C)	mg/L	<0.50	B444524	<0.50	0.50	B444524
Acidity (pH 8.3)	mg/L	<1.0	B444339	<1.0	1.0	B444339
Total Dissolved Solids	mg/L	<10	B443397	630	10	B444500
Total Suspended Solids	mg/L	<1.0	B442102	1.2	1.0	B442102
Anions						
Alkalinity (PP as CaCO3)	mg/L	<1.0	B442520	<1.0	1.0	B442520
Alkalinity (Total as CaCO3)	mg/L	1.4	B442520	710	1.0	B442520
Bicarbonate (HCO3)	mg/L	1.7	B442520	870	1.0	B442520
Carbonate (CO3)	mg/L	<1.0	B442520	<1.0	1.0	B442520
Dissolved Fluoride (F)	mg/L	<0.050	B442375	1.5	0.050	B443717
Hydroxide (OH)	mg/L	<1.0	B442520	<1.0	1.0	B442520
Chloride (Cl)	mg/L	<1.0	B442465	2.8	1.0	B442465
Sulphate (SO4)	mg/L	<1.0	B442465	<1.0	1.0	B442465
MISCELLANEOUS						
True Colour	Col. Unit	<2.0	B442323	<2.0	2.0	B442323
Nutrients						
Total Ammonia (N)	mg/L	<0.015	B448334	0.36	0.015	B448334

RDL = Reportable Detection Limit
N/A = Not Applicable

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CRI263		CRI264		
Sampling Date		2024/07/09 18:30		2024/07/06 11:00		
COC Number		C#728282-02-01		C#728282-02-01		
	UNITS	**TRIP BLANK**	**QC Batch**	**DUP-A**	**RDL**	**QC Batch**
Orthophosphate (P)	mg/L	<0.0030	B446674	<0.0030	0.0030	B446674
Total Phosphorus (P)	mg/L	<0.0030	B442178	0.010	0.0030	B442178
Nitrate plus Nitrite (N)	mg/L	<0.020	B442537	<0.020	0.020	B442537
Total Nitrogen (N)	mg/L	<0.020	B447766	0.444	0.020	B443545
Misc. Organics						
Phenols	mg/L	<0.0015	B447464	<0.0015	0.0015	B447464
Physical Properties						
Turbidity	NTU	0.15	B443699	0.77	0.10	B443699
Apparent Colour	PtCo units	<2.0	B445995	<2.0	2.0	B445995
RDL = Reportable Detection Limit						

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CRI255	CRI256	CRI257	CRI258	CRI259		
Sampling Date		2024/07/05 13:00	2024/07/05 13:00	2024/07/07 11:00	2024/07/06 17:30	2024/07/07 11:00		
COC Number		C#728282-02-01	C#728282-02-01	C#728282-02-01	C#728282-02-01	C#728282-02-01		
	UNITS	SITE 2S	SITE 2SW	SITE 4 UPPER S	SITE 4 UPPER SW	SITE 4 UPPER D	RDL	QC Batch
Elements								
Dissolved Mercury (Hg)	ug/L	0.0034	0.0030	0.0023	0.0026	0.0022 (1)	0.0019	B447484
Total Mercury (Hg)	ug/L	0.0020	<0.0019	<0.0019	<0.0019	<0.0019 (1)	0.0019	B447728

RDL = Reportable Detection Limit
(1) Sample received was not in compliance with BC CSR sampling requirements for Mercury in water.

Bureau Veritas ID		CRI260	CRI261	CRI262	CRI263	CRI264		
Sampling Date		2024/07/07 18:00	2024/07/07 16:00	2024/07/06 11:00	2024/07/09 18:30	2024/07/06 11:00		
COC Number		C#728282-02-01	C#728282-02-01	C#728282-02-01	C#728282-02-01	C#728282-02-01		
	UNITS	SITE 5S	SITE 5SW	T95R-64	TRIP BLANK	DUP-A	RDL	QC Batch
Elements								
Dissolved Mercury (Hg)	ug/L	<0.0019	0.0030	<0.0019	<0.0019	<0.0019	0.0019	B447484
Total Mercury (Hg)	ug/L	<0.0019	<0.0019	<0.0019	<0.0019	<0.0019	0.0019	B447728

RDL = Reportable Detection Limit

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ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CRI255		CRI256	CRI257	CRI258		
Sampling Date		2024/07/05 13:00		2024/07/05 13:00	2024/07/07 11:00	2024/07/06 17:30		
COC Number		C#728282-02-01		C#728282-02-01	C#728282-02-01	C#728282-02-01		
	UNITS	SITE 2S	QC Batch	SITE 2SW	SITE 4 UPPER S	SITE 4 UPPER SW	RDL	QC Batch
Dissolved Metals by ICPMS								
Dissolved Aluminum (Al)	ug/L	28.5	B442119	35.3	28.8	26.9	3.0	B442119
Dissolved Antimony (Sb)	ug/L	<0.50	B442119	<0.50	<0.50	<0.50	0.50	B442119
Dissolved Arsenic (As)	ug/L	0.50	B442119	0.51	0.61	0.63	0.10	B442119
Dissolved Barium (Ba)	ug/L	64.2	B442119	66.5	90.1	88.4	1.0	B442119
Dissolved Beryllium (Be)	ug/L	<0.10	B442119	<0.10	<0.10	<0.10	0.10	B442119
Dissolved Bismuth (Bi)	ug/L	<1.0	B442119	<1.0	<1.0	<1.0	1.0	B442119
Dissolved Boron (B)	ug/L	<50	B442119	<50	<50	<50	50	B442119
Dissolved Cadmium (Cd)	ug/L	0.112	B446363	<0.010	<0.010	<0.010	0.010	B442119
Dissolved Chromium (Cr)	ug/L	<1.0	B442119	<1.0	<1.0	<1.0	1.0	B442119
Dissolved Cobalt (Co)	ug/L	<0.20	B442119	<0.20	<0.20	<0.20	0.20	B442119
Dissolved Copper (Cu)	ug/L	2.09	B442119	1.49	1.27	1.26	0.20	B442119
Dissolved Iron (Fe)	ug/L	23.6	B442119	19.1	19.6	10.8	5.0	B442119
Dissolved Lead (Pb)	ug/L	<0.20	B442119	<0.20	<0.20	<0.20	0.20	B442119
Dissolved Lithium (Li)	ug/L	<2.0	B442119	<2.0	<2.0	<2.0	2.0	B442119
Dissolved Manganese (Mn)	ug/L	<1.0	B442119	<1.0	<1.0	<1.0	1.0	B442119
Dissolved Molybdenum (Mo)	ug/L	<1.0	B442119	<1.0	<1.0	<1.0	1.0	B442119
Dissolved Nickel (Ni)	ug/L	<1.0	B442119	<1.0	<1.0	<1.0	1.0	B442119
Dissolved Phosphorus (P)	ug/L	<10	B442119	<10	<10	<10	10	B442119
Dissolved Selenium (Se)	ug/L	<0.10	B442119	<0.10	<0.10	<0.10	0.10	B442119
Dissolved Silicon (Si)	ug/L	3350	B442119	3410	3240	3200	100	B442119
Dissolved Silver (Ag)	ug/L	<0.020	B442119	<0.020	<0.020	<0.020	0.020	B442119
Dissolved Strontium (Sr)	ug/L	114	B442119	118	167	165	1.0	B442119
Dissolved Thallium (Tl)	ug/L	<0.010	B442119	<0.010	<0.010	<0.010	0.010	B442119
Dissolved Tin (Sn)	ug/L	<5.0	B442119	<5.0	<5.0	<5.0	5.0	B442119
Dissolved Titanium (Ti)	ug/L	<5.0	B442119	<5.0	<5.0	<5.0	5.0	B442119
Dissolved Tungsten (W)	ug/L	<1.0	B442119	<1.0	<1.0	<1.0	1.0	B442119
Dissolved Uranium (U)	ug/L	<0.10	B442119	<0.10	<0.10	<0.10	0.10	B442119
Dissolved Vanadium (V)	ug/L	<5.0	B442119	<5.0	<5.0	<5.0	5.0	B442119
Dissolved Zinc (Zn)	ug/L	<5.0	B442119	<5.0	<5.0	<5.0	5.0	B442119
Dissolved Zirconium (Zr)	ug/L	0.21	B442119	0.21	0.14	0.14	0.10	B442119
Dissolved Calcium (Ca)	mg/L	15.3	B440542	15.8	20.8	19.9	0.050	B440542

RDL = Reportable Detection Limit

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CRI255		CRI256	CRI257	CRI258		
Sampling Date		2024/07/05 13:00		2024/07/05 13:00	2024/07/07 11:00	2024/07/06 17:30		
COC Number		C#728282-02-01		C#728282-02-01	C#728282-02-01	C#728282-02-01		
	UNITS	SITE 2S	QC Batch	SITE 2SW	SITE 4 UPPER S	SITE 4 UPPER SW	RDL	QC Batch
Dissolved Magnesium (Mg)	mg/L	8.35	B440542	8.43	10.1	9.54	0.050	B440542
Dissolved Potassium (K)	mg/L	0.298	B440542	0.293	0.286	0.272	0.050	B440542
Dissolved Sodium (Na)	mg/L	4.30	B440542	4.32	4.78	4.65	0.050	B440542
Dissolved Sulphur (S)	mg/L	<3.0	B440542	<3.0	<3.0	<3.0	3.0	B440542
Total Metals by ICPMS								
Total Aluminum (Al)	ug/L	62.2	B443191	38.2	118	41.9	3.0	B443191
Total Antimony (Sb)	ug/L	<0.50	B443191	<0.50	<0.50	<0.50	0.50	B443191
Total Arsenic (As)	ug/L	0.49	B443191	0.48	0.66	0.61	0.10	B443191
Total Barium (Ba)	ug/L	61.7	B443191	61.4	89.6	83.2	1.0	B443191
Total Beryllium (Be)	ug/L	<0.10	B443191	<0.10	<0.10	<0.10	0.10	B443191
Total Bismuth (Bi)	ug/L	<1.0	B443191	<1.0	<1.0	<1.0	1.0	B443191
Total Boron (B)	ug/L	<50	B443191	<50	<50	<50	50	B443191
Total Cadmium (Cd)	ug/L	<0.010	B443191	<0.010	<0.010	<0.010	0.010	B443191
Total Chromium (Cr)	ug/L	<1.0	B443191	<1.0	<1.0	<1.0	1.0	B443191
Total Cobalt (Co)	ug/L	<0.20	B443191	<0.20	<0.20	<0.20	0.20	B443191
Total Copper (Cu)	ug/L	1.51	B443191	1.39	1.25	1.12	0.50	B443191
Total Iron (Fe)	ug/L	54	B443191	21	114	23	10	B443191
Total Lead (Pb)	ug/L	<0.20	B443191	<0.20	<0.20	<0.20	0.20	B443191
Total Lithium (Li)	ug/L	<2.0	B443191	<2.0	<2.0	<2.0	2.0	B443191
Total Manganese (Mn)	ug/L	1.6	B443191	1.2	3.2	<1.0	1.0	B443191
Total Molybdenum (Mo)	ug/L	<1.0	B443191	<1.0	<1.0	<1.0	1.0	B443191
Total Nickel (Ni)	ug/L	<1.0	B443191	<1.0	<1.0	<1.0	1.0	B443191
Total Phosphorus (P)	ug/L	<10	B443191	<10	<10	<10	10	B443191
Total Selenium (Se)	ug/L	<0.10	B443191	<0.10	<0.10	<0.10	0.10	B443191
Total Silicon (Si)	ug/L	3310	B443191	3200	3270	3160	100	B443191
Total Silver (Ag)	ug/L	<0.020	B443191	<0.020	<0.020	<0.020	0.020	B443191
Total Strontium (Sr)	ug/L	105	B443191	104	171	156	1.0	B443191
Total Thallium (Tl)	ug/L	<0.010	B443191	<0.010	<0.010	<0.010	0.010	B443191
Total Tin (Sn)	ug/L	<5.0	B443191	<5.0	<5.0	<5.0	5.0	B443191
Total Titanium (Ti)	ug/L	<5.0	B443191	<5.0	<5.0	<5.0	5.0	B443191
Total Tungsten (W)	ug/L	<1.0	B443191	<1.0	<1.0	<1.0	1.0	B443191
Total Uranium (U)	ug/L	<0.10	B443191	<0.10	<0.10	<0.10	0.10	B443191

RDL = Reportable Detection Limit

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CRI255		CRI256	CRI257	CRI258		
Sampling Date		2024/07/05 13:00		2024/07/05 13:00	2024/07/07 11:00	2024/07/06 17:30		
COC Number		C#728282-02-01		C#728282-02-01	C#728282-02-01	C#728282-02-01		
	UNITS	SITE 2S	QC Batch	SITE 2SW	SITE 4 UPPER S	SITE 4 UPPER SW	RDL	QC Batch
Total Vanadium (V)	ug/L	<5.0	B443191	<5.0	<5.0	<5.0	5.0	B443191
Total Zinc (Zn)	ug/L	<5.0	B443191	<5.0	<5.0	<5.0	5.0	B443191
Total Zirconium (Zr)	ug/L	0.20	B443191	0.19	0.25	0.17	0.10	B443191
Total Calcium (Ca)	mg/L	15.6	B440690	15.3	20.9	20.2	0.050	B440690
Total Magnesium (Mg)	mg/L	7.57	B440690	7.66	9.35	8.50	0.050	B440690
Total Potassium (K)	mg/L	0.277	B440690	0.264	0.285	0.249	0.050	B440690
Total Sodium (Na)	mg/L	3.85	B440690	3.86	4.46	4.16	0.050	B440690
Total Sulphur (S)	mg/L	<3.0	B440690	<3.0	<3.0	<3.0	3.0	B440690
RDL = Reportable Detection Limit								

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CRI259	CRI260	CRI261	CRI262		
Sampling Date		2024/07/07 11:00	2024/07/07 18:00	2024/07/07 16:00	2024/07/06 11:00		
COC Number		C#728282-02-01	C#728282-02-01	C#728282-02-01	C#728282-02-01		
	UNITS	SITE 4 UPPER D	SITE 5S	SITE 5SW	T95R-64	RDL	QC Batch
Dissolved Metals by ICPMS							
Dissolved Aluminum (Al)	ug/L	25.7	47.7	28.7	<3.0	3.0	B442119
Dissolved Antimony (Sb)	ug/L	0.89	<0.50	<0.50	<0.50	0.50	B442119
Dissolved Arsenic (As)	ug/L	0.42	1.14	0.48	<0.10	0.10	B442119
Dissolved Barium (Ba)	ug/L	88.4	82.3	67.4	436	1.0	B442119
Dissolved Beryllium (Be)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	B442119
Dissolved Bismuth (Bi)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	B442119
Dissolved Boron (B)	ug/L	<50	<50	<50	139	50	B442119
Dissolved Cadmium (Cd)	ug/L	0.094	0.018	<0.010	<0.010	0.010	B442119
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	B442119
Dissolved Cobalt (Co)	ug/L	<0.20	0.49	<0.20	<0.20	0.20	B442119
Dissolved Copper (Cu)	ug/L	77.4	1.16	1.59	<0.20	0.20	B442119
Dissolved Iron (Fe)	ug/L	34.1	146	14.0	344	5.0	B442119
Dissolved Lead (Pb)	ug/L	1.65	<0.20	<0.20	<0.20	0.20	B442119
Dissolved Lithium (Li)	ug/L	<2.0	<2.0	<2.0	58.0	2.0	B442119
Dissolved Manganese (Mn)	ug/L	59.2	177	<1.0	17.0	1.0	B442119
Dissolved Molybdenum (Mo)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	B442119
Dissolved Nickel (Ni)	ug/L	3.1	<1.0	<1.0	<1.0	1.0	B442119
Dissolved Phosphorus (P)	ug/L	<10	<10	<10	10	10	B442119
Dissolved Selenium (Se)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	B442119
Dissolved Silicon (Si)	ug/L	2960	3820	3440	3760	100	B442119
Dissolved Silver (Ag)	ug/L	<0.020	<0.020	<0.020	<0.020	0.020	B442119
Dissolved Strontium (Sr)	ug/L	156	123	120	286	1.0	B442119
Dissolved Thallium (Tl)	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	B442119
Dissolved Tin (Sn)	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	B442119
Dissolved Titanium (Ti)	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	B442119
Dissolved Tungsten (W)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	B442119
Dissolved Uranium (U)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	B442119
Dissolved Vanadium (V)	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	B442119
Dissolved Zinc (Zn)	ug/L	35.5	12.6	<5.0	<5.0	5.0	B442119
Dissolved Zirconium (Zr)	ug/L	0.18	0.24	0.19	<0.10	0.10	B442119
Dissolved Calcium (Ca)	mg/L	20.6	18.1	16.0	17.7	0.050	B440542

RDL = Reportable Detection Limit

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CRI259	CRI260	CRI261	CRI262		
Sampling Date		2024/07/07 11:00	2024/07/07 18:00	2024/07/07 16:00	2024/07/06 11:00		
COC Number		C#728282-02-01	C#728282-02-01	C#728282-02-01	C#728282-02-01		
	UNITS	SITE 4 UPPER D	SITE 5S	SITE 5SW	T95R-64	RDL	QC Batch
Dissolved Magnesium (Mg)	mg/L	9.23	8.53	8.74	1.98	0.050	B440542
Dissolved Potassium (K)	mg/L	1.24	0.408	0.336	1.41	0.050	B440542
Dissolved Sodium (Na)	mg/L	5.63	4.57	4.80	327	0.050	B440542
Dissolved Sulphur (S)	mg/L	<3.0	<3.0	<3.0	<3.0	3.0	B440542
Total Metals by ICPMS							
Total Aluminum (Al)	ug/L	575	150	32.3	4.6	3.0	B443191
Total Antimony (Sb)	ug/L	1.42	<0.50	<0.50	<0.50	0.50	B443191
Total Arsenic (As)	ug/L	0.55	1.18	0.45	<0.10	0.10	B443191
Total Barium (Ba)	ug/L	91.7	80.1	64.5	397	1.0	B443191
Total Beryllium (Be)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	B443191
Total Bismuth (Bi)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	B443191
Total Boron (B)	ug/L	<50	<50	<50	124	50	B443191
Total Cadmium (Cd)	ug/L	0.096	0.027	<0.010	<0.010	0.010	B443191
Total Chromium (Cr)	ug/L	3.0	<1.0	<1.0	<1.0	1.0	B443191
Total Cobalt (Co)	ug/L	0.32	0.54	<0.20	<0.20	0.20	B443191
Total Copper (Cu)	ug/L	103	1.33	1.38	<0.50	0.50	B443191
Total Iron (Fe)	ug/L	555	251	15	401	10	B443191
Total Lead (Pb)	ug/L	8.84	<0.20	<0.20	<0.20	0.20	B443191
Total Lithium (Li)	ug/L	<2.0	<2.0	<2.0	53.1	2.0	B443191
Total Manganese (Mn)	ug/L	59.0	162	<1.0	15.5	1.0	B443191
Total Molybdenum (Mo)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	B443191
Total Nickel (Ni)	ug/L	3.5	<1.0	<1.0	<1.0	1.0	B443191
Total Phosphorus (P)	ug/L	37	12	<10	13	10	B443191
Total Selenium (Se)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	B443191
Total Silicon (Si)	ug/L	3480	3600	3280	3480	100	B443191
Total Silver (Ag)	ug/L	0.033	<0.020	<0.020	<0.020	0.020	B443191
Total Strontium (Sr)	ug/L	152	111	110	277	1.0	B443191
Total Thallium (Tl)	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	B443191
Total Tin (Sn)	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	B443191
Total Titanium (Ti)	ug/L	9.8	<5.0	<5.0	<5.0	5.0	B443191
Total Tungsten (W)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	B443191
Total Uranium (U)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	B443191

RDL = Reportable Detection Limit

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ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CRI259	CRI260	CRI261	CRI262		
Sampling Date		2024/07/07 11:00	2024/07/07 18:00	2024/07/07 16:00	2024/07/06 11:00		
COC Number		C#728282-02-01	C#728282-02-01	C#728282-02-01	C#728282-02-01		
	UNITS	SITE 4 UPPER D	SITE 5S	SITE 5SW	T95R-64	RDL	QC Batch
Total Vanadium (V)	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	B443191
Total Zinc (Zn)	ug/L	39.8	14.2	<5.0	<5.0	5.0	B443191
Total Zirconium (Zr)	ug/L	0.27	0.21	0.18	<0.10	0.10	B443191
Total Calcium (Ca)	mg/L	19.9	17.3	15.9	16.7	0.050	B440690
Total Magnesium (Mg)	mg/L	8.42	7.73	7.74	1.74	0.050	B440690
Total Potassium (K)	mg/L	1.09	0.382	0.313	1.22	0.050	B440690
Total Sodium (Na)	mg/L	4.81	4.05	4.31	279	0.050	B440690
Total Sulphur (S)	mg/L	<3.0	<3.0	<3.0	<3.0	3.0	B440690
RDL = Reportable Detection Limit							

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ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CRI263		CRI264		
Sampling Date		2024/07/09 18:30		2024/07/06 11:00		
COC Number		C#728282-02-01		C#728282-02-01		
	UNITS	TRIP BLANK	QC Batch	DUP-A	RDL	QC Batch
Dissolved Metals by ICPMS						
Dissolved Aluminum (Al)	ug/L	<3.0	B442119	<3.0	3.0	B442119
Dissolved Antimony (Sb)	ug/L	<0.50	B442119	<0.50	0.50	B442119
Dissolved Arsenic (As)	ug/L	<0.10	B442119	<0.10	0.10	B442119
Dissolved Barium (Ba)	ug/L	<1.0	B442119	431	1.0	B442119
Dissolved Beryllium (Be)	ug/L	<0.10	B442119	<0.10	0.10	B442119
Dissolved Bismuth (Bi)	ug/L	<1.0	B442119	<1.0	1.0	B442119
Dissolved Boron (B)	ug/L	<50	B442119	147	50	B442119
Dissolved Cadmium (Cd)	ug/L	<0.010	B442119	<0.010	0.010	B442119
Dissolved Chromium (Cr)	ug/L	<1.0	B442119	<1.0	1.0	B442119
Dissolved Cobalt (Co)	ug/L	<0.20	B442119	<0.20	0.20	B442119
Dissolved Copper (Cu)	ug/L	0.54	B446363	<0.20	0.20	B442119
Dissolved Iron (Fe)	ug/L	<5.0	B442119	300	5.0	B442119
Dissolved Lead (Pb)	ug/L	<0.20	B442119	<0.20	0.20	B442119
Dissolved Lithium (Li)	ug/L	<2.0	B442119	62.0	2.0	B442119
Dissolved Manganese (Mn)	ug/L	<1.0	B442119	16.9	1.0	B442119
Dissolved Molybdenum (Mo)	ug/L	<1.0	B442119	<1.0	1.0	B442119
Dissolved Nickel (Ni)	ug/L	<1.0	B442119	<1.0	1.0	B442119
Dissolved Phosphorus (P)	ug/L	<10	B442119	11	10	B442119
Dissolved Selenium (Se)	ug/L	<0.10	B442119	<0.10	0.10	B442119
Dissolved Silicon (Si)	ug/L	<100	B442119	3800	100	B442119
Dissolved Silver (Ag)	ug/L	<0.020	B442119	<0.020	0.020	B442119
Dissolved Strontium (Sr)	ug/L	<1.0	B442119	288	1.0	B442119
Dissolved Thallium (Tl)	ug/L	<0.010	B442119	<0.010	0.010	B442119
Dissolved Tin (Sn)	ug/L	<5.0	B442119	<5.0	5.0	B442119
Dissolved Titanium (Ti)	ug/L	<5.0	B442119	<5.0	5.0	B442119
Dissolved Tungsten (W)	ug/L	<1.0	B442119	<1.0	1.0	B442119
Dissolved Uranium (U)	ug/L	<0.10	B442119	<0.10	0.10	B442119
Dissolved Vanadium (V)	ug/L	<5.0	B442119	<5.0	5.0	B442119
Dissolved Zinc (Zn)	ug/L	<5.0	B442119	<5.0	5.0	B442119
Dissolved Zirconium (Zr)	ug/L	<0.10	B442119	<0.10	0.10	B442119
Dissolved Calcium (Ca)	mg/L	<0.050	B445292	17.7	0.050	B440542
RDL = Reportable Detection Limit						

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ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CRI263		CRI264		
Sampling Date		2024/07/09 18:30		2024/07/06 11:00		
COC Number		C#728282-02-01		C#728282-02-01		
	UNITS	**TRIP BLANK**	**QC Batch**	**DUP-A**	**RDL**	**QC Batch**
Dissolved Magnesium (Mg)	mg/L	<0.050	B445292	2.01	0.050	B440542
Dissolved Potassium (K)	mg/L	<0.050	B445292	1.39	0.050	B440542
Dissolved Sodium (Na)	mg/L	0.373	B445292	331	0.050	B440542
Dissolved Sulphur (S)	mg/L	<3.0	B445292	<3.0	3.0	B440542
Total Metals by ICPMS						
Total Aluminum (Al)	ug/L	<3.0	B442630	4.7	3.0	B443191
Total Antimony (Sb)	ug/L	<0.50	B442630	<0.50	0.50	B443191
Total Arsenic (As)	ug/L	<0.10	B442630	<0.10	0.10	B443191
Total Barium (Ba)	ug/L	<1.0	B442630	402	1.0	B443191
Total Beryllium (Be)	ug/L	<0.10	B442630	<0.10	0.10	B443191
Total Bismuth (Bi)	ug/L	<1.0	B442630	<1.0	1.0	B443191
Total Boron (B)	ug/L	<50	B442630	128	50	B443191
Total Cadmium (Cd)	ug/L	<0.010	B442630	<0.010	0.010	B443191
Total Chromium (Cr)	ug/L	<1.0	B442630	<1.0	1.0	B443191
Total Cobalt (Co)	ug/L	<0.20	B442630	<0.20	0.20	B443191
Total Copper (Cu)	ug/L	0.55	B442630	<0.50	0.50	B443191
Total Iron (Fe)	ug/L	<10	B442630	421	10	B443191
Total Lead (Pb)	ug/L	<0.20	B442630	<0.20	0.20	B443191
Total Lithium (Li)	ug/L	<2.0	B442630	56.6	2.0	B443191
Total Manganese (Mn)	ug/L	<1.0	B442630	15.8	1.0	B443191
Total Molybdenum (Mo)	ug/L	<1.0	B442630	<1.0	1.0	B443191
Total Nickel (Ni)	ug/L	<1.0	B442630	<1.0	1.0	B443191
Total Phosphorus (P)	ug/L	<10	B442630	13	10	B443191
Total Selenium (Se)	ug/L	<0.10	B442630	<0.10	0.10	B443191
Total Silicon (Si)	ug/L	<100	B442630	3600	100	B443191
Total Silver (Ag)	ug/L	<0.020	B442630	<0.020	0.020	B443191
Total Strontium (Sr)	ug/L	<1.0	B442630	283	1.0	B443191
Total Thallium (Tl)	ug/L	<0.010	B442630	<0.010	0.010	B443191
Total Tin (Sn)	ug/L	<5.0	B442630	<5.0	5.0	B443191
Total Titanium (Ti)	ug/L	<5.0	B442630	<5.0	5.0	B443191
Total Tungsten (W)	ug/L	<1.0	B442630	<1.0	1.0	B443191
Total Uranium (U)	ug/L	<0.10	B442630	<0.10	0.10	B443191
RDL = Reportable Detection Limit						

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ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CRI263		CRI264		
Sampling Date		2024/07/09 18:30		2024/07/06 11:00		
COC Number		C#728282-02-01		C#728282-02-01		
	UNITS	TRIP BLANK	QC Batch	DUP-A	RDL	QC Batch
Total Vanadium (V)	ug/L	<5.0	B442630	<5.0	5.0	B443191
Total Zinc (Zn)	ug/L	<5.0	B442630	<5.0	5.0	B443191
Total Zirconium (Zr)	ug/L	<0.10	B442630	0.10	0.10	B443191
Total Calcium (Ca)	mg/L	<0.050	B445403	16.9	0.050	B440690
Total Magnesium (Mg)	mg/L	<0.050	B445403	1.76	0.050	B440690
Total Potassium (K)	mg/L	<0.050	B445403	1.27	0.050	B440690
Total Sodium (Na)	mg/L	0.363	B445403	283	0.050	B440690
Total Sulphur (S)	mg/L	<3.0	B445403	<3.0	3.0	B440690
RDL = Reportable Detection Limit						

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GENERAL COMMENTS

Sample CRI255 [SITE 2S] : Sample received past method specified hold time for Nitrate + Nitrite (N). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample received past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Total Suspended Solids (NFR). Sample was analyzed past method specified hold time for Total Dissolved Solids (Filt. Residue). Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Sample was analyzed past method specified hold time for Nitrite (N) Regular Level Water. Sample received past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for Color (True) by Automated Analyzer.

Sample CRI256 [SITE 2SW] : Sample received past method specified hold time for Nitrate + Nitrite (N). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample received past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Turbidity. Sample received past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Total Suspended Solids (NFR). Sample was analyzed past method specified hold time for Total Dissolved Solids (Filt. Residue). Sample was analyzed past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Sample was analyzed past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer.

Sample CRI257 [SITE 4 UPPER S] : Sample received past method specified hold time for Nitrate + Nitrite (N). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample received past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Turbidity. Sample received past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Total Suspended Solids (NFR). Sample was analyzed past method specified hold time for Total Dissolved Solids (Filt. Residue). Sample was analyzed past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Sample was analyzed past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer.

Sample CRI258 [SITE 4 UPPER SW] : Sample received past method specified hold time for Nitrate + Nitrite (N). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample received past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Turbidity. Sample received past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Total Suspended Solids (NFR). Sample was analyzed past method specified hold time for Total Dissolved Solids (Filt. Residue). Sample was analyzed past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Sample was analyzed past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer.

Sample CRI259 [SITE 4 UPPER D] : Sample was analyzed past method specified hold time for Total Suspended Solids (NFR). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample received past method specified hold time for Nitrate + Nitrite (N). Sample received past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Total Dissolved Solids (Filt. Residue). Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Sample was analyzed past method specified hold time for Nitrite (N) Regular Level Water. Sample received past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Alkalinity @25C (pp, total), CO3,HCO3,OH.

Sample CRI260 [SITE 5S] : Sample received past method specified hold time for Nitrate + Nitrite (N). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample received past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Total Suspended Solids (NFR). Sample was analyzed past method specified hold time for Total Dissolved Solids (Filt. Residue). Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Sample was analyzed past method specified hold time for Nitrite (N) Regular Level Water. Sample received past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for Color (True) by Automated Analyzer.

Sample CRI261 [SITE 5SW] : Sample received past method specified hold time for Nitrate + Nitrite (N). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample received past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Turbidity. Sample received past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Total Suspended Solids (NFR). Sample was analyzed past method specified hold time for Total Dissolved Solids (Filt. Residue). Sample was analyzed past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Sample was analyzed past method specified hold

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time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer.

Sample CRI262 [T95R-64] : Sample received past method specified hold time for Nitrate + Nitrite (N). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample received past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Total Dissolved Solids (Filt. Residue). Sample was analyzed past method specified hold time for Color (True) by Automated Analyzer. Sample received past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Total Suspended Solids (NFR). Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Sample was analyzed past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer.

Sample CRI263 [TRIP BLANK] : Sample received past method specified hold time for Nitrate + Nitrite (N). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample received past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Total Dissolved Solids (Filt. Residue). Sample was analyzed past method specified hold time for Color (True) by Automated Analyzer. Sample received past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Total Suspended Solids (NFR). Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Sample was analyzed past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer.

Sample CRI264 [DUP-A] : Sample received past method specified hold time for Nitrate + Nitrite (N). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample received past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Color (True) by Automated Analyzer. Sample received past method specified hold time for Color (True) by Automated Analyzer. Sample was analyzed past method specified hold time for Total Suspended Solids (NFR). Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Sample was analyzed past method specified hold time for Nitrite (N) Regular Level Water. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Total Dissolved Solids (Filt. Residue). Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer.

Sample CRI255, Elements by CRC ICPMS (dissolved): Test repeated.
Sample CRI263, Elements by CRC ICPMS (dissolved): Test repeated.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B442102	Total Suspended Solids	2024/07/18	100	80 - 120	98	80 - 120	<1.0	mg/L	NC	20
B442119	Dissolved Aluminum (Al)	2024/07/18	97	80 - 120	101	80 - 120	<3.0	ug/L	1.3	20
B442119	Dissolved Antimony (Sb)	2024/07/18	96	80 - 120	102	80 - 120	<0.50	ug/L	0.96	20
B442119	Dissolved Arsenic (As)	2024/07/18	100	80 - 120	101	80 - 120	<0.10	ug/L	1.4	20
B442119	Dissolved Barium (Ba)	2024/07/18	NC	80 - 120	100	80 - 120	<1.0	ug/L	0.77	20
B442119	Dissolved Beryllium (Be)	2024/07/18	93	80 - 120	97	80 - 120	<0.10	ug/L	NC	20
B442119	Dissolved Bismuth (Bi)	2024/07/18	92	80 - 120	97	80 - 120	<1.0	ug/L	NC	20
B442119	Dissolved Boron (B)	2024/07/18	93	80 - 120	97	80 - 120	<50	ug/L	NC	20
B442119	Dissolved Cadmium (Cd)	2024/07/18	97	80 - 120	101	80 - 120	<0.010	ug/L	2.9	20
B442119	Dissolved Chromium (Cr)	2024/07/18	88	80 - 120	93	80 - 120	<1.0	ug/L	NC	20
B442119	Dissolved Cobalt (Co)	2024/07/18	87	80 - 120	95	80 - 120	<0.20	ug/L	NC	20
B442119	Dissolved Copper (Cu)	2024/07/18	87	80 - 120	94	80 - 120	<0.20	ug/L	1.4	20
B442119	Dissolved Iron (Fe)	2024/07/18	97	80 - 120	100	80 - 120	<5.0	ug/L	NC	20
B442119	Dissolved Lead (Pb)	2024/07/18	93	80 - 120	97	80 - 120	<0.20	ug/L	NC	20
B442119	Dissolved Lithium (Li)	2024/07/18	96	80 - 120	100	80 - 120	<2.0	ug/L	NC	20
B442119	Dissolved Manganese (Mn)	2024/07/18	91	80 - 120	97	80 - 120	<1.0	ug/L	0.70	20
B442119	Dissolved Molybdenum (Mo)	2024/07/18	106	80 - 120	104	80 - 120	<1.0	ug/L	NC	20
B442119	Dissolved Nickel (Ni)	2024/07/18	90	80 - 120	97	80 - 120	<1.0	ug/L	1.4	20
B442119	Dissolved Phosphorus (P)	2024/07/18	103	80 - 120	102	80 - 120	<10	ug/L	NC	20
B442119	Dissolved Selenium (Se)	2024/07/18	96	80 - 120	101	80 - 120	<0.10	ug/L	0.56	20
B442119	Dissolved Silicon (Si)	2024/07/18	99	80 - 120	104	80 - 120	<100	ug/L	2.7	20
B442119	Dissolved Silver (Ag)	2024/07/18	96	80 - 120	99	80 - 120	<0.020	ug/L	NC	20
B442119	Dissolved Strontium (Sr)	2024/07/18	NC	80 - 120	97	80 - 120	<1.0	ug/L	1.5	20
B442119	Dissolved Thallium (Tl)	2024/07/18	95	80 - 120	99	80 - 120	<0.010	ug/L	1.5	20
B442119	Dissolved Tin (Sn)	2024/07/18	98	80 - 120	102	80 - 120	<5.0	ug/L	NC	20
B442119	Dissolved Titanium (Ti)	2024/07/18	95	80 - 120	98	80 - 120	<5.0	ug/L	NC	20
B442119	Dissolved Tungsten (W)	2024/07/18	99	80 - 120	102	80 - 120	<1.0	ug/L		
B442119	Dissolved Uranium (U)	2024/07/18	98	80 - 120	102	80 - 120	<0.10	ug/L	2.6	20
B442119	Dissolved Vanadium (V)	2024/07/18	93	80 - 120	96	80 - 120	<5.0	ug/L	NC	20
B442119	Dissolved Zinc (Zn)	2024/07/18	NC	80 - 120	99	80 - 120	<5.0	ug/L	0.48	20
B442119	Dissolved Zirconium (Zr)	2024/07/18	102	80 - 120	101	80 - 120	<0.10	ug/L	NC	20
B442175	Total Phosphorus (P)	2024/07/18	NC	N/A	102	80 - 120	<0.0030	mg/L	0.28	20

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			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B442178	Total Phosphorus (P)	2024/07/19	111	N/A	102	80 - 120	<0.0030	mg/L	NC	20
B442275	pH	2024/07/17			100	97 - 103			0.23	N/A
B442285	Alkalinity (PP as CaCO3)	2024/07/17					<1.0	mg/L	NC	20
B442285	Alkalinity (Total as CaCO3)	2024/07/17			98	80 - 120	<1.0	mg/L	2.2	20
B442285	Bicarbonate (HCO3)	2024/07/17					<1.0	mg/L	2.2	20
B442285	Carbonate (CO3)	2024/07/17					<1.0	mg/L	NC	20
B442285	Hydroxide (OH)	2024/07/17					<1.0	mg/L	NC	20
B442322	Nitrate plus Nitrite (N)	2024/07/17	NC	80 - 120	108	80 - 120	<0.020	mg/L	1.1	25
B442323	True Colour	2024/07/17			111	80 - 120	<2.0	Col. Unit	NC	20
B442329	Nitrite (N)	2024/07/17	NC	80 - 120	105	80 - 120	<0.0050	mg/L	0.31	20
B442375	Dissolved Fluoride (F)	2024/07/17	NC	80 - 120	91	80 - 120	<0.050	mg/L	0.88	20
B442465	Chloride (Cl)	2024/07/18	61 (1)	80 - 120	100	80 - 120	<1.0	mg/L	NC	20
B442465	Sulphate (SO4)	2024/07/18	NC	80 - 120	101	80 - 120	<1.0	mg/L	0.67	20
B442470	Turbidity	2024/07/17			104	80 - 120	<0.10	NTU	8.8	20
B442505	pH	2024/07/17			100	97 - 103			1.4	N/A
B442520	Alkalinity (PP as CaCO3)	2024/07/17					<1.0	mg/L	NC	20
B442520	Alkalinity (Total as CaCO3)	2024/07/17			96	80 - 120	<1.0	mg/L	0.19	20
B442520	Bicarbonate (HCO3)	2024/07/17					<1.0	mg/L	0.19	20
B442520	Carbonate (CO3)	2024/07/17					<1.0	mg/L	NC	20
B442520	Hydroxide (OH)	2024/07/17					<1.0	mg/L	NC	20
B442537	Nitrate plus Nitrite (N)	2024/07/17	110	80 - 120	108	80 - 120	<0.020	mg/L	NC	25
B442570	Nitrite (N)	2024/07/17	104	80 - 120	105	80 - 120	<0.0050	mg/L	NC	20
B442630	Total Aluminum (Al)	2024/07/19	98	80 - 120	99	80 - 120	<3.0	ug/L	NC	20
B442630	Total Antimony (Sb)	2024/07/19	102	80 - 120	101	80 - 120	<0.50	ug/L	NC	20
B442630	Total Arsenic (As)	2024/07/19	103	80 - 120	100	80 - 120	<0.10	ug/L	NC	20
B442630	Total Barium (Ba)	2024/07/19	98	80 - 120	99	80 - 120	<1.0	ug/L	NC	20
B442630	Total Beryllium (Be)	2024/07/19	104	80 - 120	101	80 - 120	<0.10	ug/L	NC	20
B442630	Total Bismuth (Bi)	2024/07/19	95	80 - 120	98	80 - 120	<1.0	ug/L	NC	20
B442630	Total Boron (B)	2024/07/19	96	80 - 120	97	80 - 120	<50	ug/L	NC	20
B442630	Total Cadmium (Cd)	2024/07/19	99	80 - 120	99	80 - 120	<0.010	ug/L	NC	20
B442630	Total Chromium (Cr)	2024/07/19	96	80 - 120	100	80 - 120	<1.0	ug/L	NC	20
B442630	Total Cobalt (Co)	2024/07/19	91	80 - 120	95	80 - 120	<0.20	ug/L	NC	20

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B442630	Total Copper (Cu)	2024/07/19	90	80 - 120	95	80 - 120	<0.50	ug/L	2.5	20
B442630	Total Iron (Fe)	2024/07/19	103	80 - 120	98	80 - 120	<10	ug/L	NC	20
B442630	Total Lead (Pb)	2024/07/19	97	80 - 120	97	80 - 120	<0.20	ug/L	NC	20
B442630	Total Lithium (Li)	2024/07/19	97	80 - 120	99	80 - 120	<2.0	ug/L	NC	20
B442630	Total Manganese (Mn)	2024/07/19	95	80 - 120	98	80 - 120	<1.0	ug/L	NC	20
B442630	Total Molybdenum (Mo)	2024/07/19	107	80 - 120	103	80 - 120	<1.0	ug/L	NC	20
B442630	Total Nickel (Ni)	2024/07/19	93	80 - 120	98	80 - 120	<1.0	ug/L	NC	20
B442630	Total Phosphorus (P)	2024/07/19	104	80 - 120	99	80 - 120	<10	ug/L	NC	20
B442630	Total Selenium (Se)	2024/07/19	100	80 - 120	94	80 - 120	<0.10	ug/L	NC	20
B442630	Total Silicon (Si)	2024/07/19	105	80 - 120	102	80 - 120	<100	ug/L	NC	20
B442630	Total Silver (Ag)	2024/07/19	97	80 - 120	97	80 - 120	<0.020	ug/L	NC	20
B442630	Total Strontium (Sr)	2024/07/19	101	80 - 120	99	80 - 120	<1.0	ug/L	NC	20
B442630	Total Thallium (Tl)	2024/07/19	99	80 - 120	100	80 - 120	<0.010	ug/L	NC	20
B442630	Total Tin (Sn)	2024/07/19	100	80 - 120	103	80 - 120	<5.0	ug/L	NC	20
B442630	Total Titanium (Ti)	2024/07/19	100	80 - 120	100	80 - 120	<5.0	ug/L	NC	20
B442630	Total Tungsten (W)	2024/07/19	101	80 - 120	99	80 - 120	<1.0	ug/L	NC	20
B442630	Total Uranium (U)	2024/07/19	97	80 - 120	98	80 - 120	<0.10	ug/L	NC	20
B442630	Total Vanadium (V)	2024/07/19	99	80 - 120	99	80 - 120	<5.0	ug/L	NC	20
B442630	Total Zinc (Zn)	2024/07/18	95	80 - 120	100	80 - 120	<5.0	ug/L	1.3	20
B442630	Total Zirconium (Zr)	2024/07/19	105	80 - 120	100	80 - 120	<0.10	ug/L	NC	20
B442803	Total Suspended Solids	2024/07/18	104	80 - 120	100	80 - 120	<1.0	mg/L	NC	20
B443191	Total Aluminum (Al)	2024/07/18	103	80 - 120	99	80 - 120	<3.0	ug/L	0.60	20
B443191	Total Antimony (Sb)	2024/07/18	102	80 - 120	103	80 - 120	<0.50	ug/L	NC	20
B443191	Total Arsenic (As)	2024/07/18	103	80 - 120	104	80 - 120	<0.10	ug/L	4.1	20
B443191	Total Barium (Ba)	2024/07/18	99	80 - 120	101	80 - 120	<1.0	ug/L	2.4	20
B443191	Total Beryllium (Be)	2024/07/18	104	80 - 120	103	80 - 120	<0.10	ug/L	NC	20
B443191	Total Bismuth (Bi)	2024/07/18	97	80 - 120	102	80 - 120	<1.0	ug/L	NC	20
B443191	Total Boron (B)	2024/07/18	101	80 - 120	98	80 - 120	<50	ug/L	NC	20
B443191	Total Cadmium (Cd)	2024/07/18	102	80 - 120	103	80 - 120	<0.010	ug/L	NC	20
B443191	Total Chromium (Cr)	2024/07/18	99	80 - 120	104	80 - 120	<1.0	ug/L	NC	20
B443191	Total Cobalt (Co)	2024/07/18	94	80 - 120	99	80 - 120	<0.20	ug/L	NC	20
B443191	Total Copper (Cu)	2024/07/18	94	80 - 120	99	80 - 120	<0.50	ug/L	6.0	20

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B443191	Total Iron (Fe)	2024/07/18	102	80 - 120	110	80 - 120	<10	ug/L	0.22	20
B443191	Total Lead (Pb)	2024/07/18	99	80 - 120	102	80 - 120	<0.20	ug/L	NC	20
B443191	Total Lithium (Li)	2024/07/18	100	80 - 120	102	80 - 120	<2.0	ug/L	0.79	20
B443191	Total Manganese (Mn)	2024/07/18	95	80 - 120	103	80 - 120	<1.0	ug/L	0.85	20
B443191	Total Molybdenum (Mo)	2024/07/18	105	80 - 120	107	80 - 120	<1.0	ug/L	NC	20
B443191	Total Nickel (Ni)	2024/07/18	96	80 - 120	102	80 - 120	<1.0	ug/L	NC	20
B443191	Total Phosphorus (P)	2024/07/18	102	80 - 120	101	80 - 120	<10	ug/L	3.3	20
B443191	Total Selenium (Se)	2024/07/18	101	80 - 120	107	80 - 120	<0.10	ug/L	NC	20
B443191	Total Silicon (Si)	2024/07/18	108	80 - 120	114	80 - 120	<100	ug/L	5.1	20
B443191	Total Silver (Ag)	2024/07/18	99	80 - 120	102	80 - 120	<0.020	ug/L	NC	20
B443191	Total Strontium (Sr)	2024/07/18	100	80 - 120	104	80 - 120	<1.0	ug/L	0.59	20
B443191	Total Thallium (Tl)	2024/07/18	100	80 - 120	104	80 - 120	<0.010	ug/L	NC	20
B443191	Total Tin (Sn)	2024/07/18	101	80 - 120	105	80 - 120	<5.0	ug/L	NC	20
B443191	Total Titanium (Ti)	2024/07/18	104	80 - 120	104	80 - 120	<5.0	ug/L	4.0	20
B443191	Total Tungsten (W)	2024/07/18	97	80 - 120	102	80 - 120	<1.0	ug/L		
B443191	Total Uranium (U)	2024/07/18	104	80 - 120	110	80 - 120	<0.10	ug/L	NC	20
B443191	Total Vanadium (V)	2024/07/18	100	80 - 120	103	80 - 120	<5.0	ug/L	NC	20
B443191	Total Zinc (Zn)	2024/07/18	102	80 - 120	105	80 - 120	<5.0	ug/L	NC	20
B443191	Total Zirconium (Zr)	2024/07/18	103	80 - 120	106	80 - 120	<0.10	ug/L	NC	20
B443397	Total Dissolved Solids	2024/07/19	100	80 - 120	97	80 - 120	<10	mg/L	0	20
B443543	Total Nitrogen (N)	2024/07/19	106	80 - 120	107	80 - 120	<0.020	mg/L	12	20
B443545	Total Nitrogen (N)	2024/07/19	92	80 - 120	109	80 - 120	<0.020	mg/L	3.4	20
B443699	Turbidity	2024/07/18			104	80 - 120	<0.10	NTU	2.1	20
B443717	Dissolved Fluoride (F)	2024/07/18	95	80 - 120	97	80 - 120	<0.050	mg/L	NC	20
B443802	Nitrate plus Nitrite (N)	2024/07/18	113	80 - 120	110	80 - 120	<0.020	mg/L	NC	25
B443829	Nitrite (N)	2024/07/18	108	80 - 120	105	80 - 120	<0.0050	mg/L	NC	20
B444257	Dissolved Fluoride (F)	2024/07/19	105	80 - 120	96	80 - 120	<0.050	mg/L	NC	20
B444339	Acidity (pH 4.5)	2024/07/19					<1.0	mg/L	NC	20
B444339	Acidity (pH 8.3)	2024/07/19			99	80 - 120	<1.0	mg/L	NC	20
B444456	Acidity (pH 4.5)	2024/07/19					<1.0	mg/L	NC	20
B444456	Acidity (pH 8.3)	2024/07/19			100	80 - 120	<1.0	mg/L	NC	20
B444500	Total Dissolved Solids	2024/07/18	98	80 - 120	98	80 - 120	<10	mg/L	6.1	20

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B444524	Total Organic Carbon (C)	2024/07/18	102	80 - 120	98	80 - 120	<0.50	mg/L	NC	20
B445151	Strong Acid Dissoc. Cyanide (CN)	2024/07/19	104	80 - 120	104	80 - 120	<0.00050	mg/L	20	20
B445386	Dissolved Organic Carbon (C)	2024/07/19	NC	80 - 120	96	80 - 120	<0.50	mg/L	2.3	20
B445995	Apparent Colour	2024/07/19			95	80 - 120	<2.0	PtCo units	7.1	20
B446050	Dissolved Organic Carbon (C)	2024/07/19	103	80 - 120	97	80 - 120	<0.50	mg/L	NC	20
B446199	True Colour	2024/07/19			97	80 - 120	<2.0	Col. Unit	0.83	20
B446363	Dissolved Cadmium (Cd)	2024/07/20			102	80 - 120	<0.010	ug/L		
B446363	Dissolved Copper (Cu)	2024/07/20			97	80 - 120	<0.20	ug/L		
B446674	Orthophosphate (P)	2024/07/20	123 (1)	80 - 120	97	80 - 120	<0.0030	mg/L	NC	20
B447464	Phenols	2024/07/22	82	80 - 120	99	80 - 120	<0.0015	mg/L	NC	20
B447484	Dissolved Mercury (Hg)	2024/07/22	112	80 - 120	114	80 - 120	<0.0019	ug/L	NC	20
B447677	Alkalinity (PP as CaCO3)	2024/07/22					<1.0	mg/L	NC	20
B447677	Alkalinity (Total as CaCO3)	2024/07/22			93	80 - 120	<1.0	mg/L	0.22	20
B447677	Bicarbonate (HCO3)	2024/07/22					<1.0	mg/L	0.22	20
B447677	Carbonate (CO3)	2024/07/22					<1.0	mg/L	NC	20
B447677	Hydroxide (OH)	2024/07/22					<1.0	mg/L	NC	20
B447682	pH	2024/07/22			100	97 - 103			0.18	N/A
B447728	Total Mercury (Hg)	2024/07/23	106	80 - 120	103	80 - 120	<0.0019	ug/L	6.2	20
B447766	Total Nitrogen (N)	2024/07/23	100	80 - 120	106	80 - 120	<0.020	mg/L	1.1	20
B447852	Chloride (Cl)	2024/07/22	NC	80 - 120	100	80 - 120	<1.0	mg/L		
B447852	Sulphate (SO4)	2024/07/22	NC	80 - 120	102	80 - 120	<1.0	mg/L	0.20	20
B448317	Total Ammonia (N)	2024/07/22	96	80 - 120	99	80 - 120	<0.015	mg/L	NC	20
B448334	Total Ammonia (N)	2024/07/22	96	80 - 120	99	80 - 120	<0.015	mg/L	NC	20

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B448448	Total Ammonia (N)	2024/07/22	97	80 - 120	101	80 - 120	<0.015	mg/L	NC	20

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

C453348
2024/07/16 09:00

Bureau Veritas
4606 Canada Way, Burnaby, British Columbia Canada V5G 1K5 Tel:(604) 734 7276 Toll-free:800-563-6266 Fax:(604) 731 2386 www.bvna.com

Chain Of Custody Record

INVOICE TO:		Report Information		Project Information		Laboratory Use Only	
Company Name	#9888 Palmer Environmental Consulting Group (PEC	Company Name		Quotation #	C40429	Bureau Veritas Job #	Bottle Order #:
Contact Name	Nathalie Brandebourger	Contact Name	Nathalie Brandebourger	P.O. #			728282
Address	#630 – 470 Granville Street Vancouver BC V6C 1V5	Address		Project #	1905903 Tenas 2024	Chain Of Custody Record	Project Manager
Phone	(604) 629-9075 Fax:	Phone	Fax:	Project Name		C#728282-02-01	Nahed Amer
Email	nathalie.brandebourger@pecg.ca	Email	nathalie.brandebourger@pecg.ca	Site #			
				Sampled By	NICOLE ANASIS		

Regulatory Criteria: ☐ CSR ☐ CCME ☐ BC Water Quality ☐ Other

Special Instructions

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

Regular (Standard) TAT: ✓
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
1 DAY ☐ 2 Day ☐ 3 Day ☐ Date Required: ☐
Rush Confirmation Number: (call lab for #)

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

	Sample Barcode Label	Sample (Location) Identification	Date Sampled (mm/dd)	Time Sampled	Matrix	Metals Field Filtered ? (Y / N)	Color (True) by Automated Analyzer	Colour (Apparent)	Hardness (calculated as CaCO3)	pH @25°C	Total Suspended Solids (NFR)	Total Dissolved Solids (Filt. Residue)	Turbidity	Acidity pH 4.5 & pH 8.3 (as CaCO3)	Alkalinity @25C (pp, total), CO3,HCO3,OH	Ammonia-N (Total)	# of Bottles	Comments
1	Site 2S	Tenas Four Creek	07/05	1300	GW	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	12	Groundwater
2	Site 2SW	TenasFour Creek	07/05	1300	SW	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	12	Surface Water
3	Site 4 upper S	Tenas Four Creek	07/07	1100	GW	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	12	Groundwater
4	Site 4 upper SW	TenasFour Creek	07/06	1730	SW	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	12	Surface Water
5	Site 4 upperD	Tenas FourCreek	07/07	1100	GW	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	3	1/2 1L Gen chem, 250 mL Gen chem FMetals
6	site5S	TenasFour Creek	07/07	1800	GW	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	12	
7	Site5SW	TenasFour Creek	07/07	1600	SW	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	12	
8	T95R-64	Tenas Four Creek	07/06	1100	GW	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	12	
9		TRIP BLANK	07/09	1830	W	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	12	
10	DUP-A	TenasFour Creek	07/08	1100	GW	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	12	

MVAN-2024-07-791

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Lab Use Only: Time Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
NICOLE ANASIS	2024/07/10	1:30	ALFRED NGAI	2024/07/16	09:00		☐	see ACTR	☐ Yes ☑ No N/A CS

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COC-TERMS-AND-CONDITIONS.
* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

White: Bureau Veritas Yellow: Client

Bureau Veritas Canada (2019) Inc.

C453348
2024/07/16 09:00

Bureau Veritas
4606 Canada Way, Burnaby, British Columbia Canada V5G 1K5 Tel:(604) 734 7276 Toll-free:800-563-6266 Fax:(604) 731 2386 www.bvna.com

Chain Of Custody Record

INVOICE TO:		Report Information		Project Information		Laboratory Use Only	
Company Name	#9888 Palmer Environmental Consulting Group (PEC	Company Name		Quotation #	C40429	Bureau Veritas Job #	Bottle Order #:
Contact Name	Nathalie Brandebourger	Contact Name	Nathalie Brandebourger	P.O. #			726282
Address	#630 – 470 Granville Street	Address		Project #	1905903 Tenas 2024	Chain Of Custody Record	Project Manager
	Vancouver BC V6C 1V5			Project Name		C#726282-02-02	Nahed Amer
Phone	(604) 629-9075 Fax:	Phone	Fax:	Site #			
Email	nathalie.brandebourger@pecg.ca	Email	nathalie.brandebourger@pecg.ca	Sampled By	NICOLE ANASIS		

Regulatory Criteria: ☐ CSR ☐ CCME ☐ BC Water Quality ☐ Other

Special Instructions

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

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(will be applied if Rush TAT is not specified):
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Job Specific Rush TAT (If applies to entire submission)
1 DAY ☐ 2 Day ☐ 3 Day ☐ Date Required: ☐
Rush Confirmation Number: *(call lab for #)*

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

	Sample Barcode Label	Sample (Location) Identification	Date Sampled (MM/dd)	Time Sampled	Matrix	Metals Field Filtered ? (Y / N)	Nitrogen - Nitrate (as N)	Total TKN in Water	Orthophosphate by Automated Analyzer	Total Phosphorus	Chloride/Sulphate by Auto Colourimetry	Fluoride	Carbon (Total Organic)	Carbon (DOC)	CSR Dissolved Metals in Water with CV Hg	CSR Total Metals in Water with CV Hg	# of Bottles	Comments
1	Site 2S	Tenas Four Creek	07/05	1300	GW	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	12	Groundwater
2	Site 2SW	Tenas Four Creek	07/05	1300	SW	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	12	Surface Water
3	Site 4 upper S	Tenas Four Creek	07/07	1100	GW	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	12	Groundwater
4	Site 4 upper SW	Tenas Four Creek	07/06	1730	SW	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	12	Surface Water
5	Site 4 upper D	Tenas Four Creek	07/07	1100	GW	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	3	1/2 L Gen Chem, 250 Gen Chem F. Metals
6	Site 5S	Tenas Four Creek	07/07	1800	GW	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	12	
7	Site 5SW	Tenas Four Creek	07/07	1600	SW	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	12	
8	T95R-64	Tenas Four Creek	07/06	1100	GW	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	12	
9		TRIP BLANK	07/09	1830	W		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	12	
10	DUP-A	Tenas Four Creek	07/06	1100	GW	Y	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	12	

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Lab Use Only: Time Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
NICOLE ANASIS / VBT	2024/07/10	7:30	ALFRED NGAI	2024/07/16	09:00		☐	see ACTR	☐ Yes ☑ No N/A

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COC-TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

White: Bureau Veritas Yellow: Client

C453348
2024/07/16 09:00

Bureau Veritas
4606 Canada Way, Burnaby, British Columbia Canada V5G 1K5 Tel:(604) 734 7276 Toll-free:800-563-6266 Fax:(604) 731 2386 www.bvna.com

Chain Of Custody Record

INVOICE TO:		Report Information		Project Information		Laboratory Use Only	
Company Name	#9888 Palmer Environmental Consulting Group (PEC	Company Name		Quotation #	C40429	Bureau Veritas Job #	Bottle Order #:
Contact Name	Nathalie Brandebourger	Contact Name	Nathalie Brandebourger	P.O. #			728282
Address	#630 – 470 Granville Street Vancouver BC V6C 1V5	Address		Project #	1905903 Tenas 2024	Chain Of Custody Record	Project Manager
Phone	(604) 629-9075 Fax:	Phone	Fax:	Project Name		C#728282-02-03	Nahed Amer
Email	nathalie.brandebourger@pecg.ca	Email	nathalie.brandebourger@pecg.ca	Site #			
				Sampled By	NICOLE ANASIS		

Regulatory Criteria: ☐ CSR ☐ CCME ☐ BC Water Quality ☐ Other _____

Special Instructions:

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

Regular (Standard) TAT: ☑
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
1 DAY ☐ 2 Day ☐ 3 Day ☐ Date Required: _____ ☐
Rush Confirmation Number: _____ *(call lab for #)*

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

	Sample Barcode Label	Sample (Location) Identification	Date Sampled (yy/mm/dd)	Time Sampled	Matrix	Metals Field Filtered ? (Y / N)	Cyanide (total)	Phenols (4-AAP)	# of Bottles	Comments
1	Site 2S	Tenas Four Creek	07/05	1300	GW	Y	✓	✓	12	Groundwater
2	Site 2SW	Tenas Four Creek	07/05	1300	SW	Y	✓	✓	12	Surface water
3	Site 4 upper S	Tenas Four Creek	07/07	1100	GW	Y	✓	✓	12	Groundwater
4	Site 4 upper SW	Tenas Four Creek	07/06	1730	SW	Y	✓	✓	12	Surface water
5	site 4 upper D	Tenas Four Creek	07/07	1100	GW	Y	NO BOTTLE		3	½ 1L Gen Chem, 250mL Gen Chem F. Metals
6	site 5S	Tenas Four Creek	07/07	1800	GW	Y	✓	✓	12	
7	site 5 SW	Tenas Four Creek	07/07	1600	SW	Y	✓	✓	12	
8	T95R-64	Tenas Four Creek	07/06	1100	GW	Y	✓	✓	12	
9		TRIP BLANK	07/09	1830	W	Y	✓	✓	12	
10	DUP-A	Tenas Four Creek	07/06	1100	GW	Y	✓	✓	12	

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Lab Use Only: Time Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
NICOLE ANASIS	2024/07/11	7:30	ALFRED NGAI	2024/07/16	09:00		☐	see ACTR	☐ Yes ☑ No NC

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COC-TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

White: Bureau Veritas Yellow: Client

Bureau Veritas Canada (2019) Inc.

Appendix D Summary of 2024 Field Conductivity Measurements

Four Creek Watershed

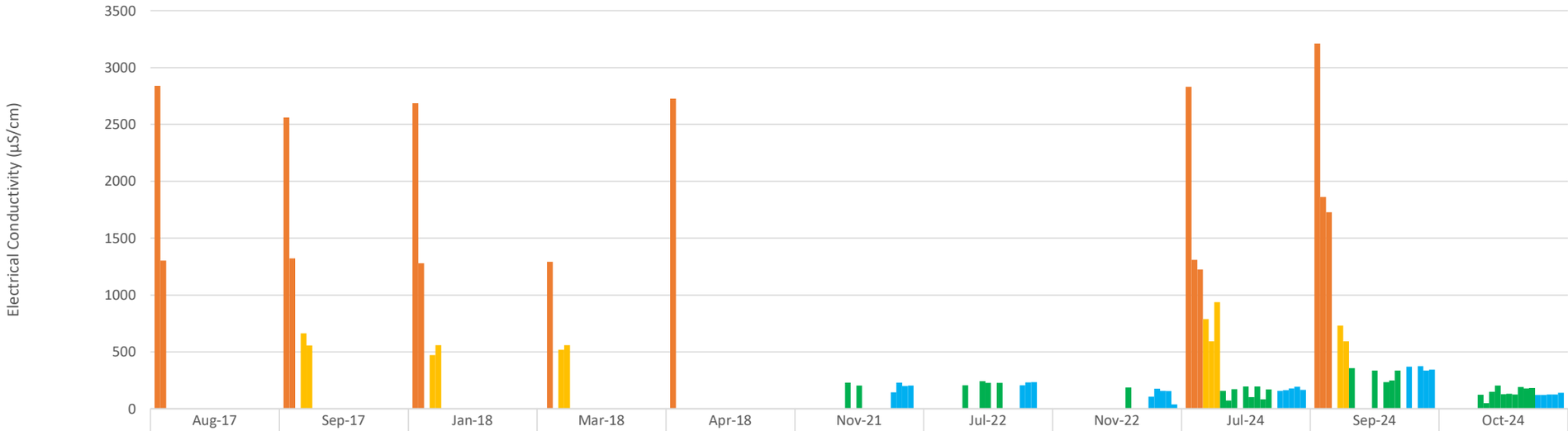
Groundwater Surface Water Interaction Investigation
and Water Balance Model Development

Telkwa Coal Limited

SLR Project No.: 201.V24219.00000

September 5, 2025

Tenas - Four Creek Watershed Conductivity Measurements



	Aug-17	Sep-17	Jan-18	Mar-18	Apr-18	Nov-21	Jul-22	Nov-22	Jul-24	Sep-24	Oct-24
T95R-40	2840	2560	2687		2726				2830	3212	
T95R-64	1303	1322	1279	1293					1308	1862	
T18-01D									1225	1727	
TOB96-01-05		663	472	518					788		
TOB96-02-06		557	558	559					594	731	
T19-18S									938	594	
Site 2 S GW							206		156	357	123
Site 2 D GW									72		49
Site 3 S GW						229			173		148
Site 3 D GW							242				204
Site 4 S GW						204	227		195	335	128
Site 4 D GW									102		131
Site 4 Upper S GW							227	188	196	235	125
Site 4 Upper D GW									82	250	191
Site 5 S GW									171	338	178
Site 5 D GW											181
Site 2 SW						146	206	106	158	369	123
Site 3 SW						230	232	176	165		121
Site 4 SW						200	235	157	179	375	125
Site 4 Upper SW						204		155	192	335	125
Site 5 SW								39.0	165	344.1	141

Appendix E Piper Diagrams

Four Creek Watershed

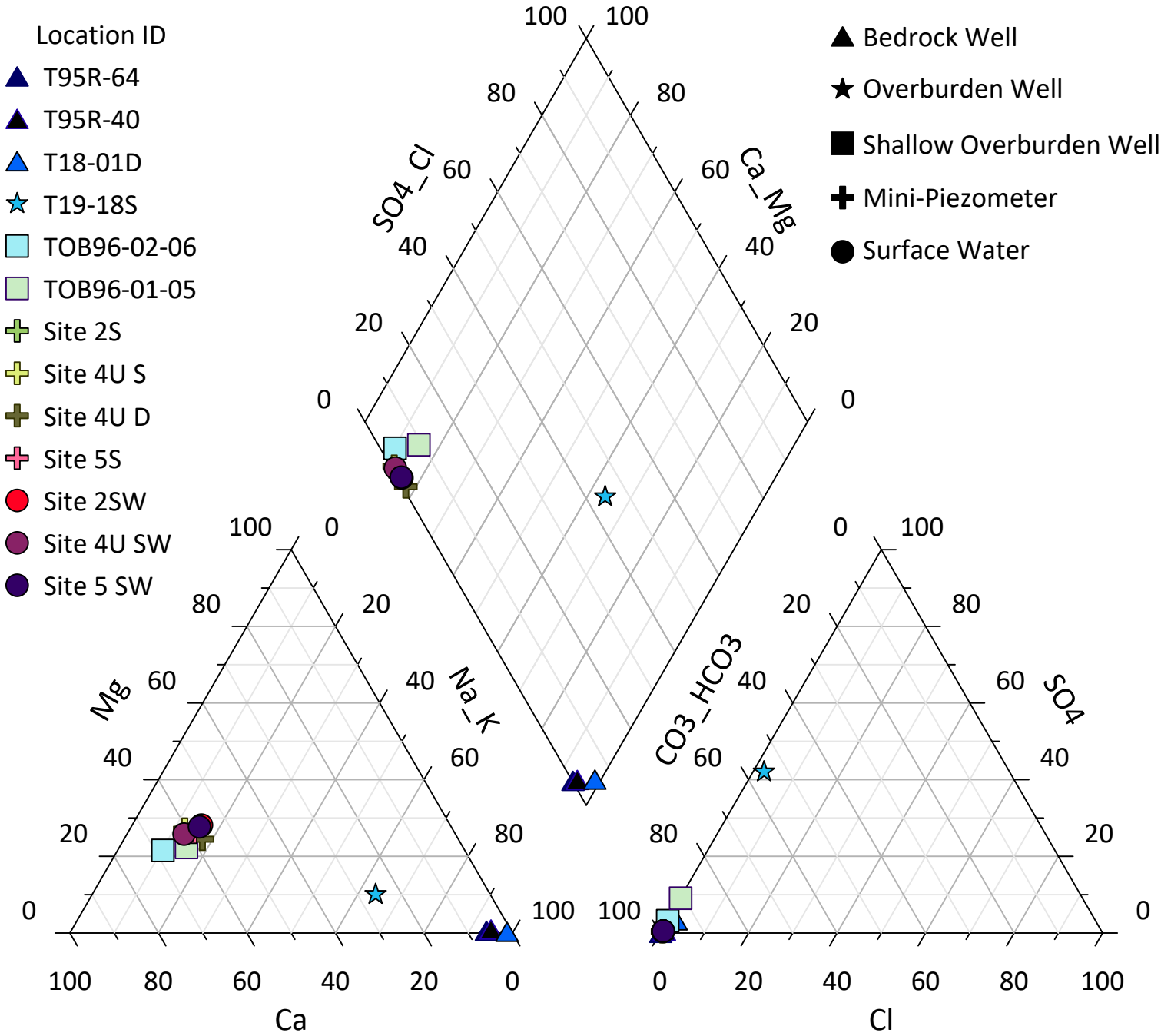
Groundwater Surface Water Interaction Investigation
and Water Balance Model Development

Telkwa Coal Limited

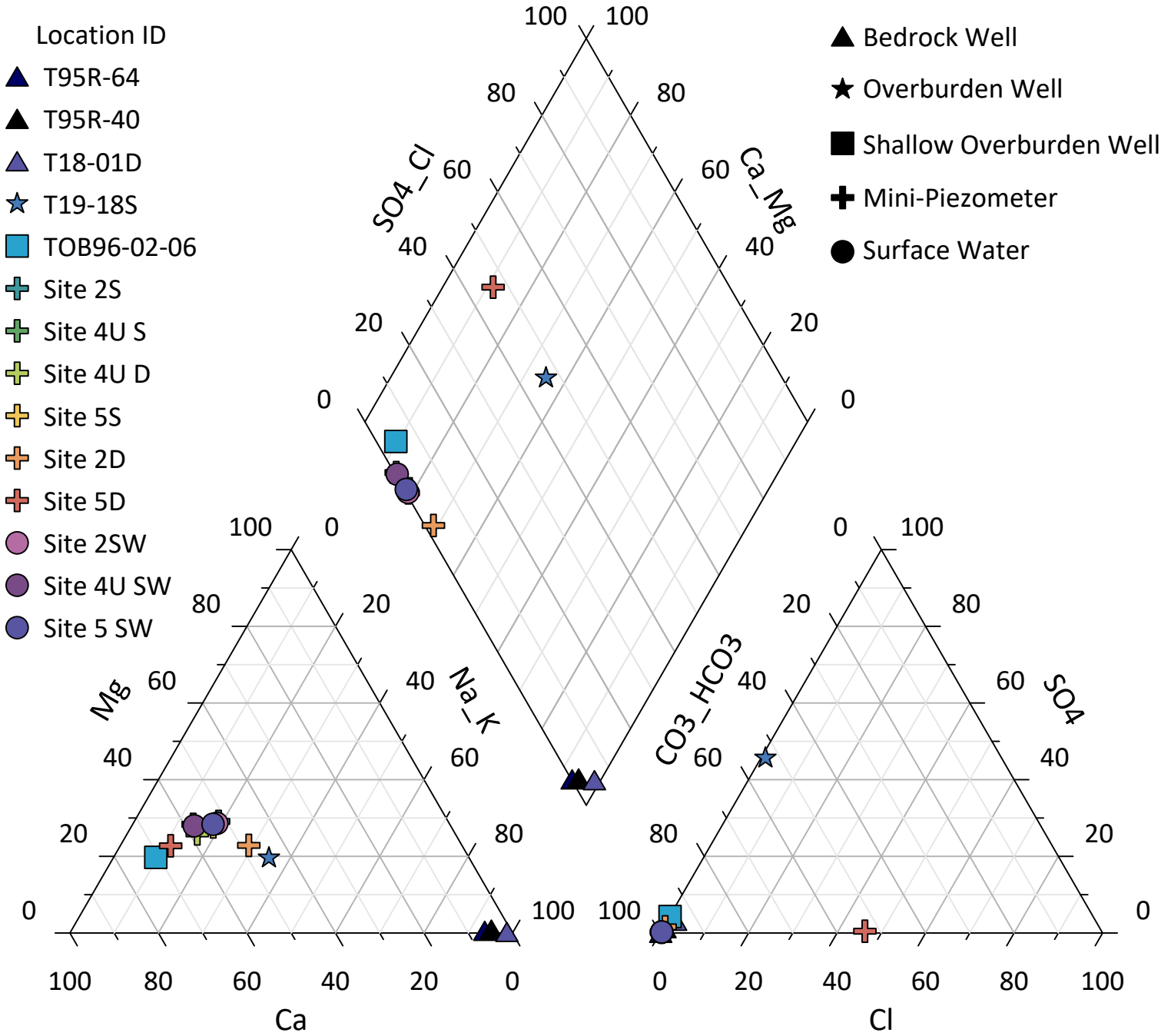
SLR Project No.: 201.V24219.00000

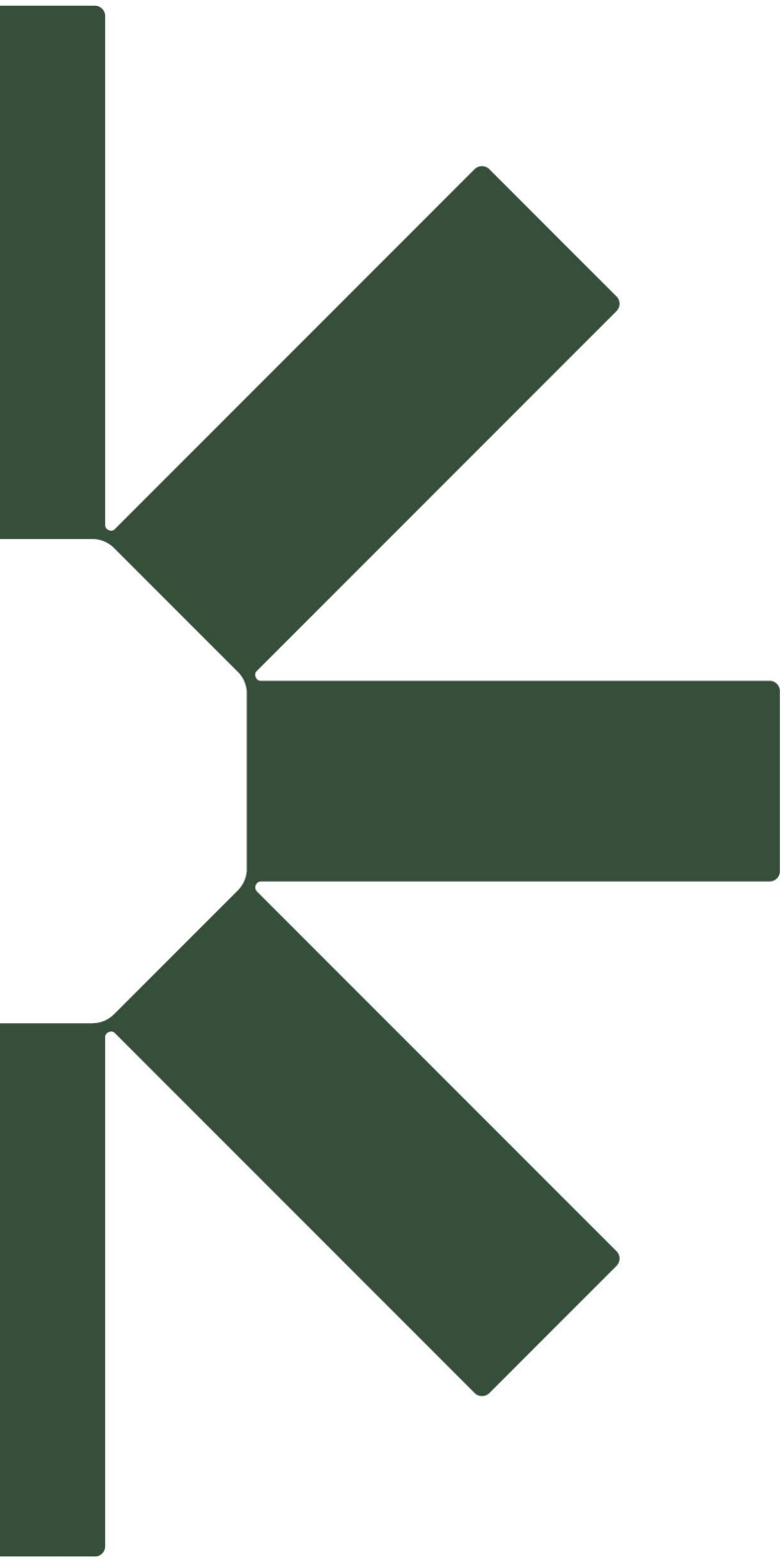
September 5, 2025

July 2024 Monitoring Wells and Mini Piezometers



September 2024 Monitoring Wells and Mini Piezometers





Making Sustainability Happen

Technical Memorandum

To:	Dan Farmer	**From:**	Kirby Ottenbreit/Mandy Gregg
Company:	Telkwa Mining Limited		**SLR Consulting (Canada) Ltd.**
cc:	Jessy Chaplin, Telkwa Mining Limited	**Date:**	November 27, 2025
	Rick Palmer, Lori Hooper, SLR Consulting (Canada) Ltd.	**Project No.**	201.089602.00001
		Revision	0

RE: Response to Comments from Ministry of Water, Land, and Resource Stewardship
Tenas Project Environmental Assessment Application

Introduction

Telkwa Mining Limited (Telkwa Mining) has requested the services of SLR Consulting (Canada) Ltd. (SLR) to help respond to Information Requests (IRs) put forward by the Ministry of Water, Land, and Resource Stewardship (WLRS) as part of the review of the Tenas Project Environmental Assessment Application (the Project) and subsequent studies designed to better understand the ecological baseline conditions in the vicinity of the proposed mine. These IRs pertained to fish and fish habitat in Tenas, Goathorn, and Four Creeks – the primary watersheds potentially affected by the Project.

The purpose of this memorandum is to provide Telkwa Mining with recommended responses from SLR's Qualified Professionals in fisheries and aquatic sciences to the WLRS comments and questions and to complement the table of responses provided in the accompanying response tracking table.

Responses to Information Requests

Comments 1 and 2

1 Spring spawner surveys only occurred on 2 days in 2023, even in perfect conditions it is possible spawning may have been missed. Ideally, habitat assessments would have occurred before freshet, then high quality spawning habitat would be revisited to determine the presence of redds after freshet. Surveys could also be conducted weekly or every 10 days within the potential spawning window. Please conduct surveys regularly throughout the spawning season to determine the use of spawning habitat by rainbow trout/steelhead.

2 Spring spawner surveys only occurred ~100m up and downstream of several sites, with that limited extent it is likely that spawning habitat use would be missed. It is noted that these sites are previously established water quality sites. Was habitat quality considered when selecting these sites? If not, please conduct habitat assessments to identify spawning habitat, then survey those areas for spawning activity.

Response

Comment acknowledged. Telkwa Mining kindly refers the reviewer to the Application Information Requirements (AIR) – Tenas Project January 2022 document, page77, which describes what the Tenas Project was required to submit with regards to fish and fish habitat. Telkwa Mining responses in 2022 satisfied that request. The May 18, 2023 IR added the following request (reviewer, Chris Schell):

Fish and Fish Habitat IR Request (May 18, 2023) - Conduct ground-based surveys for spawning activity or evidence of spawning activity of steelhead/rainbow trout, with a focus on smaller creeks that overlap the local study area. The objective is to identify any habitat use in the project area by adult steelhead, including migration and spawning. The spatial extent of surveys should extend from a stream's confluence with the Telkwa River or Goathorn Creek upstream to the end of fish use. Methods to employ can include spawning surveys, redd surveys, fry emergence surveys, DNA, biometrics, habitat suitability assessments, and any other methods deemed appropriate and informative.

In response to requests from First Nations and the EAO Technical Advisory Committee in 2022, Telkwa Mining committed to conducting spring spawning surveys in 2023 and additional fall spawning surveys in 2024 and 2025 for anadromous salmon species and Dolly Varden. Spring spawning surveys were attempted in 2023, and this assessment method was not continued after the 2023 program as it was found that in Goathorn and Tenas Creeks, large flashy streams, spring spawning surveys are highly susceptible to issues associated with high flows, water clarity, and safe access concerns during spring freshet.

The additional information that is being collected and collated from further spring spawning surveys and fall spawning surveys conducted in 2024 and 2025 do not change the results of the Tenas Project effects assessment or alter the "not significant" effects on fisheries of the Tenas Project.

Results of the fish and fish habitat surveys completed in 2024 and 2025 will be summarized for the permitting process.

Comment 3

The timing of the summer juvenile survey (August) was such that outmigrating smolts would have already left the system (steelhead smolts outmigrate in spring/early summer). Please conduct juvenile surveys when steelhead smolts would still be in the system.

Response

As requested by First Nations and the EAO Technical Advisory Committee, Telkwa Mining committed to and has been conducting fish and fish habitat studies in 2024 and 2025 in addition to those required for the EA Application process, aimed at attempting to differentiate between rainbow trout and steelhead in Tenas and Goathorn Creeks.

Qualified Professionals have confirmed that the abundance and distribution of steelhead and/or rainbow trout in Project Area watercourses does not alter the assessment methodology nor the determination of the "not significant" effects on fisheries as presented in the EAC Application for the Tenas Project.

Additional information on fish and fish habitats, collected in 2024 and 2025, is being collected and collated. Report results will be summarized during the provincial permitting process.



Comment 4

Neither morphometric nor visual assessments are widely accepted methods to differentiate rainbow trout and steelhead juveniles. Please acknowledge the uncertainty of these methods.

Response

Acknowledged. The Tenas Project Environmental Assessment Certificate (EAC) Application Section 4, Chapter 6, Fish and Fish Habitat Valued Component 4.1.3 describes the Baseline Studies carried out for the Tenas Project. Methodology for all studies is described in these reports. The uncertainties of visual and morphometric studies are acknowledged and discussed in Section 4 as well.

Statement of Limitations

This report has been prepared by SLR Consulting (Canada) Ltd. (SLR) for Telkwa Mining Limited (Client) in accordance with the scope of work and all other terms and conditions of the agreement between such parties. SLR acknowledges and agrees that the Client may provide this report to government agencies, interest holders, and/or Indigenous communities as part of project planning or regulatory approval processes. Copying or distribution of this report, in whole or in part, for any other purpose other than as aforementioned is not permitted without the prior written consent of SLR.

Any findings, conclusions, recommendations, or designs provided in this report are based on conditions and criteria that existed at the time work was completed and the assumptions and qualifications set forth herein.

This report may contain data or information provided by third party sources on which SLR is entitled to rely without verification and SLR does not warranty the accuracy of any such data or information.

Nothing in this report constitutes a legal opinion nor does SLR make any representation as to compliance with any laws, rules, regulations, or policies established by federal, provincial territorial, or local government bodies, other than as specifically set forth in this report. Revisions to legislative or regulatory standards referred to in this report may be expected over time and, as a result, modifications to the findings, conclusions, or recommendations may be necessary.

Closure

If you have any questions or concerns regarding this memo, please contact a team member below.

Regards,

SLR Consulting (Canada) Ltd.





Kirby Ottenbreit
Principal Fisheries Scientist

Mandy Gregg
Principal, Regulatory Approvals and Permitting Lead; Environment & Social Impact Assessment

Attachments Table of Responses

Proposed Tenas Project Fish and Fish Habitat IR Response Technical Advisory Subcommittee Comments

Comment number	Agency	Date	Fish IR Response Document Name	Section of Document	Comment	(SLR) Tenas Project Response (November 26 2025)
1	WLRS	29-Oct-25	Telkwa Mining's Response to Fish and Fish Habitat Information Requests dated 6 June 2023, for the Tenas Project	Appendix A, Section 2.2	Spring spawner surveys only occurred on 2 days in 2023, even in perfect conditions it's possible spawning may have been missed. Ideally, habitat assessments would have occurred before freshet, then high quality spawning habitat would be revisited to determine the presence of redds after freshet. Surveys could also be conducted weekly or every 10 days within the potential spawning window. Please conduct surveys regularly throughout the spawning season to determine the use of spawning habitat by rainbow trout/steelhead.	Comment acknowledged. Telkwa Mining kindly refers the reviewer to the Application Information Requirements (AIR) – Tenas Project January 2022 document, page77, which describes what the Tenas Project was required to submit with regards to fish and fish habitat. Telkwa Mining responses in 2022 satisfied that request. The May 18, 2023 IR added the following request (reviewer, Chris Schell): Fish and Fish Habitat IR Request (May 18, 2023) - Conduct ground-based surveys for spawning activity or evidence of spawning activity of steelhead/rainbow trout, with a focus on smaller creeks that overlap the local study area. The objective is to identify any habitat use in the project area by adult steelhead, including migration and spawning. The spatial extent of surveys should extend from a stream's confluence with the Telkwa River or Goathorn Creek upstream to the end of fish use. Methods to employ can include spawning surveys, redd surveys, fry emergence surveys, DNA, biometrics, habitat suitability assessments, and any other methods deemed appropriate and informative. In response to requests from First Nations and the EAO Technical Advisory Committee in 2022, Telkwa Mining committed to conducting spring spawning surveys in 2023 and additional fall spawning surveys in 2024 and 2025 for anadromous salmon species and Dolly Varden. Spring spawning surveys were attempted in 2023, and this assessment method was not continued after the 2023 program as it was found that in Goathorn and Tenas Creeks, large flashy streams, spring spawning surveys are highly susceptible to issues associated with high flows, water clarity, and safe access concerns during spring freshet. The additional information that is being collected and collated from further spring spawning surveys and fall spawning surveys conducted in 2024 and 2025 do not change the results of the Tenas Project effects assessment or alter the "not significant" effects on fisheries of the Tenas Project. Results of the fish and fish habitat surveys completed in 2024 and 2025 will be summarized for the permitting process.
2	WLRS	29-Oct-25	Telkwa Mining's Response to Fish and Fish Habitat Information Requests dated 6 June 2023, for the Tenas Project	Appendix A, Section 2.2	Spring spawner surveys only occurred ~100m up and downstream of several sites, with that limited extent it is likely that spawning habitat use would be missed. It is noted that these sites are previously established water quality sites. Was habitat quality considered when selecting these sites? If not, please conduct habitat assessments to identify spawning habitat, then survey those areas for spawning activity.	
3	WLRS	29-Oct-25	Telkwa Mining's Response to Fish and Fish Habitat Information Requests dated 6 June 2023, for the Tenas Project	Appendix A, Section 2.3	The timing of the summer juvenile survey (August) was such that outmigrating smolts would have already left the system (steelhead smolts outmigrate in spring/early summer). Please conduct juveline surveys when steelhead smolts would still be in the system.	As requested by First Nations and the EAO Technical Advisory Committee, Telkwa Mining committed to and has been conducting fish and fish habitat studies in 2024 and 2025 in addition to those required for the EA Application process , aimed at attempting to differentiate between rainbow trout and steelhead in Tenas and Goathorn Creeks. Qualified Professionals have confirmed that the abundance and distribution of steelhead and/or rainbow trout in Project Area watercourses does not alter the assessment methodology nor the determination of the "not significant" effects on fisheries as presented in the EAC Application for the Tenas Project. Additional information on fish and fish habitats, collected in 2024 and 2025, is being collected and collated. Report results will be summarized during the provincial permitting process.
4	WLRS	29-Oct-25	Telkwa Mining's Response to Fish and Fish Habitat Information Requests dated 6 June 2023, for the Tenas Project	Appendix A, Section 2.4, 2.5	Neither morphometric nor visual assessments are widely accepted methods to differentiate rainbow trout and steelhead juveniles. Please acknowledge the uncertainty of these methods.	Acknowledged. The Tenas Project Environmental Assessment Certificate (EAC) Application Section 4, Chapter 6, Fish and Fish Habitat Valued Component 4.1.3 describes the Baseline Studies carried out for the Tenas Project. Methodology for all studies is described in these reports. The uncertainties of visual and morphometric studies are acknowledged and discussed in Section 4 as well.