



# Tenas Project

## Public Consultation Report #3

**September 2022**

VERSION 1.0

Submitted to:	BC Environmental Assessment Office
Pursuant to:	<i>Environmental Assessment Act</i> , S.B.C. 2002, c.43
Submitted by:	Telkwa Coal Limited Suite 1410 – 409 Granville Street Vancouver, BC V6C 1T2

# Tenas Project

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## ABBREVIATIONS AND ACRONYMS

Abbreviation or Acronym	Long Form of Abbreviation or Acronym
AIR	Application Information Requirements
BC	British Columbia
BC EAO	British Columbia Environmental Assessment Office
EA	environmental assessment
EAA	<i>Environmental Assessment Act</i> , SBC 2002, c 43
EAC	Environmental Assessment Certificate
EPIC	Electronic Project Information Centre
LOM	life-of-mine
Project	Tenas Project
RDBN	Regional District of Bulkley-Nechako
TCL	Telkwa Coal Limited

## UNITS OF MEASURE

Abbreviation or Acronym	Long Form of Abbreviation or Acronym
%	percent
km	kilometre
km <sup>2</sup>	square kilometre
m <sup>3</sup>	cubic metres

## 1. INTRODUCTION

Telkwa Coal Limited (TCL) is proposing to develop the Tenas Project (Project), which is a metallurgical surface coal mine in northwestern British Columbia (BC), Canada that will recover metallurgical coal for export to the seaborne market. The Project will produce metallurgical coal at an annual production rate of between 775,000 and 825,000 metric tonnes of processed coal with a maximum daily production rate of 2,500 metric tonnes of processed coal per day. The life-of-mine (LOM) is approximately 26.5 years, including the Construction, Operation, and Decommissioning and Reclamation phases.

The Project is located approximately twenty-five (25) kilometres (km) south of the Town of Smithers and seven (7) km southwest of the Village of Telkwa. The Project will be constructed on provincial Crown land, and private land held by TCL. The Project is located outside of the municipal boundary of Telkwa and within Electoral Area A of the Regional District of Bulkley-Nechako (RDBN). The Project is within Wet'suwet'en traditional territory, and TCL acknowledges and respects the unceded rights, title, interests, culture, and aspirations of the Wet'suwet'en to 22,000 square kilometres (km<sup>2</sup>) of traditional territory. Separate Indigenous Consultation and Engagement Reports have been prepared that summarize TCL's consultation and engagement efforts with the Office of the Wet'suwet'en, and other Indigenous groups, in accordance with the approved Indigenous Consultation and Engagement Plan.

The Project is undergoing an Environmental Assessment (EA) under the BC *Environmental Assessment Act*, SBC 2002, c 43 (Government of British Columbia [GovBC] 2002a) (EAA). The Project was issued a Section 11 Order by the BC Environmental Assessment Office (BC EAO) on June 25, 2019 which is available on the BC EAO Electronic Project Information Centre (EPIC) website. On February 24, 2022, TCL submitted the Environmental Assessment Certificate (EAC) Application for screening, and on April 27, 2022, the BC EAO accepted a revised version of the EAC Application that included edits made by TCL in response to screening comments. The formal 180-day Application Review Stage (Application Review) started on May 11, 2022.

Public Consultation Report #3 has been prepared pursuant to the approved Public Consultation Plan (TCL 2019), which is available on the BC EAO EPIC ([https://projects.eao.gov.bc.ca/api/public/document/5d7bf27126583700218b983d/download/190913\\_TenasMine\\_PublicConsultationPlan\\_combined.pdf](https://projects.eao.gov.bc.ca/api/public/document/5d7bf27126583700218b983d/download/190913_TenasMine_PublicConsultationPlan_combined.pdf)). This report includes engagement activities with the public, including community groups and stakeholders, during the Application Review Phase, specifically February 23, 2022 to August 31, 2022.

## 2. PUBLIC CONSULTATION PLAN

TCL is committed to maintaining communication with the public and local stakeholders throughout the EA and permitting processes, as well as through Construction, Operation, Decommissioning and Reclamation, and Post-closure phases.

The Public Consultation Plan was prepared and submitted to the BC EAO to meet the requirements for consultation as prescribed in the Section 11 Order, a procedural order issued by the BC EAO in accordance with the Public Consultation Policy Regulation, B.C. Reg. 373/2002 (GovBC 2002b), and to allow for the public and local communities to become informed about and provide input on the Project. The Public Consultation Plan was approved in September 2019 and is publicly available on the BC EAO EPIC website.

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The purpose of the Public Consultation Plan is to outline and guide public consultation activities during the Pre-Application and Application Review phases. The Public Consultation Plan also provides the framework for the consultation activities described in this Public Consultation Report #3.

## 2.1 Identifying Interested Parties

Since February 2017, TCL has engaged with community members and parties interested or potentially affected by the Project, either directly or indirectly. These parties were identified based on the following criteria:

- ▶ Input from local Project consultants, local and regional government officials, community interest groups, and individual residents of the Bulkley Valley;
- ▶ Interested parties previously consulted on similar Projects in the area; and
- ▶ Information gathered from local meetings, open houses, and information sessions.

The identified parties include: local and regional government; residents (e.g., residents of local communities); recreation groups (e.g., hikers, campers, hunters, horseback riders, and anglers); community interest groups; and those with commercial interests (e.g., forestry, trappers, and guide outfitters). A list of interested parties identified to date is provided in **Appendix A**. The list is not intended to be an exhaustive record of all potential interested parties. It is intended to provide an understanding of the groups that are in proximity to the proposed Project, may have an interest in the Project, and may have been previously consulted on similar projects in the area.

As the Project progresses, additional parties may be identified. In addition, TCL will ensure that the public is aware of the Project through regular consultation activities and opportunities for feedback (e.g., social media and advertisements in local newspapers).

TCL is committed to creating and maintaining opportunities for constructive dialogue and relationships with Indigenous groups to develop the Project responsibly. TCL is focused on working with Indigenous groups throughout all phases of the Project, from Project planning and development through the Post-closure Phase. TCL will report on engagement activities with Indigenous groups separately; however, there is potential overlap between community and Indigenous engagement (i.e., there may be Indigenous attendance at open houses and other community and industry events TCL hosts or participates in).

## 2.2 Purpose of Public Consultation

TCL's primary objective is to effectively communicate information about the Project and involve those who may be affected by or have an interest in the Project. In this spirit, TCL is committed to addressing issues and concerns of the local community and stakeholders. TCL is committed to creating and maintaining opportunities for constructive dialogue and relationships with local and regional stakeholders to develop the Project responsibly. As part of the Project's consultation, TCL is focused on engaging with the community throughout the Project, including Project development, to ensure feedback from the public is considered when planning the Project.

TCL's approved Public Consultation Plan was designed to achieve the following:

- ▶ Engage in early, frequent, open, and candid communication to build strong relationships with interested parties, particularly those who may be potentially affected by the Project;
- ▶ Communicate information in a timely, consistent manner to local community members, regulators, and stakeholders throughout the Project to build awareness of the Project, including potential effects and proposed mitigation measures;

- ▶ Identify and understand Project issues and concerns, as well as ensuring responsive engagement regarding stakeholder interests;
- ▶ Create and facilitate opportunities for the community and stakeholders to provide meaningful input and feedback on the Project;
- ▶ Respond to comments received on the Project and documents related to the EA process using tracking tables and other documentation methods;
- ▶ Foster strong, collaborative, and long-term partnerships with regulators, community groups, and other stakeholders; and
- ▶ Gather input and feedback on the Project from the local community and stakeholders and ensure it is considered during Project planning.

## 2.3 Purpose of the Public Consultation Report

Pursuant to the Section 11 Order, TCL is required to provide the BC EAO with a Public Consultation Report that is consistent with the approved Public Consultation Plan on file for the Project. The Section 11 Order states that TCL must submit a Public Consultation Report to the BC EAO at the following times:

- ▶ Within 60 days after the close of a public comment period;
- ▶ At the time of submission of the EAC Application; and
- ▶ At any other time specified by the Project Assessment Lead.

The purpose of Public Consultation Report #3 is to document TCL's consultation efforts from February 23, 2022, through to August 31, 2022 (day 112 of Application Review) and encompasses the 45-day Public Comment Period on the EAC Application which ran from May 19, 2022, through July 3, 2022.

This report includes:

- ▶ A description of the results and the activities outlined in the Public Consultation Plan;
- ▶ A summary of TCL's public consultation activities during the Application Review Phase, including comments, concerns, and questions received from the public within the scope of the EA and how the concerns were addressed;
- ▶ Copies of advertisements or public communications used during the Application Review Phase; and
- ▶ Proposed next steps for public consultation activities.

## 3. PHASES OF PUBLIC CONSULTATION

The objectives of TCL's public consultation program are to provide opportunities for open and informed discussions as well as to gather meaningful input regarding the Project. In this spirit, TCL is committed to addressing issues and concerns of the local community and stakeholders. TCL is committed to creating and maintaining opportunities for constructive dialogue and relationships with local and regional stakeholders to develop the Project responsibly. As part of the Project's consultation, TCL is focused on engaging with the community throughout the Project, including Project development, to ensure feedback from the public is considered when planning the Project.

An overview of TCL's phased approach to public consultation is presented in **Table 1**, and details are provided in the Public Consultation Plan.

**Table 1: Overview of Telkwa Coal Limited's Phased Approach to Public Consultation and Engagement**

<b>Phase</b>	<b>Overview</b>	<b>Timing/Status</b>
Early Engagement Phase	<ul style="list-style-type: none"> <li>▪ The primary activities that occurred in the Early Engagement Phase are:               <ul style="list-style-type: none"> <li>○ Early General Engagement Activities</li> <li>○ Early Engagement Meetings</li> <li>○ Open House</li> <li>○ Tenas Mine Neighbours Group Meetings</li> <li>○ Information Program</li> </ul> </li> </ul>	Early 2017 to November 2018 <b>Complete</b>
Pre-Application Phase	<ul style="list-style-type: none"> <li>▪ The primary activities that occurred in the Pre-Application Phase are:               <ul style="list-style-type: none"> <li>○ Ongoing General Engagement Activities</li> <li>○ Open Houses</li> <li>○ Tenas Mine Neighbours Group Meetings</li> <li>○ Information Program</li> <li>○ Public Comment Period on the draft Application Information Requirements (AIR)                   <ul style="list-style-type: none"> <li>▪ Document Availability</li> <li>▪ Response to Comments</li> </ul> </li> <li>○ Public Consultation Report(s)</li> </ul> </li> </ul>	November 2018 – late February 2022 <b>Complete</b>
Application Review Phase	<ul style="list-style-type: none"> <li>▪ The primary activities to occur in the Application Review Phase are similar to those carried out during the Pre-Application Phase and include:               <ul style="list-style-type: none"> <li>○ General Ongoing Engagement Activities</li> <li>○ Open Houses</li> <li>○ Tenas Mine Neighbours Group Meetings</li> <li>○ Information Program</li> <li>○ Public Comment Periods                   <ul style="list-style-type: none"> <li>▪ Document Availability</li> <li>▪ Response to Comments</li> </ul> </li> <li>○ Public Consultation Report(s)</li> </ul> </li> </ul>	Late February 2022 – ongoing <b>Ongoing</b>
Post-EAC Engagement Phase	<ul style="list-style-type: none"> <li>▪ TCL is committed to creating and maintaining opportunities for constructive dialogue and relationships with the local community and other interested parties over the course of the Project. Should the Project be successful in receiving an Environmental Assessment Certificate (EAC), consultation and engagement post-EAC and prior to the Construction Phase of the Project and during the Operation Phase will include:               <ul style="list-style-type: none"> <li>○ Open-Door Policy</li> <li>○ General Engagement Meetings and Presentations</li> <li>○ Company Website</li> <li>○ Social Media</li> <li>○ Site Tours</li> <li>○ Participation at Community and Industry Events</li> </ul> </li> </ul>	Post-decision <b>Future phase</b>

During the Application Review Phase, TCL's public and stakeholder consultation and engagement activities focused on providing information regarding the Project and the EAC Application as well as answering questions regarding Project-related effects.

Key activities related to public and stakeholder consultation and engagement are summarized in the following three sections:

- ▶ Section 3.1 presents information related to TCL's ongoing general engagement activities;
- ▶ Section 3.2 presents information related to community group information sessions hosted by TCL; and
- ▶ Section 3.3 presents information related to EAO-led public engagement activities.

### 3.1 Ongoing General Engagement Activities

The following summarizes ongoing general engagement activities that occurred during the reporting period. Many of these activities have been ongoing since the Early Engagement Phase:

- ▶ **Open-Door Policy** – TCL maintains an open-door policy at our local Telkwa office. Community members are encouraged to stop by the office to speak with team members, as well as view open house poster boards that are on display and other information materials, including electronic and print copies of the EAC Application;
- ▶ **Meetings and Presentations** – TCL is committed to continuous engagement with interested parties via in-person meetings, telephone calls, and emails to share Project information and ask Project-related questions;
- ▶ **Company Website** – Project updates and communication materials relevant to engagement are posted on the TCL website and is updated regularly as documents and Project information is available. The "Resources" page on the TCL website provides links to not only Project information such as the June 2022 open house poster boards, but also links to reports and memos available on the BC EAO's EPIC site, including the EAC Application;
- ▶ **Social Media** – TCL posts regularly to our Twitter, Facebook and LinkedIn accounts. Content includes Project information and updates, community events, communication, and resource materials. Community members can contact TCL directly with questions through the social media platforms. These messages often lead to a further exchange of information through email, phone calls, or face-to-face meetings;
- ▶ **Site Tours** – TCL continues to provide site tours for interested parties who wish to view key areas where site development will occur;
- ▶ **Participation at Community and Industry Events** – TCL participated in several local community and industry events, including the Rock Talks 2022, Mining Month Luncheon, Smithers Chamber Member Appreciation BBQ; Smithers Work BC 25<sup>th</sup> Anniversary Open House; and
- ▶ **Sponsorship** – TCL sponsored several local organizations and activities. The list below outlines all the community groups we supported during the reporting period:
  - Smithers Chamber of Commerce;
  - Smithers Exploration Group;
  - Kinsmen Telkwa;
  - Bulkley Valley Christian School;
  - Bulkley Valley Health Foundation;
  - Bulkley Valley Youth Sport Foundation;

- Bulkley Valley Youth Soccer; and
- Bulkley Valley Bowmen.

In March 2022, TCL's Community Liaison met with the Economic Development / Business Liaison Officer from the Village of Telkwa to discuss the Project. TCL provided a Project update, and housing, employment, and childcare challenges were discussed.

In March 2022, TCL's Community Liaison took three representatives from the Smithers Chamber of Commerce on a site tour. As a group, they drove to various locations that were accessible, and discussed Project components, as well as how the Project may affect housing, childcare, and employment. While the representatives knew a fair bit about the Project already, the site tour helped them visualise the scale of the Project. In May 2022, TCL's Community Liaison met with the new Telkwa Fire Chief and provided him with information about the Project and gave him a tour of the site.

In accordance with paragraph 15.3 of the Section 11 Order, TCL made electronic and print copies of the EAC Application available for public review for the duration of the public comment period (May 19 – July 3, 2022). TCL consulted with the venues where the EAC Application was made available to determine whether the full print or electronic copy of the EAC Application would be more accessible to community members. TCL provided full print copies of the EAC Application in binders to the Office of the Wet'suwet'en, Smithers Public Library, Houston Public Library, and Wet'suwet'en First Nation. Electronic versions of the EAC Application were provided to the Village of Telkwa, members of What Matters in Our Valley, Witset First Nation, and Wet'suwet'en First Nation.

In May 2022, TCL's Community Liaison had correspondence with the Skeena Watershed Conservation Coalition about the EAC Application submission and upcoming public comment period and BC EAO-led open house. Skeena Watershed Conservation Coalition requested a more user-friendly version of the EAC Application than is available on EPIC, and TCL provided an electronic copy on a thumb drive.

In May 2022, TCL's Community Liaison also had correspondence with the owners of Bulkley River Lodge and chairperson of the Upper Skeena Guides Association regarding their concerns with the Project. TCL's Community Liaison followed up when the EAC Application was posted to let them know, and also inform them about the upcoming public comment period and BC EAO-led open house.

In May 2022, TCL's Community Liaison attended the Work BC Smithers office 25-year Anniversary Open House and spoke with the manager about the difficulties hiring in the current conditions, Project timeline, regulatory process, and LOM, as well as transferable skills from other industries. TCL will be in touch with the Work BC Smithers office as the Project progresses.

TCL met with the Back Country Horsemen of BC on June 2, 2022, in Smithers to introduce new TCL team members to the recreational horseback riding group that uses the Telkwa Coalmine Recreation Camp.

In July 2022, TCL received a letter from a local trapline holder whose trapline overlaps with the Project Area. TCL responded thanking them for the letter and asked if there was an opportunity to meet in person. TCL hopes to have further future engagement with the trapline holder.

In early August 2022, TCL had correspondence with both the Mayor of Smithers and a Town Councillor from Smithers regarding concerns they were hearing from citizens about wanting increased in-person public engagement from the BC EAO. TCL reiterated that TCL maintains an open-door invitation to the public and are always available beyond our open house sessions to engage with Council and the public to share information.

## 3.2 Community Group Meetings

### 3.2.1 Tenas Mine Neighbours Group

In mid-May 2022, TCL sent out an email to the members of the Tenas Mine Neighbours Group inviting them to a private event the night before the BC EAO-led open house. The drop-in event was held at the Telkwa Community Hall from 6:00 pm – 8:00 pm on May 31, 2022. The purpose of the event was to give residents who live close to the Project additional access to members of the TCL team to ask questions about the Project. Light refreshments and snacks were provided. As TCL was aware that some of the people in the Tenas Mine Neighbours Group had moved, the Community Liaison visited some residences in person and left a hard-copy invitation to the event.

In later correspondence with a former Tenas Mine Neighbours Group member, TCL was informed that the Tenas Mine Neighbours Group has been disbanded as a result of members moving out of Telkwa.

On May 31, 2022, approximately six neighbours attended the private event, viewed poster boards, and had one-on-one discussions with the TCL team.

### 3.2.2 What Matters in Our Valley

In May 2022, TCL invited a former Tenas Mine Neighbours Group member, now a member of What Matters in Our Valley (WMIOV), to meet the TCL team in person, and that a meeting with any of the TCL team members could be scheduled if there were any questions or concerns, they wanted addressed.

At the BC EAO-led open house (see Section 3.3 below) members of WMIOV set up a table outside of the venue to distribute their information and also attended the open house. TCL offered a number of members of the group electronic copies of the EAC Application – some declined, but two members did take thumb drives. TCL's Environmental Assessment Specialist also provided them with contact info and let them know to follow up if they cannot find the information they are looking for.

In early June 2022, TCL's Community Liaison reached out to WMIOV through their website to ask if they would like to meet with TCL while the Vancouver team was in town for the BC EAO-led open house. TCL did not receive a response.

In late June 2022, TCL's Community Liaison reached out again to WMIOV via the contact form on their website to let them know that TCL is willing to meet to discuss the Project, and that the TCL team would make themselves available in a number of ways. TCL's Community Liaison also provided an update on where copies of the EAC Application were available. TCL did not receive a response.

## 3.3 BC EAO-led Consultation

Pursuant to the Section 11 Order, the BC EAO held a 45-day public comment period on the EAC Application. TCL's EAC Application was accepted by the BC EAO and posted to the EPIC website on May 11, 2022, with the public comment period being from May 19 to July 3, 2022. TCL advertised the BC EAO-led public comment period for the EAC Application Review in the local newspaper and on two local radio stations (**Table 2**). These advertisements included details about the in-person Open House and Virtual Information Session, and the process for submitting comments. Copies of the print advertisements are included in **Appendix B**.

**Table 2: Media Advertisement Dates**

<b>Media Source</b>	<b>Advertisement dates</b>
Interior News	May 26, June 16, and June 23, 2022
CFNR	Three times daily from May 19 - June 1, 2022
Moose FM	Three times daily from May 19 - June 1, 2022

TCL also posted electronic versions of the print ads on social media and posted a printed copy of the advertisement on the community events board in Telkwa.

### 3.3.1 Open House

As part of the 45-day public comment period on the EAC Application, TCL participated the BC EAO-led open house in Telkwa on June 1, 2022. The open house was held from 4:00 pm – 8:00 pm at the Telkwa Community Hall. A total of 62 people attended including Telkwa Councillor Leroy Dekens. The open house was scheduled for a four-hour period and arranged in a come-and-go format to accommodate community member schedules. The timing of the open house was purposefully designed to allow for attendance directly after work or after the dinner hour. Snacks and light refreshments were available for attendees as was a children's colouring station.

BC EAO representatives welcomed the public and provided information on the EA process and the public comment period. Attendees viewed TCL's 25 posterboards that described results of the EA and proposed mitigation measures. TCL also had a 3-D model that illustrated what the Project and landscape will look like during different phases of the Project. Print copies of the EAC Application were available for viewing and reference, and TCL provided electronic copies upon request. Attendees who requested more information were provided with TCL team contact information for follow-up. PDF copies of the open house poster boards are provided in **Appendix C**.

### 3.3.2 Virtual Information Session

As part of the 45-day public comment period on the EAC Application, TCL participated in the BC EAO-led Virtual Information Session on June 8, 2022, from 12:30 pm – 1:00 pm. TCL provided a presentation, including an overview of the proposed Project and a detailed summary of its EAC Application, including the results of studies and proposed mitigation measures. A total of 16 participants attended the Virtual Information Session.

### 3.3.3 Public Comments

A total of 535 comments were submitted by the public during the BC EAO public comment period, including a number of letter submissions. WMIOV was given an extension by the BC EAO and submitted their letter response on July 22, 2022. TCL is required under the Section 11 Order to respond to public comments received on the EAC Application, and at the time of writing this Report, TCL is still in the process of responding to all of the comments.

The geographic distribution of these comments ranged from local communities including Telkwa and Smithers to as far away as South Africa. The majority of comments were generated from communities in BC (155 comments/29%) other than Telkwa and Smithers. The next largest group of comments came from the USA (131 comments/24%). Smithers and Telkwa comments were the next largest group (118 comments/22% and 82 comments/15% respectively).

30 comments (6%) were in support of the Project, with 25 of these comments (5%) being from Telkwa and Smithers. These comments highlighted the importance of economic opportunities for local residents.

Generally, the remaining comments focused on interests related to water quality, air emissions, climate change, fish, and wildlife. While many of the comments submitted were statements not requiring response, TCL will respond to all questions received as part of these comments, and TCL's responses will be provided to the BC EAO for review prior to finalization and posting to BC EAO's EPIC website.

Based on the repetition of specific content, it was determined that at least 81 comments (15%) were a result of advocacy campaigns by WMIOV and the Native Fish Society, an American angling advocacy group. These comments were identified by the use of exact wording as displayed at the group websites. WMIOV accounted for 36 comments (7% of total comments) and the Native Fish Society accounted for at least 45 comments, which is 8% of total comments.

**Table 3** in Section 4 below provides a summary of some of the key issues and themes raised in public comments and TCL's responses. All the comments and letters received during the public comment period are available on the BC EAO's EPIC website.

#### 4. SUMMARY OF KEY ISSUES AND CONCERNS RAISED DURING PUBLIC CONSULTATION

TCL is committed to continuing to create and facilitate opportunities for the local community and interested parties to provide meaningful input and feedback on the Project. TCL documents Project-related consultation and engagement activities to ensure that the consultation process is accurately captured in reports that are submitted to regulators and as part of the EA process. TCL records relevant communications made through phone calls, emails, letters, and meetings. Records include details on who was present, the date and location of the consultation activity, and the purpose and outcomes of the discussions. Comments and responses to comments are tracked by TCL via a tracking table.

**Table 3** provides a summary of some of the key issues and themes raised during the public comment period and TCL's responses.

**Table 3: Summary of Concerns Raised During the Public Comment Period Telkwa Coal Limited's (TCL's) Responses**

Concern	TCL Response
Effects to water quality	Based on comprehensive studies and reviews by independent Qualified Professionals (QPs), the predicted parameter concentrations including selenium, cadmium, nitrite, and sulphate discharged in watercourses downstream of the Project during its lifespan will not cause adverse effects to fish, amphibian, and bird populations and/or any other aquatic populations. Telkwa Coal will have a robust water quality monitoring network to verify the predictions provided in the Environmental Assessment (EA) and these results will be provided directly from 3rd party laboratories to the public and regulatory agencies.
Changes to air quality, increase in dust	Coal or other dust will not exceed the provincial objectives for dust fall near the Tenas Project (Project). Management of air emissions and dust at the Project is important to TCL. Through implementation of the Air Quality Management Plan (AQMP) and relevant Standard Practices and Procedures (SPP), TCL will minimize

Concern	TCL Response
	air emissions and dust from the Project, and thus potential exposure to employees, residents, the public, and the environment.
Climate change	<p>The Tenas Project (Project) will produce metallurgical (or steelmaking) coal which is a vital ingredient in the steel-making process. Without steel we cannot transition to a renewable energy economy that is required to address the climate crisis and metallurgical coal is required to produce over 70% of steel today and it is expected this value to still be 50% by 2050.</p> <p>Telkwa Coal is also concerned about climate change and that is why we have included measures like providing funds to our employees to purchase electric cars and associated charging equipment, and to convert their inefficient wood/oil heating furnaces to electrically powered heat pumps.</p> <p>Telkwa Coal is also investigating options of partial offsetting of carbon emissions and carbon credits, as well as options to reduce carbon dioxide emissions by utilizing electric equipment.</p>
Increased noise	<p>Based on independent third party modelling, the Project will not exceed BC provincial requirements for maximum permissible sound levels at the location of its nearest neighbours both during daytime (50 dBa) and nighttime conditions (40 dBa).</p> <p>Telkwa Coal will have a robust monitoring program that will be in place to verify effectiveness of mitigation measures, to ensure the objectives of the Air Quality Management Plan (AQMP) are met and recommend corrective actions where necessary.</p>
Effects to caribou and caribou habitat; overlap with Wildlife Habitat Area	<p>The Tenas Project (Project) is within Wildlife Habitat Area 6-333 (WHA 6-333) for the Telkwa Caribou Herd. The Order for WHA 6-333 prescribes conditions for forestry and associated activities and directions and conditions specific to mineral and coal exploration and development.</p> <p>The current Telkwa Caribou Herd annual range is in the alpine and subalpine areas of the Telkwa Mountains and eastern portion of the Howson Mountain Range. The herd's range is bounded by large river valleys to the north, east, and south, and rugged high elevation coastal mountains that get heavy snowfall to the west.</p> <p>The Project is in the sub-boreal spruce forest, an ecological zone that occurs from valley bottoms to 1350 metres elevation. In their 2019 delineation of caribou habitat, the Province of BC identified this low elevation forest as Matrix habitat that surrounds the Core habitat which represents the annual range of the Telkwa Caribou Herd. The Project would temporarily occupy a footprint (i.e., direct disturbance) of 830 hectares and a maximum disturbance area called the Project Area (this includes a buffer and contingency space around the footprint) of 1,855 hectares.</p> <p>The Project will be constructed entirely on land previously disturbed by forestry cutblocks, infrastructure, and agricultural land use. Caribou locations known from collar data collected between 1994 and 2018 showed that 99.6% of occurrences were more than 4 km from the Project Area and caribou do not migrate through the Project Area.</p>
Effects to fish and fish habitat	<p>The Environmental Assessment (EA) was conducted by independent, third-party Qualified Professionals (QPs) and used the most up-to-date and comprehensive procedures in practice today.</p> <p>The assessment of fish and fish habitat concluded there will be no significant adverse residual effects to fish and fish habitat from any Project activities. Furthermore, during the life of the Project and beyond, no water quality parameters downstream of the Project (i.e., Goathorn Creek, Telkwa River, Bulkley River) will exceed BC water quality guidelines for the protection of aquatic life beyond the ones already exceeding these guidelines under baseline conditions.</p> <p>The Goathorn and Tenas Creeks, which are the least affected by the Project, produce the largest portion of steelhead spawning and rearing habitat for the Telkwa River, whereas Four Creek, which is most affected by the Project provides almost no</p>

Concern	TCL Response
	<p>spawning and rearing habitat for steelhead or salmon. Overall, the environmental effects assessment completed for the Project concluded there will be no significant adverse residual effects to fish and fish habitat from mining activities.</p> <p>The Project will not have a measurable effect on the Bulkley and Skeena Rivers.</p>
Project use of water	<p>The Telkwa Project (Project) is expected to require a maximum of 180,000 cubic metres (m<sup>3</sup>) of water annually to provide make up water for the Project to process coal, wash equipment, control dust, dilute chemical agents, and for drinking water excluding what is required to maintain the water cover for the management ponds. This is equivalent to 112 people based on the average water use per capita in Canada to maintain our standard of living. Average use will be closer to 120,000 m<sup>3</sup> annually.</p> <p>Rain and snow that falls on the Minesite will be collected and stored in the sedimentation, management, and control ponds to supply water for run of mine coal processing, equipment washing activities and providing water for maintaining the water cover for the PAG stored in the management ponds.</p> <p>If required, as a contingency plan, up to 2.5% of Goathorn Creek's annual flow may be obtained from newly installed groundwater wells adjacent to the creek.</p> <p>Water for dust suppression at the rail infrastructure site is expected to be taken from the sedimentation pond that is planned near the rail infrastructure and from an existing groundwater well. If sufficient potable water cannot be sourced onsite, water will need to be purchased from licensed third-party operators within the Regional District of Bulkley-Nechako (RDBN).</p>
Acid rock drainage	<p>Some of the material within the open pit for the Project has the potential for generating acid rock drainage (ARD) and needs to be managed properly to ensure it does not become exposed to oxygen or it will generate ARD and will require active treatment.</p> <p>During the engagement process Telkwa Coal completed during the past five years we heard that active treatment like what is being carried out at Equity Silver is not an option, which leaves prevention as the preferred course of action with the best method of doing this being submerging potentially acid generating (PAG) material under water. This is not unusual compared with other mining operations including ones approved and operating in the region such as the Red Chris Mine, Bruce Jack, Kemess North, and Mount Milligan. All of these operations will also need to maintain containments in perpetuity for the storage of PAG material to prevent ARD.</p>
Project size and comparisons to the Elk Valley	<p>The Tenas Project (Project) is not of the same size or duration of mining operations in the Elk Valley so the resulting effects will likewise similarly be reduced. The mines started in the Elk Valley in the early 1970's when environmental assessments (EAs) were in their infancy. Today EAs are a mature science, and all aspects are quantified and analyzed to fully understand potential effects of a Project. Many of the comments submitted make direct references and comparisons between the Elk Valley (five Teck Coal mines) and the Bulkley Valley (one proposed Tenas mine) watersheds. It needs to be stated – from the outset – that these comparisons are not supported whatsoever, given the temporal and spatial differences between these two scenario areas. What has occurred in the Elk Valley is not equivalent to what is proposed for the Project. Lastly, the production rates seen in the Elk Valley of both processed coal and total material moved are orders of magnitude higher than what is currently proposed by the Tenas Project which contributes to the higher levels of dust and noise seen in the Elk Valley.</p>

## 5. NEXT STEPS

TCL will continue to work on responses to public comments received during the public comment period, and TCL's responses will be provided to the BC EAO for review prior to finalization and posting to the BC EAO's EPIC website.

The BC EAO requires a public comment period on the BC EAO's draft Assessment Report and proposed conditions of an EAC. While the BC EAO will be responsible for posting the draft documents and responding to public comments, TCL will participate in this public comment period as directed by BC EAO.

TCL is committed to creating and maintaining opportunities for constructive dialogue and relationships with the local community and other interested parties over the course of the Project. Should the Project be successful in receiving an EAC, TCL will continue to employ engagement strategies that promote effective communication and relationship-building as outlined in the Public Consultation Plan including continued community engagement during different phases of the Project (Construction, Operation, Decommissioning and Reclamation, and Post-closure phases), as well as compliance and enforcement activities as needed.

## 6. REFERENCES

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## Appendix A

## Interested Parties

**Table A-1: Interested parties identified since 2017**

<b>Regional and Provincial Government</b>
BC Environmental Assessment Office
BC Ministry of Agriculture and Food (formerly Ministry of Agriculture)
BC Ministry of Energy, Mines and Low Carbon Innovation
BC Ministry of Environment and Climate Change Strategy
BC Ministry of Forests (formerly Ministry of Forests, Lands, Natural Resource Operations and Rural Development)
BC Ministry of Land, Water and Resource Stewardship (formerly Ministry of Forests, Lands, Natural Resource Operations and Rural Development)
BC Ministries of Jobs, Trade and Technology
BC Ministry of Municipal Affairs and Housing
BC Ministry of Transportation and Infrastructure
BC Agriculture Land Commission
Northern Health
Provincial Member of Legislative Assembly for Stikine
<b>Federal Government</b>
Impact Assessment Agency (formerly Canadian Environmental Assessment Agency)
Environment and Climate Change Canada
Federal Member of Parliament for Skeena-Bulkley
Natural Resources Canada
Transport Canada
<b>Local Governments</b>
Village of Telkwa
Town of Smithers
Regional District of Bulkley-Nechako
District of Houston
<b>Other Government Entities</b>
BC Hydro
Northwest BC Resource Benefits Alliance
Work Safe BC
<b>Local and Regional Community</b>
Tenas Mine Neighbours Group (disbanded)
Bulkley Valley Residents (includes residents of the Village of Telkwa, Town of Smithers, and Regional District of Bulkley-Nechako).
<b>Recreation Groups</b>
Back Country Horsemen of BC
Bulkley Valley Backpackers
Bulkley Valley Bowmen
Bulkley Valley Intensive Motorized Association
Bulkley Valley Quad Riders
Bulkley Valley Rod and Gun Club

Enduro Club
Smithers Snowmobile Club
Upper Skeena Angling Guide Association
Guide outfitters (commercial)
Local Trapline Holders (commercial)
<b>Community Interest Groups</b>
Bulkley Valley Community Resources Board
Bulkley Valley Lakes District Airshed Management Society
Bulkley Valley Museum
Bulkley Valley Research Centre
Education Providers (Coast Mountain College, Bulkley Valley Learning Centre, School District 54 Bulkley Valley, Smithers Secondary School, Telkwa Elementary School, Muheim Elementary School)
Local Businesses
Skeena Watershed Conservation Coalition
Smithers Chamber of Commerce
Smithers Exploration Group
Telkwa Museum
What Matters in Our Valley
<b>Industry</b>
Canadian National Railway
West Fraser Timber Company (Pacific Inland Resources)
Pacific Northern Gas Ltd.
Ridley Terminals Inc.

## Appendix B

## Public Comment Period Media Advertisement

# Town allows homeless people to camp in Veterans Park

By Marisca Bakker  
Smithers Interior News

The trailer in Veterans Park housing people who are experiencing homelessness has been removed. However, the people who were residing there are not necessarily going anywhere.

The Atco trailer was funded through an emergency winter shelter fund and that funding ran out.

Smithers Town Council held an emergency meeting May 17 to try to figure out another solution for the vulnerable people living there.

Mayor Gladys Atrill said the town does have a requirement to make some space available for people who are not adequately housed.

"There isn't housing available for some. And so we're just trying to make the best of the situation we have," she said.

The mayor noted that recent court decisions have taken away the option from municipalities to just say people can't camp.

"We have a requirement to make some room available. The town doesn't have a lot of pieces of property, we have our parks, etc., but, you know, we don't have a lot of vacant land."

She said people used to camp on a piece of property behind The Meadows retirement home sometimes called "the green space" or "the snow dump" or "the jungle."

The town had intended to try to put some safety supports in there and allow people to camp, but pushback from residents of the area quashed that plan.

Councillor Casda Thomas said in the emergency meeting that support workers visiting their clients

feel safer in a more open area than the green space location provides. Councillor Benson pointed out that the ground is also very wet there right now.

The funding for the trailer expired in March, but so far, has been extended on a weekly basis.

Council agreed that allowing people to camp in Veterans Park isn't ideal but is the best solution for right now.

"It's a really tough position to be in for the town, but we're not alone. Every town is in this position. We just have to sort of figure out our way through this."

Atrill added that ideally, it would be good to identify a location that might work longer-term, and it would be good to come up with a structure that would create a more permanent solution for people who are vulnerable or who cannot find housing but lack of funding and lack of town-owned land is making that difficult.

"This is not this is not easy for anyone," she said. "And we have an obligation as the municipality to make some space available."

Kirsten Patrick was living in the trailer and said she and other residents were extremely grateful for it. They will continue to live in that area with tents now.

"It feels much safer here than going back to the jungle," she said.

By-law officer Matt Davey said the lockers the town provided prior to the trailer arriving, will remain for people to use and a sea can office will be put there for supervision.

Positive Living North will provide peer support staffing up to 75 hours a week. It will not be monitored 24/7.

# Toronto Blue Jays grant Witset \$150K for ball field reburishment

By Thom Barker  
Smithers Interior News

Witset's women's/kids' ball field will be getting a \$150,000 facelift courtesy of the Toronto Blue Jays.

The Jays Care Foundation announced April 22 that the Witset First Nation was among the recipients of this year's Field of Dreams grant program.

The program was created by the charity arms of Canada's only major league baseball team to promote youth life-skill development across the country.

Over the past 10 years the Jays have invested more than 15 million in 145 baseball infrastructure projects in all 10 provinces and two territories.

"Jays Care is thrilled to invest in building and refurbishing community baseball



The women's/youth ball diamond at Witset will be getting a \$150,000 facelift courtesy of the Toronto Blue Jays. (Interior News file photo)

diamonds for sixteen communities across the country. We believe that now, more than ever, it is vital for kids to have spaces where they can safely play, connect and learn," said Robert Witchel, executive director of the Jays Care Foundation.

This year's 1.2 million impacts 16 communities across the nation including two others from B.C. Columbia Valley Little League in Invermere

and Kamloops Minor Ball will also be receiving cash to refurbish ball diamonds.

## SMILE FOR THE WEEK

"Anything is good if it's made of chocolate."

- Jo Brand



Tracey Turko, RD



1142 Main Street, Smithers  
847-5318

First Impressions Count

## Environmental Assessment of the proposed Tenas Project Invitation to Comment

Telkwa Coal Ltd. has proposed the Tenas Project, an open-pit coal mine 25 km south of Smithers, near Telkwa, B.C.

The Environmental Assessment Office will hold a public comment period on the project starting

**May 19 to July 3, 2022**

Learn more about the Tenas Project and tell us what is important to you.

[gov.bc.ca/eaopubliccomments](http://gov.bc.ca/eaopubliccomments)



**EAO's Public  
Comment Period  
starts May 19, 2022**

### In-Person Open House

**Telkwa**

**Weds, June 1, 2022  
4 pm to 8 pm**

Telkwa Community Hall  
1390 Birch Street, Telkwa, B.C.

*In-person open house will be held unless provincial COVID-19 safety measures change.*

### Virtual Information Session

**Weds, June 8, 2022  
12 pm to 1:30 pm PDT**

Go to [gov.bc.ca/eaopubliccomments](http://gov.bc.ca/eaopubliccomments) to learn how to join.



**EAO**

Environmental  
Assessment Office

# Accused in Smithers 2020 home invasion sentenced to three years

By Thom Barker  
Smithers Interior News

One of the accused parties in a December 2020 home invasion in Smithers that left an elderly woman injured pleaded guilty in Smithers Provincial Court June 13.

Eugene Ryan Tom pleaded guilty to a break, enter and theft for an attack that took place at approximately 2:30 a.m. on Dec. 18, 2020.

When officers arrived at the home that morning they found the then-88-year-old woman in distress from being bear-sprayed in the face.

"The woman was coughing and suffering from mouth irritation as a result of the spray being used and taken to hospital for medical treatment," a Dec. 21, 2020 press release stated.

The judge accepted the Crown and

the defence's joint recommendation to sentence Tom to three years in prison. In the joint submission counsel cited Gladue factors that compel a judge to consider elements of accused's background, particularly those associated with the impacts of racism, colonialism and residential schools.

Charges against a co-accused, Clinton Brown were dropped.

"The BCPS can confirm that charges against the co-accused Brown on the same file were stayed on May 31 when the Crown with conduct of the file concluded the charge assessment standard was no longer (met) with respect to that accused," McLaughlin said.

Tom also pleaded guilty on June 13 to assaulting a peace officer from earlier this year while was incarcerated in Merrit.



A tractor-trailer carrying a load of lumber caught fire near Kitwanga June 10. (Lawrence Wilson photo)

## Truck hauling lumber catches fire near Kitwanga

By Thom Barker  
Smithers Interior News

Police and fire services responded quickly to a vehicle fire June 10 near Kitwanga.

According to a witness at the scene, a tractor-trailer carrying a load of lumber blew a tire pulling into the Seven Sisters Rest Area on Hwy 16 west of the junction with Hwy 37 causing the undercarriage to ignite.

The driver quickly pulled into the rest stop and separated the cab from the trailer. 9-11 was called and firefighters from Gitwanga and Gitanyow responded and were able to get the blaze under control.

## Armed robbery suspect charged

By Thom Barker  
Smithers Interior News

A 35-year-old man has been charged with an alleged May 24 armed hold-up at Salt Boutique in Smithers.

Devin Christopher Fuller was to appear in Smithers court June 14 facing one count each of robbery and possession of a weapon for a dangerous purpose.

Fuller was arrested shortly after the alleged crime took place when a Smithers conservation officer chased him down and apprehended him.

CO Ron Leblanc and his partner heard the call that Tuesday afternoon on their police dispatch radio about an armed robbery in progress at the

Main Street store and they sprang into action.

Having stopped to grab a coffee en route to a remote patrol cabin, the officers happened to be just a couple of blocks away.

The COs hit their lights and siren and joined the RCMP in the search for the suspect who had fled the scene of the alleged crime on foot.

They spotted him moments later, according to the Conservation Officer Service, and Leblanc jumped out of the patrol truck and chased the man down.

"It was just like out of a movie," said Leblanc. "As he's running, the cash is falling out of his pocket as we're chasing him."

RCMP took over from there.

## Driver charged after videos surface

By Thom Barker  
Smithers Interior News

Social media posts have landed a Smithers driver with a heap of traffic citations and a licence suspension.

Police pulled over the 27-year-old man on June 4 for a speeding infraction. At that time, Smithers Highway Patrol officers recognized the vehicle from a series of videos that had been posted to social media that were under investigation.

The driver was identified by distinctive tattoos visible in the videos.

The videos showed the driver engaged in a number of high-risk behaviours including speeding, using an electronic device while driving, consuming alcohol while driving, and stunt driving without holding the steering wheel at high speeds, an RCMP press release issued today (June 9) stated.

Any one of these behaviours is

extremely dangerous and risky, but the combination is downright scary," said Inspector Darren Woroshelo, commander of the Northern Highway Patrol. "After just wrapping up a month-long high-risk driving campaign, police are always looking for dangerous driving... even on social media.

At the time of the traffic stop, officers found several containers of open alcohol within reach of the driver in the vehicle.

He was issued "numerous violation tickets under the provincial Motor Vehicle Act, Motor Vehicle Act Regulations, Liquor Control and Licensing Act and Transportation of Dangerous Goods Regulations," the press release said.

His vehicle, a Dodge pickup truck, was also impounded under three separate excessive speeding/stunting allegations and towed from the scene, it said.

## Environmental Assessment of the proposed Tenas Project Invitation to Comment

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[gov.bc.ca/eaopubliccomments](http://gov.bc.ca/eaopubliccomments)



# Toxic drug alert issued for Smithers area

By Thom Barker  
Smithers Interior News

Northern Health and the First Nations Health Authority have issued a toxic drug alert for the Smithers area.

The alert reports a recent increase in overdoses in Smithers related to a dark burgundy/red, chunky, dense substance being sold locally as “down.”

“The drug supply is very toxic right now,” said Reanne Sanford, Northern Health’s regional nursing lead for harm reduction. “We’re just wanting to look after our community and ensure everyone stays really well and healthy.”

Down may refer to a number of drugs in the opioid family, she explained.

“This substance is highly toxic, causes sudden overdose and prolonged sedation and memory loss,” the alert states.

“Overdoses are happening when the substance is smoked and injected.”

While the alert is related to overdoses observed anecdotally in Smithers, the health authorities are asking that the word be spread widely because substances tend to

move throughout the region.

Northern Health suggests people should be aware of the early warning signs, such as choking, gurgling and snoring sounds.

They also provide tips on avoiding overdoses including carrying naloxone, not using alone and downloading the Lifeguard or BeSafe app from Google Play or the Apple app store.

“We just want to create general awareness so people can ... make safety plans around substance use, so, reducing the amount and making sure people are together when they’re using substances, have naloxone on hand and can call for help if they need to.

Naloxone kits are available at five locations in Smithers: the Smithers Health Unit in the courthouse building on Alfred Avenue; the Smithers Mental Health Services Unit Outreach Team, 3862 Broadway Avenue; Safeway Pharmacy; Shoppers Drug Mart; and Pharmasave.

They are free under the B.C. Centre for Disease Control’s Toward the Heart harm reduction program to people at risk of an opioid overdose and people likely to witness and respond to an overdose such

as family members or friends of someone at risk.

Sanford said the kits are very easy to use and training and certification are available online at [towardtheheart.com](http://towardtheheart.com).

Providers of the kits are also happy to demonstrate their use, she added.

“I think what is important to highlight is breathing is a huge component of responding to overdoses. Naloxone is very important, but if you don’t breathe for someone when you’re drawing up the naloxone they can actually get brain damage ... so breathing for people is the most important thing when you’re responding to an overdose and they do go through that on the training videos.

Statistics indicate more than 90 per cent of overdoses occur when users are alone.

The Lifeguard and BeSafe apps allow a user to set a timer when they consume their drugs.

When the timer goes off, if the user is unable to respond it alerts medical responders.

The apps do not connect to law enforcement.

The alert is currently scheduled to expire June 29.

Northern Health and the First Nations Health Authority issued a toxic drug alert for the Smithers area this June 17.

## Smithers' director of corporate services moves on



Smithers Town Hall (File photo)

By Marisca Bakker  
Smithers Interior News

There is going to be a slight shake-up in the Smithers Town Office.

The director of corporate services is leaving on Friday (June 17).

Duncan Malkinson is headed back to his hometown of Dawson Creek where has taken a role as the executive director of the Dawson Creek Art Gallery.

“I’m looking to get involved in some community groups there, and be a little closer to my family,” he said. “It pains me to leave such an amazing, passionate and connected community. The team at the Town have been a great example of loyalty to council’s goals.”

Malkinson was only with the

town for about a year. Previously, he was at the District of Houston, also only for about 11 months.

Mayor Gladys Atrill thanked him for his time and contribution at the June 14 regular meeting of council.

“I would cry if that would make you stay but I know it won’t, so I’ll save myself the embarrassment and the tears,” she said. “We thank you and wish you the best as you go forward, you’ve left a mark here and we’ll miss you.”

David Schroeter, the current chief administrative officer for the District of Fort St. James will assume Malkinson’s role, effective July 4th, 2022. He will assume most of Malkinson’s portfolio, including as the chief election officer for the general election this fall.

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**EAO**

Environmental Assessment Office

## Appendix C

## Open House Poster Boards



Private Properties



TELKWA

TELKWA COALMINE RD

AVELING COALMINE RD

LAWSON ROAD

Bulkley River

16

Helps Creek

TELKWA RIVER FSR

Telkwa River

BC Hydro 25 kV Powerline

Gravel Quarry

Rock Quarry

TENAS ACCESS CORRIDOR

Rail Infrastructure

138 kV Powerline

Discharge Path

Explosive Infrastructure

Project 25 kV Powerline

500 kV Powerline

Tenas Control Pond

North Management Pond

Coal Processing Plant Sedimentation Pond

Mine Infrastructure Complex

Tenas Creek

West Management Pond

East Management Pond

TCL Private Property

Goarhorn Creek

Telkwa Coal Licence

Haul Roads

Topsoil Stockpile

Topsoil Stockpile

Open Pit Backfill

End Pit Lakes

Project Area

Four Creek

# TENAS PROJECT COMPONENTS

# ATMOSPHERIC ENVIRONMENT - AIR QUALITY

## TENAS PROJECT

### Telkwa Coal Assessed the Potential Project-related Effects on the Atmospheric Environment Valued Component

Valued Component	Subcomponent	Potential Effects Assessed
Atmospheric Environment	Air Quality	Increase in Ambient Criteria Air Contaminants (CAC) Concentrations

- Air quality in the Local and Regional Study Areas are affected by natural air emissions (e.g., wind-blown dust), residential emissions (e.g., wood burning), forestry activity, vehicle traffic, and road dust.



Particulate matter sampler.

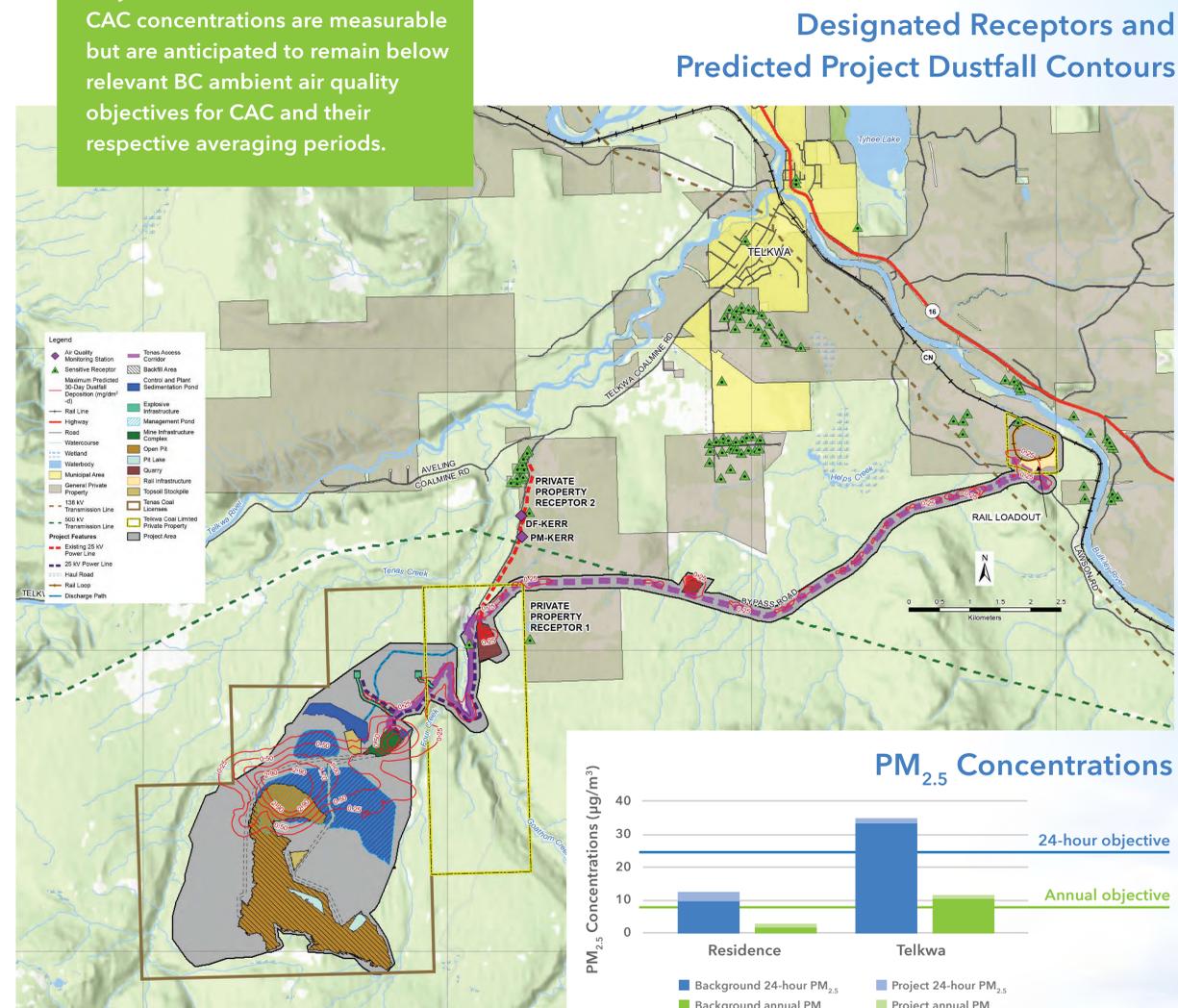
**Particulate Matter (PM)** represents the main air quality concern in the Local and Regional Study Areas, with existing PM concentrations within populated areas exceeding the relevant BC air quality objectives up to 8% of the time.

**Dustfall** deposition rates near unpaved roads also tend to be high, occasionally exceeding the rescinded BC provincial objectives for existing conditions. Dustfall deposition rates in more remote parts of the study areas tend to be lower.



Water truck managing dust on roads.

Project contribution to ambient CAC concentrations are measurable but are anticipated to remain below relevant BC ambient air quality objectives for CAC and their respective averaging periods.



### Example Mitigation Measures

- Build, maintain, and use the Tenas Access Corridor (TAC) for hauling processed coal to the Rail Infrastructure.
- Use dust suppression agents on rail cars.
- Cover super B-train trucks when hauling processed coal from Coal Processing Plant to Rail Infrastructure.
- Use water and chemical agents on the TAC, and Minesite service and haulroads.
- Use best management blasting techniques.
- Implement a fleet maintenance program to support optimal operation of vehicles and equipment.
- Fund a program to assist personnel to replace their wood or oil burning stoves with alternative lower emission or higher efficiency heating systems.

### Residual Effects

- Changes in ambient CAC concentrations due to the Project will not result in any new exceedances of the BC ambient air quality objectives.



# AQUATIC RESOURCES

# TENAS PROJECT

## Telkwa Coal Assessed the Potential Project-related Effects on the Aquatic Resources Valued Component

Valued Component	Potential Effects Assessed
Aquatic Resources	<ul style="list-style-type: none"> <li>• Changes in Water Quality</li> <li>• Changes in Sediment Quality</li> <li>• Changes in the Abundance and Community Structure of Periphyton and Benthic Invertebrates</li> </ul>

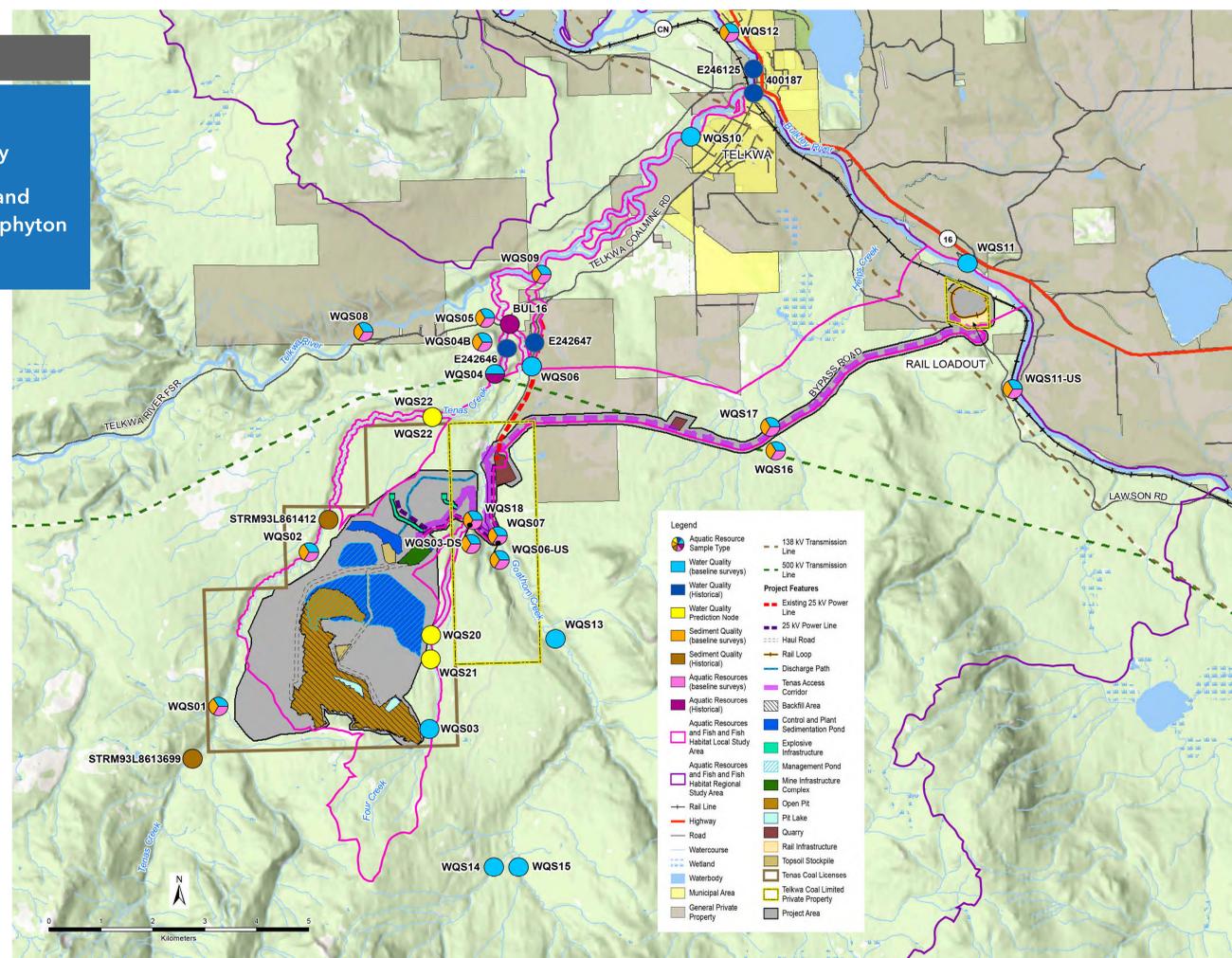
Baseline programs were conducted between 2017-2020:

- Periphyton sampling
- Benthic invertebrate sampling
- Sediment sampling

- Periphyton biomass was higher in the larger rivers than the smaller tributary creeks.

- Periphyton communities were dominated by either Bacillariophyceae (diatoms) or Cyanophyceae (blue-green algae).
- Invasive Didymosphenia ("rock snot"), identified in Tenas Creek, the Telkwa River, and the Bulkley River.
- Benthic invertebrate abundance displayed high temporal and spatial variability.
- Benthic invertebrate abundances were generally highest in the Bulkley River, and lowest in Four Creek.
- Sediment metal concentrations varied across Project Area streams.
- Sediment arsenic, iron, manganese, and nickel concentrations appear to be elevated in the Project Area at all sites, including upstream of the Project.

Aquatic Resources Sampling Locations, 2017-2020



### Example Mitigation Measures

- Use overburden bentonite liners for management ponds to reduce the amount of groundwater seepage and potential effects on surface and groundwater quality.
- Sedimentation and control ponds will have sufficient storage capacity for 1 in 10-year storm events and will be designed to withstand a 1 in 200-year storm event; total suspended solids (TSS) and/or turbidity will be monitored prior to release.
- Monitor and control water discharges from Tenas Control Pond to a tributary of Goathorn Creek based on downstream water flow rates and water quality to meet in-stream guidelines and flow requirements.
- Spill prevention and response measures will be implemented during vehicle and equipment travel/operations.
- Sediment and erosion control measures will be implemented.

### Residual Effects

- The residual effect is not expected to alter the integrity of the Aquatic Resources Valued Component within the Regional Study Area beyond an acceptable level.



# ACID ROCK DRAINAGE (ARD)

## TENAS PROJECT

### Acid Rock Drainage (ARD) Refers to the Outflow of Acidic Water from Rock

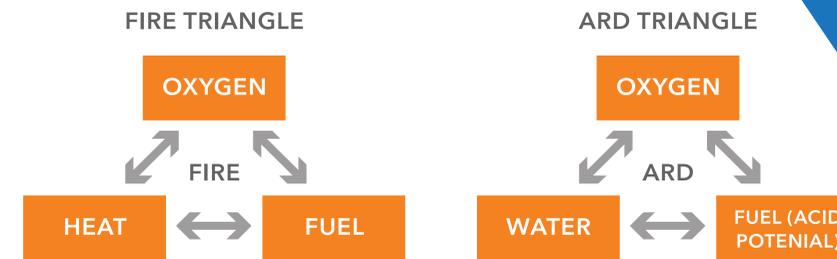
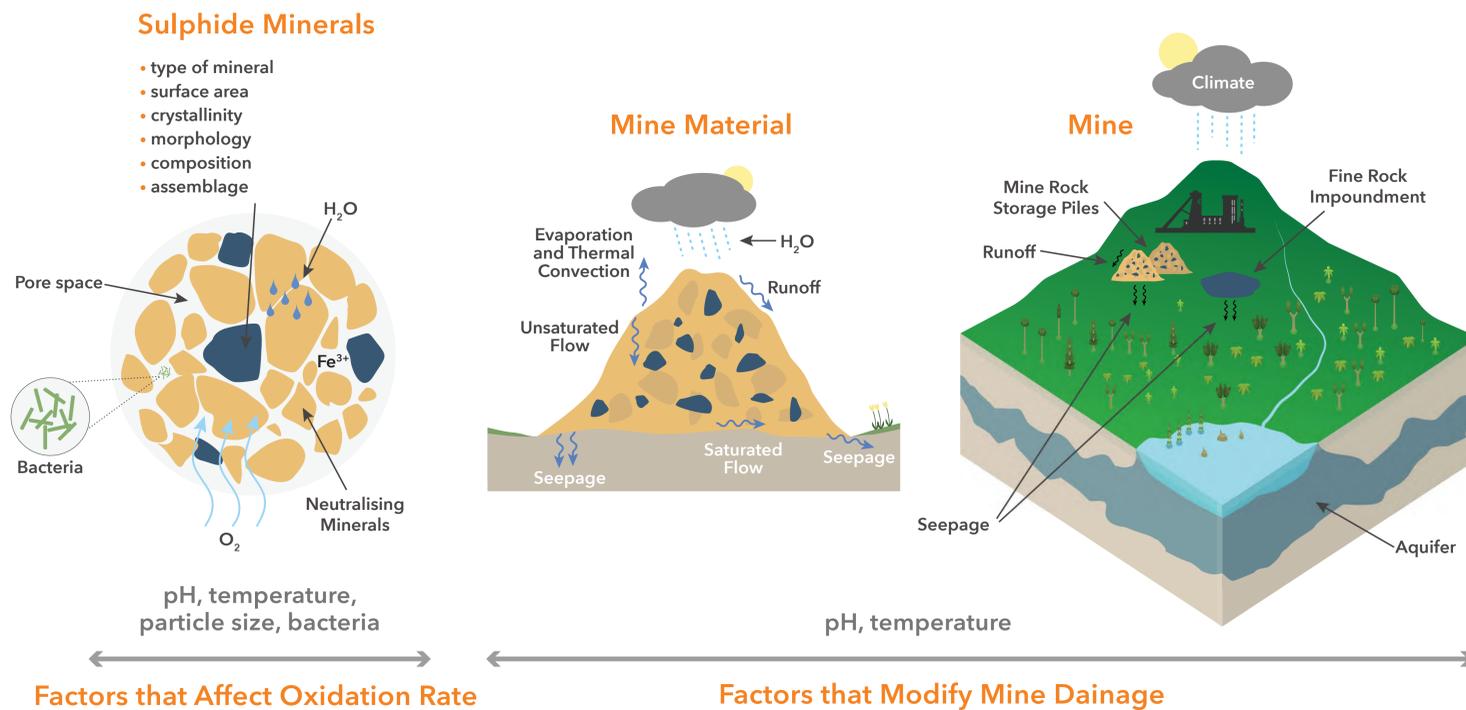
This is a natural chemical oxidation reaction which occurs when sulphide minerals (such as pyrite) are exposed to air and water where these minerals release sulphuric acid and metal oxides into watercourses downstream.

Bedrock buried in the Earth is chemically stable as it is not exposed to air, but when it becomes exposed to air and water the rock becomes destabilized through chemical and physical changes.

The components of the ARD reaction can be thought of in the same manner as the combustion reaction for fire, in that almost the same three inputs are required for the ARD reaction to occur.

Much like the fire triangle, the ARD triangle shows the reaction can be prevented if one of the inputs is removed.

The most effective approach for mitigating the effects of ARD is avoidance, which can be accomplished by proactive identification and segregation of Potentially Acid Generating (PAG) rock for management.



- In advance of, and during mining, TCL proposes to progressively construct three management ponds for the permanent submersion of PAG material.
- PAG material will be submerged under at least 2 m of water once the management pond has met its PAG material storage requirements. During interim period, PAG materials are submerged under 1 meter of water within an average of 6 months but no longer than 12 months after placement.
- The North Management Pond will be completed first, followed by the East Management Pond and finally the West Management Pond.
- A layer of non-PAG rock will be placed on top of the submerged PAG material below the active water level of the respective management pond, followed by a layer of overburden and reclamation materials (surface soils) to create a dry landform above water, similar to pre-Project development.

TCL has developed a Metal Leaching /Acid Rock Drainage Management Plan (ML/ARDMP) to address the management of of potential acid generating materials, and the plan will be implemented for all Project phases.

While these processes occur naturally, exposing and physically disturbing sulphide-bearing rock can accelerate ARD generation.

When mining begins bedrock is primarily undisturbed and unweathered, with weathering and oxidation beginning as mining exposes open pit walls and places non-economic materials into storage piles, backfill, or embankments and buttresses..



# AVIAN SPECIES

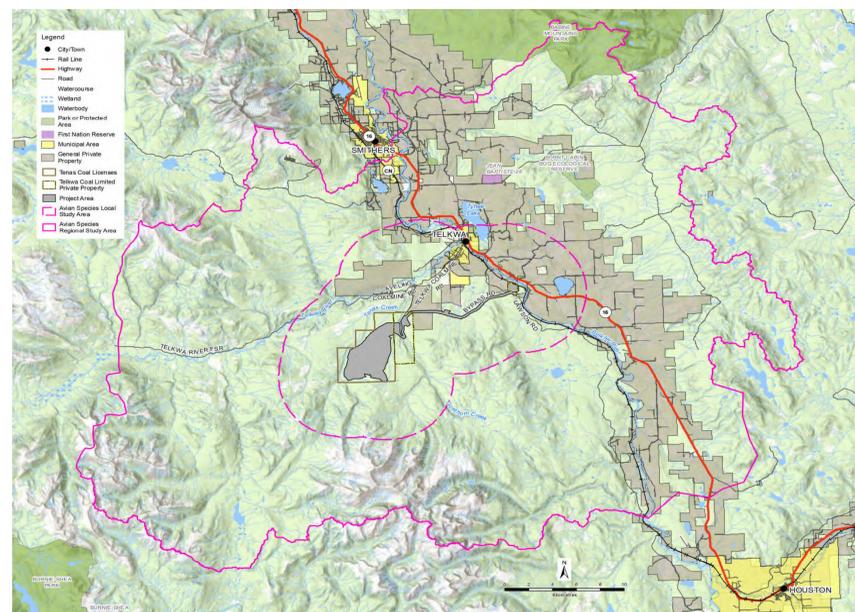
# TENAS PROJECT

## Telkwa Coal Assessed the Potential Project-related Effects on the Avian Species Valued Component

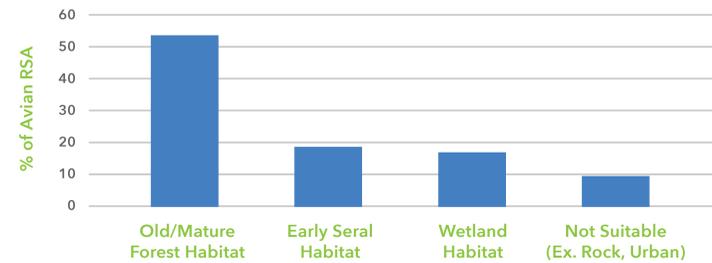
Valued Component	Subcomponent	Potential Effects Assessed
Avian Species	Migratory Breeding Birds, Listed Birds Species, Raptors	<ul style="list-style-type: none"> <li>Alteration and/or loss of habitat</li> <li>Change in mortality</li> <li>Change in movement patterns</li> </ul>

A program of field surveys was designed and conducted between 2017-2019

- Avian Species Regional Study Area (RSA) provides a variety of aquatic and terrestrial habitats for avian species.
- Elevation range is narrower within the Avian Species Local Study Area (LSA) and Project Area which limits the diversity of available avian species habitats compared to the RSA.



## Habitat Suitability Modelling Results for the Avian RSA



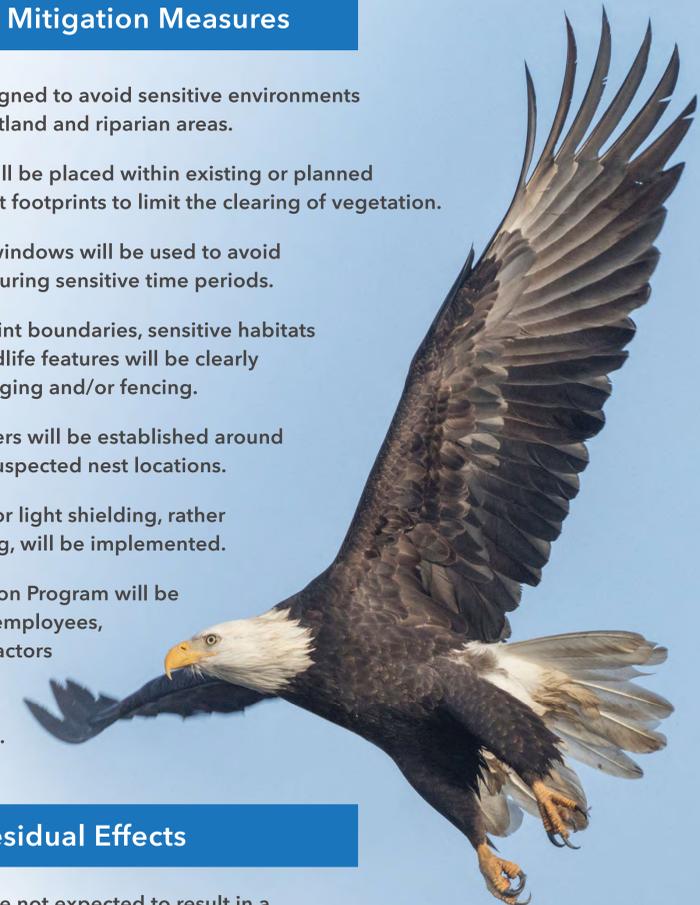
- The Migratory Breeding Birds subcomponent is made up of landbirds and waterbirds. Landbirds present in the RSA include game birds (grouse, ptarmigan), woodpeckers, hummingbirds, and passerines (songbirds). Waterbirds (i.e., waterfowl, riverine birds, shorebirds, loons, grebes) are predominantly found in the lower elevations of the RSA.
- Of the avian species selected to inform the assessment of the Listed Bird Species subcomponent, barn swallow and olive-sided flycatcher were detected during baseline studies.
- Of the raptor species selected to inform the assessment of the Raptors subcomponent, northern goshawk was detected during baseline studies.

## Example Mitigation Measures

- The Project is designed to avoid sensitive environments such as known wetland and riparian areas.
- Project features will be placed within existing or planned Project component footprints to limit the clearing of vegetation.
- Least-risk timing windows will be used to avoid Project activities during sensitive time periods.
- The Project footprint boundaries, sensitive habitats and identified wildlife features will be clearly delineated by flagging and/or fencing.
- “No Activity” buffers will be established around active nests and suspected nest locations.
- Directed lighting or light shielding, rather than broad lighting, will be implemented.
- A Wildlife Education Program will be implemented for employees, visitors, and contractors in accordance with the Wildlife Management Plan.

## Residual Effects

- Residual effects are not expected to result in a change to the Avian Species Valued Component and are not expected to alter its population viability or persistence within the RSA beyond an acceptable level (i.e., the composition and population are expected to remain sustainable and available to contribute to biodiversity and ecosystem function).



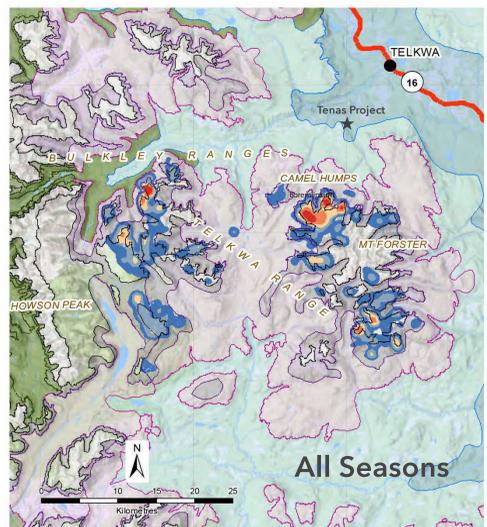
# CARIBOU

# TENAS PROJECT

## Wildlife Valued Component - Caribou Subcomponent

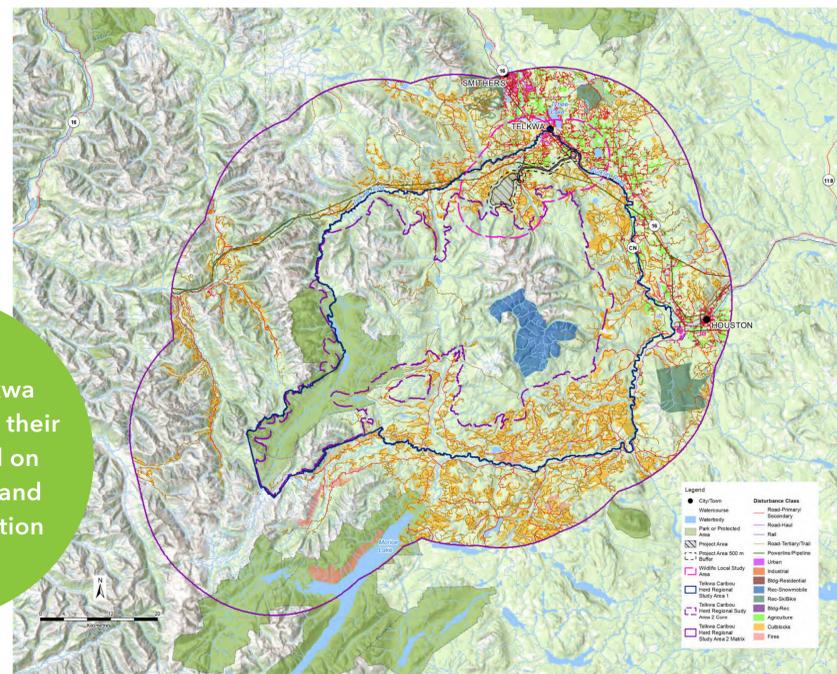
- Telkwa Caribou Herd's range is currently centred on the Telkwa and the Howson mountain ranges.
- Telkwa Caribou used alpine habitat during all seasons and years more than expected based on habitat availability.
- The amount of disturbed habitat currently exceeds the 35% disturbance threshold in most of the Caribou study areas.
- Caribou were not detected within the Project Area during the two years of baseline studies.
- Based on movement analysis Telkwa Caribou are unlikely to use the Project Area and would move through the Wildlife Local Study Area infrequently.
- Telkwa Caribou mortality from predation is the main factor limiting herd growth.

## Seasonal Distribution of Telkwa Caribou Collar Locations, 1994-2018



The current state of the Telkwa Caribou Herd and their range was based on the most recent and relevant information available.

## Existing and Project-related Disturbance



- There is minimal overlap between the Project Area and recorded Caribou movements; therefore the Project will not act a barrier to Caribou movement.
- Direct mortality is unlikely from vehicle or train collisions because the Project Area does not overlap with habitat types selected by Caribou. Indirect mortality of Caribou could occur through:
  - 1) apparent competition with more productive alternative prey species, and
  - 2) facilitated predation by wolves.

## Example Mitigation Measures

- Place Project features within existing or planned Project component footprints to limit the clearing of vegetation.
- Project footprint boundaries, sensitive habitats and identified wildlife features will be clearly delineated by flagging and/or fencing.
- A Wildlife Education Program will be implemented for employees, visitors, and contractors in accordance with the Wildlife Management Plan.
- If caribou are observed within the Project Area, the BC Regional Wildlife Biologist for the Skeena Region will be notified.
- Traffic and access control measures will be implemented.

## Residual Effects

- The Project is expected to minimally add to existing levels of habitat disturbance and is not predicted to increase the herd's risk of being unable to sustain a regional subpopulation.
- While the small herd size makes the Telkwa Caribou more susceptible to changes in mortality, additional mortality attributable to the Project is unlikely due to the spatial separation of the current Caribou range and the Project Area.
- Changes in Caribou movement are unlikely due to the Project.



# CLIMATE CHANGE

# TENAS PROJECT

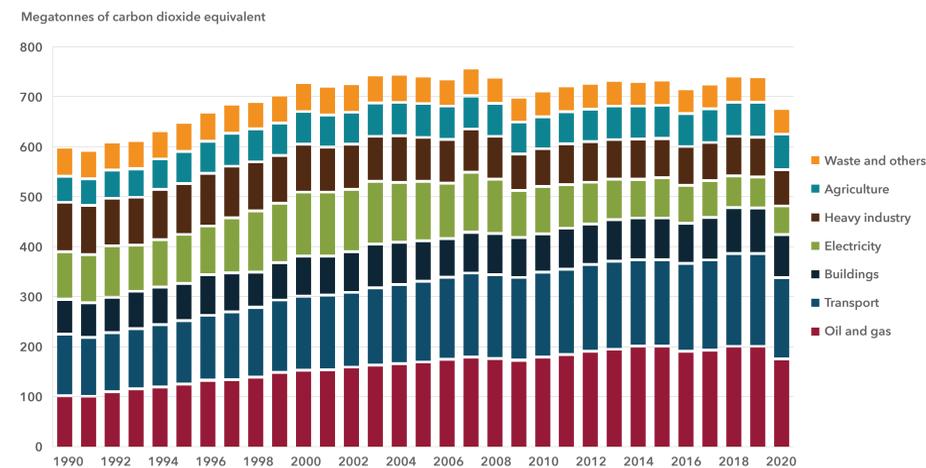
## What is Climate Change?

- Climate change is a global concern, and its effects pose increasingly widespread risks to all industries and activities, including the mining sector.
- Climate change is caused by the increase in concentrations of greenhouse gases (GHGs) in the atmosphere. GHGs trap heat in the Earth's atmosphere, just as the glass of a greenhouse keeps warm air inside.

## Greenhouse Gas (GHG) Emissions

- Canada's emissions in 2020 reached 672 million tonnes of carbon dioxide equivalent (Mt CO<sub>2</sub>e), which made up 1.5% of global GHG emissions.
- Transportation (i.e., road, rail, air, marine traffic), and the oil and gas industry represented the largest contributors.
- In 2020 total GHG emissions in BC were estimated to be 61.7 Mt CO<sub>2</sub>e, approximately 9% of the national total.

## National GHG emissions by economic sector, 1990 to 2020



## Tenas Project GHG Emissions

- Total annual GHG emissions associated with the Project are estimated to be 68,973 CO<sub>2</sub>e (tonnes).
- The largest sources are fuel combustion in mobile mine equipment and fugitive releases of coalbed methane.
- Total Project-related GHG emissions are 0.10% of existing GHG emissions in BC and 0.010% of existing GHG emissions in Canada.

## GHG Emission Intensities for Metallurgical Coal Mines

FACILITY	Equivalent Carbon Dioxide Emissions in metric tonnes (t CO <sub>2</sub> e)	Processed Coal Production in millions of tonnes (Mt)	Green House Gas Intensity (metric tonne of equivalent carbon dioxide per 1000 tonnes of processed coal) (t CO <sub>2</sub> e/kt coal)
Grassy Mountain Coal Mine (proposed)	362,000	3.8	95.3
Fording River Operations (operating)	912,713	10.0	91.3
Roman Coal Mine (proposed)	181,392	2.1	86.4
Line Creek Operations (operating)	301,525	3.5	86.2
Tenas Project (proposed)	68,973	0.8	83.9
Elkview Operations (operating)	654,000	7.9	82.8
Brule Mine (operating)	101,760	2.0	50.9



## Requires A Massive Amount Of Renewable Energy

To displace 2020's 1.4 billion tonnes of blast furnace steel by green steel, roughly 1,367 Site C dams or 1.99 billion 400 watt solar panels, or 1.59 million 2 megawatt wind turbines would be required.

Steel demand is growing annually at 2% so by 2050 the above value will need to double to meet just blast furnace steel.

To meet the Paris Accord goals, all vehicles will need to be electric and all electricity would need to be generated without the use of fossil fuels which would increase the above numbers by 4,467 Site C dams or 6.50 billion 400 watt solar panels, or 5.20 million 2 megawatt wind turbines would be required.

Again by 2050 these values will likely double.

553,672 kilowatts

1Mt Green Steel

## Telkwa Coal Limited has incorporated several mitigation measures in the Project's design and/or operational procedures to reduce emissions including:

- Limit the Project Footprint and Project Area, by clustering project components, aligning linear features, and minimizing the length of haul roads.
- Use centrifuges for dewatering of processed coal, which replaces coal and/or natural gas fuelled processed coal dryers and to reduce GHG emissions.
- Use buses and/or vans for employees and contractors as much as practical.
- A fleet maintenance program will be implemented to support optimal operation of vehicles and equipment. Deficiencies will be corrected and worn parts replaced as soon as practicable.
- Provide funds to assist employees to purchase electric vehicles or related charging equipment and provide funds to assist employees to convert inefficient home wood or oil burning heating systems to lower emission or higher efficiency heating systems.



# ABOUT COAL

## Metallurgical Coal and Production of Steel

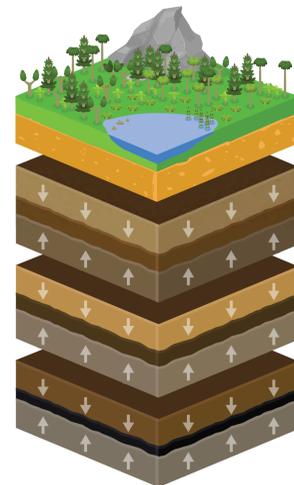
## TENAS PROJECT

### Coal Formation

- Starts when plants store energy from the sun, through photosynthesis.
- Build-up of silt and sediments, along with movements of the earth's crust (tectonic movements) buries plants in swamps and peat bogs.
- Buried swamps and peat bogs subjected to high temperature and pressure conditions and a lack of oxygen which stops the decay process and causes plant material to be transformed into peat and then coal where energy is locked in.

Coal quality is determined by a variety of factors:

- Type of vegetation
- Depth of burial
- Temperature
- Pressure
- Length of time the coal has been forming



Huge forests grew around 300 million years ago covering the earth's surface

Vegetation decays and forms peat

The peat is compressed between sediment layers to form lignite

Further compression forms bituminous and subbituminous coal

Eventually, with enough pressure, heat, and time, anthracite forms

### Coal Mining

Coal is mined from seams using two methods:

- Surface or "open pit" mining, and
- Underground mining.

Excavated coal is separated (processed) from mine rock material to prepare it for commercial use.

The harder the coal is, the higher its energy value and rank. Harder, blacker coal contains more carbon and less moisture and ash than lower grade coal.

The type of coal and its caking ability (coal's ability to be converted into coke which is a pure form of carbon that can be used in basic oxygen furnaces in steel mills) is determined by the coal's rank.

Rank is a measure of the amount of volatile matter, degree of metamorphism, mineral impurities and the coal's ability to melt, swell and solidify when heated.

Canada is the third largest exporter of metallurgical coal, after Australia and the US:

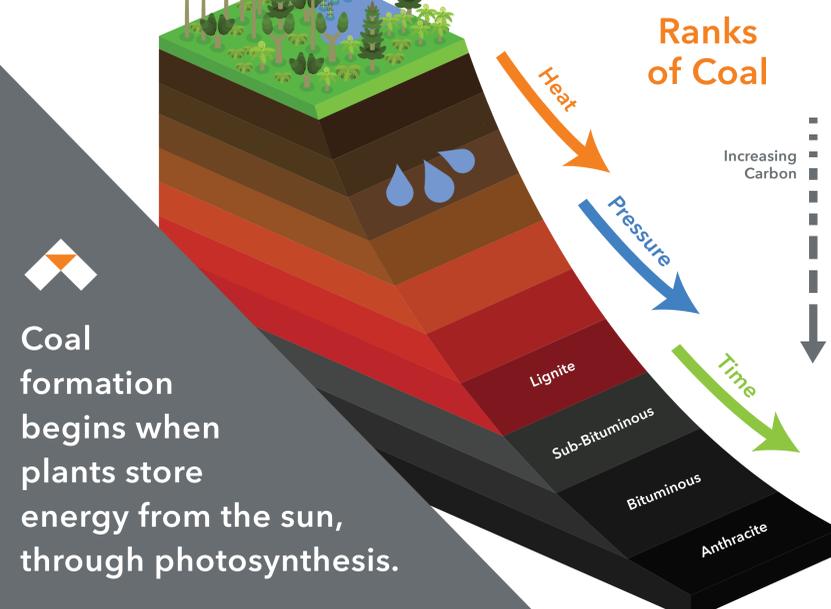
- Alberta and BC produce 85% of Canada's coal based on 2018 data, and
- Canada produced 62.3 million tonnes of coal in 2018 with 49% being metallurgical coal for steel manufacturing.



Canada is the world's third largest exporter of metallurgical coal.



Metallurgical coal differs from thermal coal due to its higher carbon content and its ability to swell.



Coal formation begins when plants store energy from the sun, through photosynthesis.

### Ranks of Coal

Increasing Carbon

### Metallurgical Coal

Differs from thermal coal due to its carbon content, ability to swell, and caking ability:

- Fed into ovens and subjected to high temperature conditions without oxygen to prevent combustion.
- Heated to approximately 1,100 degrees Celsius.
- Removes volatile compounds and impurities to leave pure carbon (coke).
- Coke is then fed into a blast furnace with iron ore and limestone to separate the iron from its ore to create Pig Iron.
  - Pig Iron is further refined to make steel.

Tenas coal is mid-volatile (24 to 29%) semi-soft coking coal:

- Limited global supply of mid-volatile semi-soft coking coal.
- Preferred by steel mills since it fits more uniformly into coke oven blends.
- Current semi-soft coal market is dominated by high-volatile (>32%) semi-soft coals from Australia.



### Metallurgical Coal

Before processing, coal is reduced to coke.

### Iron Ore

70% of steel is produced using the blast furnace process while 30% is produced by the electric arc furnace (EAF) process. EAF uses scrap metal, while the blast furnace method uses coal to produce pig iron and steel through the reduction of iron ore.



### Steel

World steel production was more than 1,690 million tonnes in 2017. Steel is delivered as coils, plates, sections or bars and is a necessary component of transportation, energy generation, and infrastructure.





# FISH AND FISH HABITAT

## TENAS PROJECT

### Telkwa Coal Assessed the Potential Project-related Effects on the Fish and Fish Habitat Valued Component

Valued Component	Subcomponent	Potential Effects Assessed
Fish and Fish Habitat	Fish Habitat	• Change in Fish Habitat
	Fish	• Change in Fish Health

Baseline programs were conducted between 2017 - 2020:

- Fish habitat assessments
- Fish community sampling
- Fish tissue metals sampling
- Watercourse crossing surveys
- Environmental Flow Needs (EFN) assessments
- Fish abundance sampling

#### FISH HABITAT

##### Goathorn Creek

- The lower 15 km of Goathorn Creek is accessible to fish from the Telkwa River.
- Habitat in the upper reaches of Goathorn Creek is more favorable for trout and char species.
- Most smaller tributaries to Goathorn Creek provide poor access for fish and limited potential fish habitat.

##### Tenas Creek

- The mainstem is accessible to fish from its mouth at Goathorn Creek for approximately 16.5 km to a 20 m waterfall.
- Moderate over-wintering and migration habitat.
- More low velocity sections suitable for fry rearing than Goathorn Creek.

##### Four Creek

- Adequate flows to support a small resident Dolly Varden population in its upper reaches.
- Lower reach of Four Creek (to culvert beneath a Telkwa Coal private road) offers potential spawning for fish from Goathorn Creek.

##### Helps Creek

- Habitat potential is primarily for spawning and rearing, while over-wintering habitat appears limited.

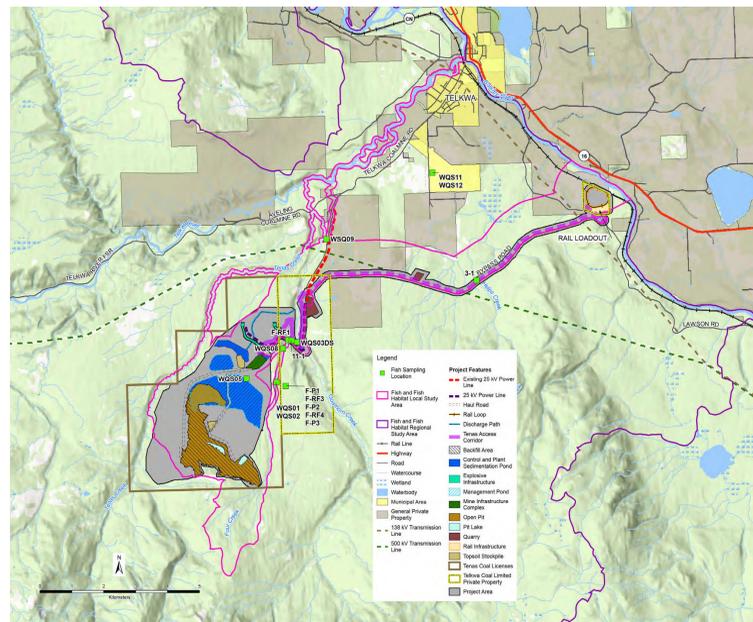
##### Watercourses within Minesite

- Three unnamed tributaries (TN6, TN7, and TN8) to Tenas Creek flow into the Tenas Creek mainstem from the east.
- All three are non-fish-bearing tributaries of Tenas Creek, and none directly support fish or provide fish habitat upstream of their confluence with Tenas Creek.

#### FISH COMMUNITIES

- Fish sampling to determine fish presence and species composition was completed in six watercourses in 2017 and 2018.

### Fish Sampling Locations



Watercourse	Species
Goathorn Creek	Coho salmon, Dolly Varden, Steelhead/rainbow trout
Tenas Creek	Dolly Varden, Steelhead/rainbow trout
Four Creek	Dolly Varden, Steelhead/rainbow trout
Unnamed tributary to Four Creek	No fish caught
Bulkley River	Coho salmon, Lamprey, Steelhead/rainbow trout, Sucker (general), Chinook salmon, Dolly Varden, Longnose sucker, Minnow (general), Northern pikeminnow, White sucker
Telkwa River	Coho salmon, Steelhead/rainbow trout, Mountain whitefish, Dolly Varden

### Example Mitigation Measures

- When feasible, Construction Phase activities will be scheduled to occur within the reduced risk instream work window.
- At watercourse crossings a fish salvage operation will be conducted where instream works or isolation of the work area within the watercourse will occur.
- While clearing and grubbing near watercourses, runoff patterns will be monitored.
- Clear-span bridges will be installed for fish bearing streams with abutments located outside of the bankfill water level of the stream.
- Culverts will be designed, and installation overseen by a qualified professional.
- Where water withdrawal or diversion is required, the necessary approvals will be in place.
- Disturbed banks and riparian areas will be seeded with an approved native grass mixture or planted with shrubby riparian species.

### Residual Effects

- Changes in fish habitat are expected to arise from the diversion of water currently conveyed in tributaries to Tenas and Four Creeks. After implementation of fish habitat offsetting for the change in fish habitat due to the Project, a net gain habitat productivity is predicted.



# GROUNDWATER

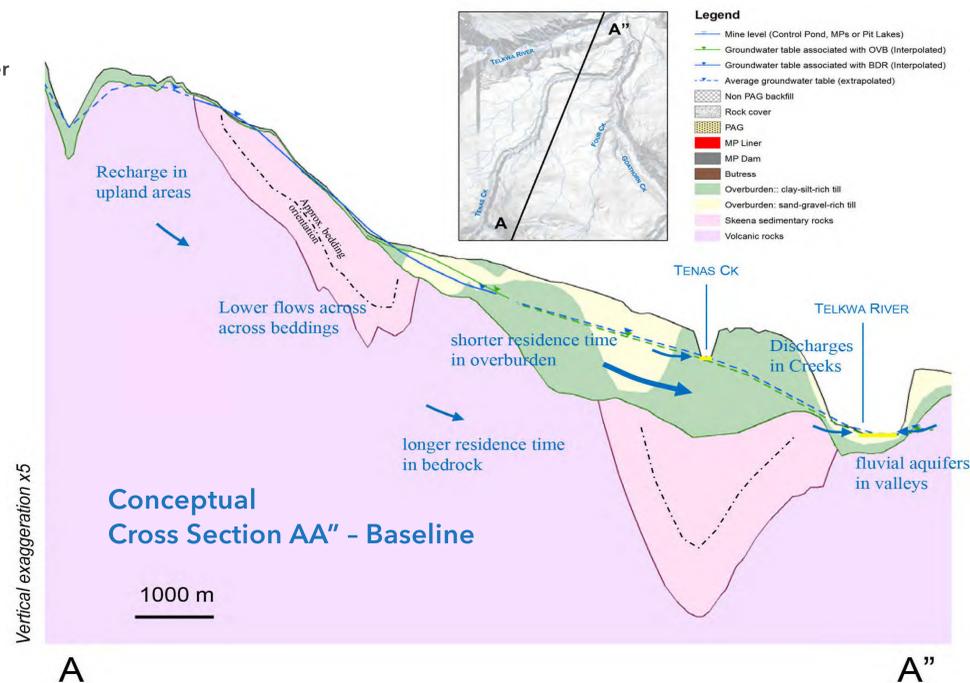
# TENAS PROJECT

## Telkwa Coal Assessed the Potential Project-related Effects on the Groundwater Valued Component

Valued Component	Subcomponent	Potential Effects Assessed
Groundwater	Groundwater Quantity	<ul style="list-style-type: none"> <li>Change in Groundwater Level in Areas of Private Wells</li> <li>Change in Groundwater Discharge Rates to Creeks and Rivers</li> </ul>
	Groundwater Quality	<ul style="list-style-type: none"> <li>Change in Groundwater Quality in Areas of Private Wells</li> <li>Change in Quality of Groundwater Discharging to Creeks and Rivers</li> </ul>

## Groundwater Quantity

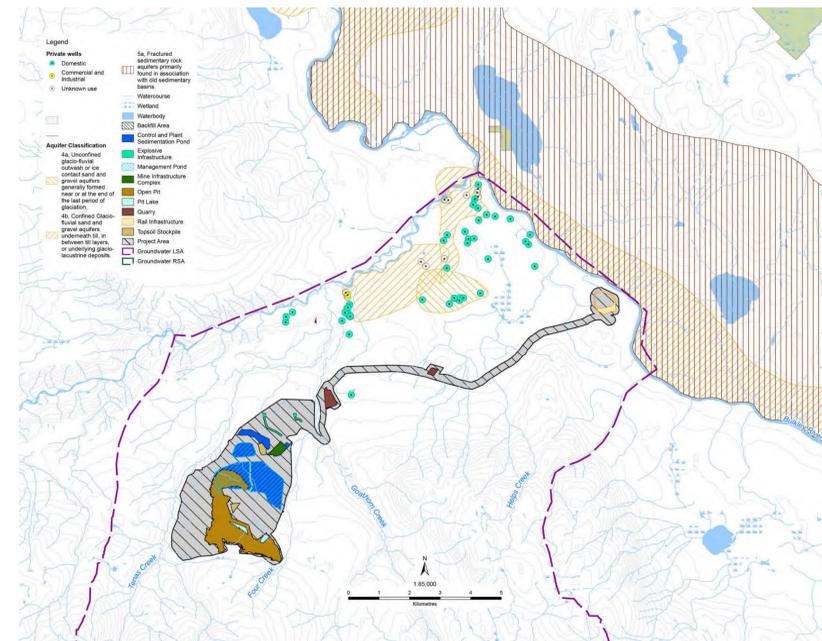
- Conceptually, the groundwater system is divided into two sub-systems: deep bedrock and shallow overburden.
- Groundwater in both systems flows towards the valleys, moving away from the open pit towards Tenas Creek, the Telkwa River, and Goathorn Creek.
- Static water levels are generally less than 2 metres below ground surface (mbgs) in the south part of the Project Area, to more than 20 mbgs in the north part of the Project Area, where overburden thickens.



## Groundwater Quality

- The overburden system is characterised by local unconfined systems with relatively short residence times and low concentrations of dissolved solids, while the bedrock system has a large lateral extent and is characterised by confined flow, relatively long residence times in the subsurface, and higher concentrations of dissolved solids.
- Baseline groundwater samples exceeded the BC Water Quality Guidelines (WQG) for the protection of Freshwater Aquatic Life (FAL) for fluoride, ammonia, and dissolved aluminum, cadmium, chromium, copper, iron, and silver, and the BC WQG Drinking Water Standards (DWS) for fluoride, and dissolved iron, cobalt, manganese, and mercury.
- Five private wells were sampled as part of the baseline program and exceedances of the BC WQG FAL and DWS guidelines for total arsenic, total manganese, total and dissolved iron, total phosphorus, and total organic were observed.

## Aquifers and Private Wells within the Groundwater Local Study Area



## Example Mitigation Measures

- The management ponds, and the Tenas Control Pond have been designed with low permeability liners to minimize the seepage of water from these facilities into the groundwater system.
- Identify and segregate potentially acid generating (PAG) material while mining the open pit, and place and submerge PAG material underwater in management ponds to prevent acid rock drainage (ARD).
- After the Operation Phase is complete, the open pit will be allowed to flood with a combination of contact and non-contact water to raise groundwater levels in the Post-closure phase to existing conditions.

## Residual Effects

- Changes to groundwater levels will be localized and are not predicted to reach any of the private domestic wells affecting their production capabilities. Seepage from mine sources has the potential to reach the groundwater system utilized by private domestic well users but when mixed with background groundwater, no constituent is predicted to exceed the British Columbia Water Quality Guidelines for Drinking Water Standards.
- Changes in groundwater quality and discharge rates to watercourses are not expected to result in an unacceptable change that will alter watercourse integrity within the Regional Study Area.



# HUMAN HEALTH

# TENAS PROJECT

Telkwa Coal assessed the potential Project-related effects on the Human Health Valued Component

Valued Component	Potential Effects Assessed
Human Health	<p>Change in Human Health due to Changes in Air Quality Criteria Air Contaminants (CACs)</p> <p>Change in Human Health due to Changes in Environmental Media Quality</p> <p>Change in Human Health due to Changes in Noise</p>

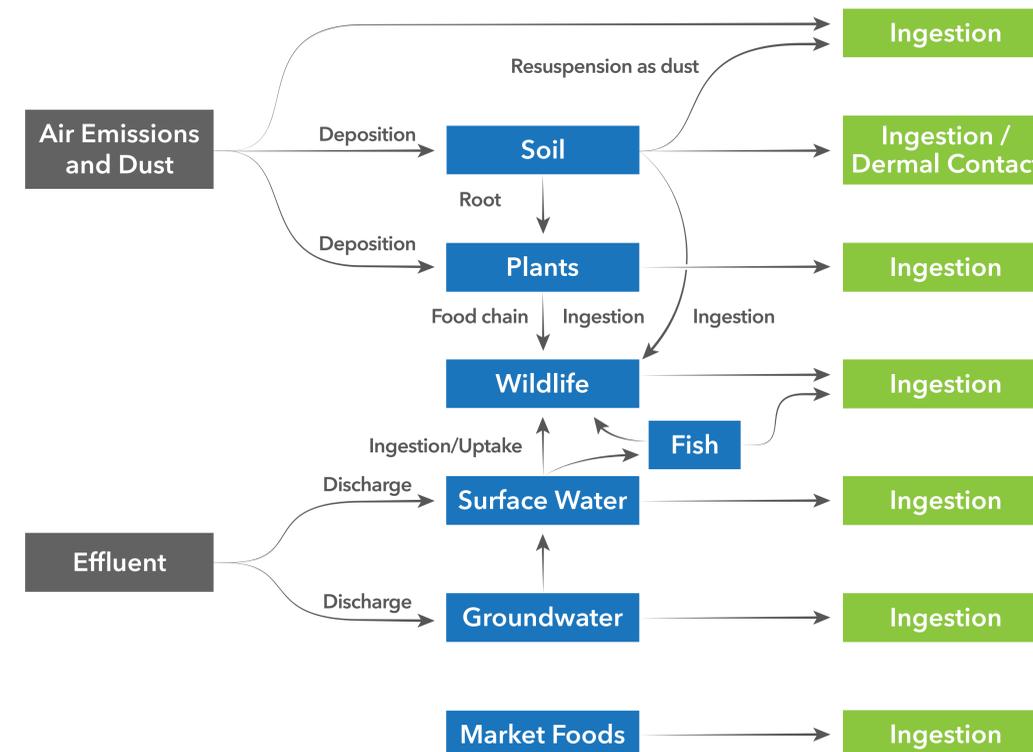
A Human Health Risk Assessment (HHRA) was conducted to support the assessment of potential effects on the Human Health Valued Component.

- Objective of the HHRA was to identify incremental changes that may occur to human health between the Baseline (or Base Case) and future Project Case conditions should the Project go ahead.

- To identify these changes, evaluations of health risk to people who may be exposed to contaminants of potential concern (COPCs) in the Local Study Area (LSA) under both scenarios were completed following standard risk assessment methodology.
- Two categories of people and age groups who have the highest potential for risk were selected for the human health evaluation:
  - Indigenous and non-Indigenous Resident Land Users (toddlers and adults) living year-round in the study area, and
  - Recreational Land Users (toddlers and adults) who visit the LSA.

There are 3 main potential transport pathways through which Contaminants of Potential Concern / Contaminants of Concern may be transferred from the Project to the environment where people could come into contact with them:

- Inhalation of air emissions and dust.
- Deposition of fugitive dust that can then be taken up by plants and thus ingested by people.
- Effluent discharge to surface water and groundwater that can then be ingested by people, and fish and wildlife used as subsistence food.



## Example Mitigation Measures

- Build, maintain, and use the Tenas Access Corridor (TAC) for hauling processed coal to the Rail Infrastructure for the duration of all Project phases.
- Use water and chemical agents on the TAC to reduce fugitive dust emissions, where and when appropriate.
- Use dust suppression agents on the rail cars to reduce fugitive dust generation.
- Monitor actual blast results and implement improvements as required as per the adaptive management.
- Establish and implement a policy prohibiting shooting, hunting, and fishing within the Project Area.
- Spill prevention and response measures will be implemented in accordance with the Fuel Management and Spill Control Plan.
- Hazardous materials will be managed in accordance with the Fuel Management and Spill Control Plan.

## Residual Effects

- The concentration ratio (CR) threshold of 1 is already exceeded in Telkwa under existing conditions and the predicted increase in CR is less than 5%, based on comparison with regulatory guidelines.
- The residual effect of change in environmental media COPC/COC concentrations as a result of the Project is not expected to alter its integrity within the Human Health LSA to an unacceptable level.
- Project-related nighttime noise will be below the permissible sound level of 40dBA and health-based thresholds for percent highly annoyed.



# INFRASTRUCTURE

# TENAS PROJECT



Administration and Mine Dry Building 1



Light Vehicle & Mine Rescue Buildings 2



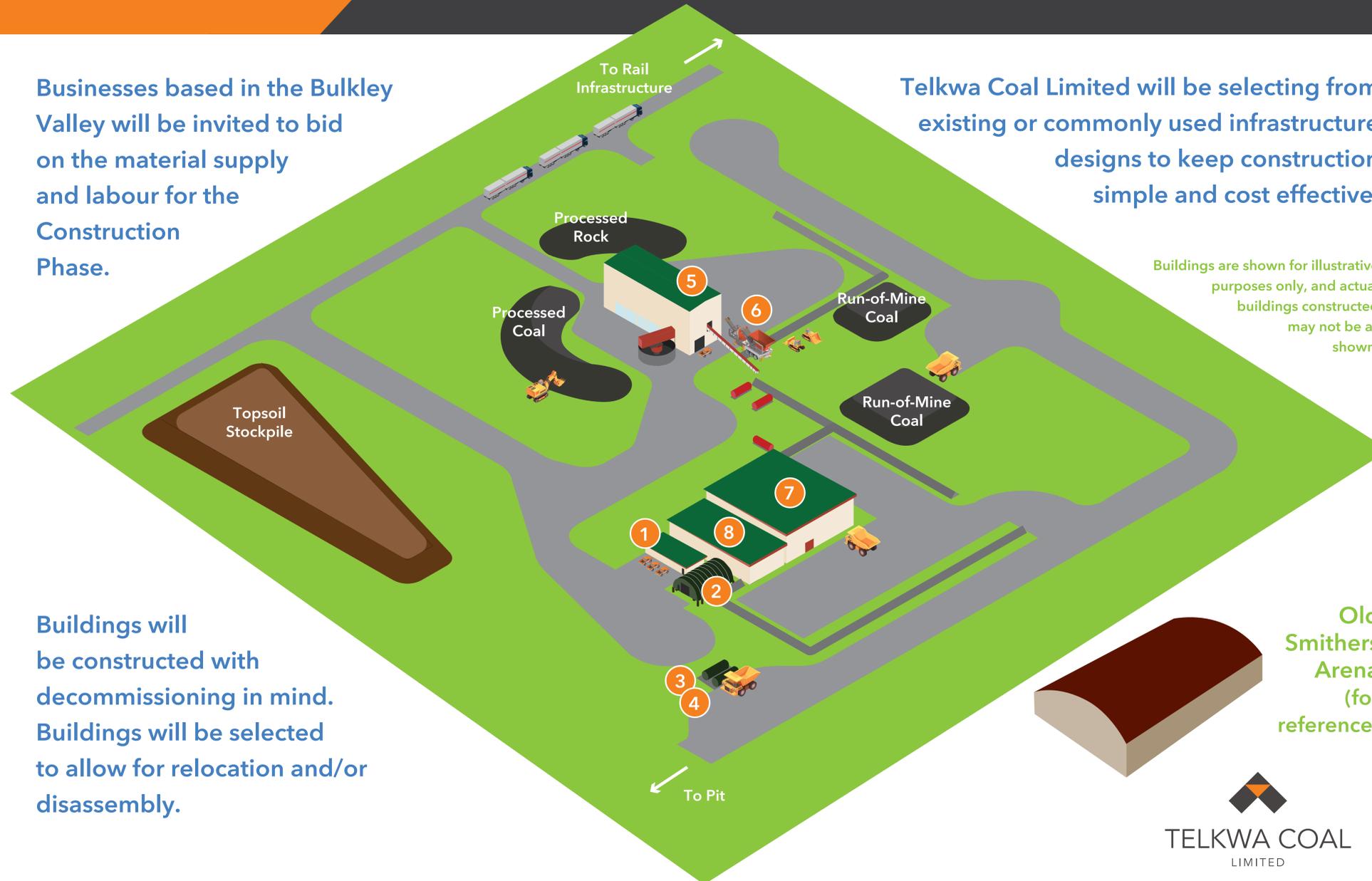
Open Pit Fueling Station (lubricant storage) 3



Open Pit Fueling Station (diesel storage) 4

Businesses based in the Bulkley Valley will be invited to bid on the material supply and labour for the Construction Phase.

Buildings will be constructed with decommissioning in mind. Buildings will be selected to allow for relocation and/or disassembly.



Telkwa Coal Limited will be selecting from existing or commonly used infrastructure designs to keep construction simple and cost effective.

Buildings are shown for illustrative purposes only, and actual buildings constructed may not be as shown.



Coal Processing Plant 5



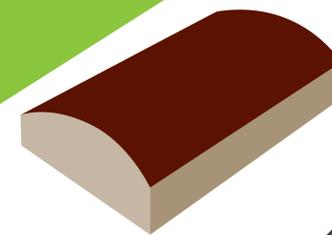
Crusher 6



Maintenance Facility 7



Maintenance Facility (warehouse side) 8



Old Smithers Arena (for reference)



# LAND AND RESOURCE USE

## TENAS PROJECT

### Telkwa Coal Assessed the Potential Project-related Effects on the Land and Resource Use Valued Component

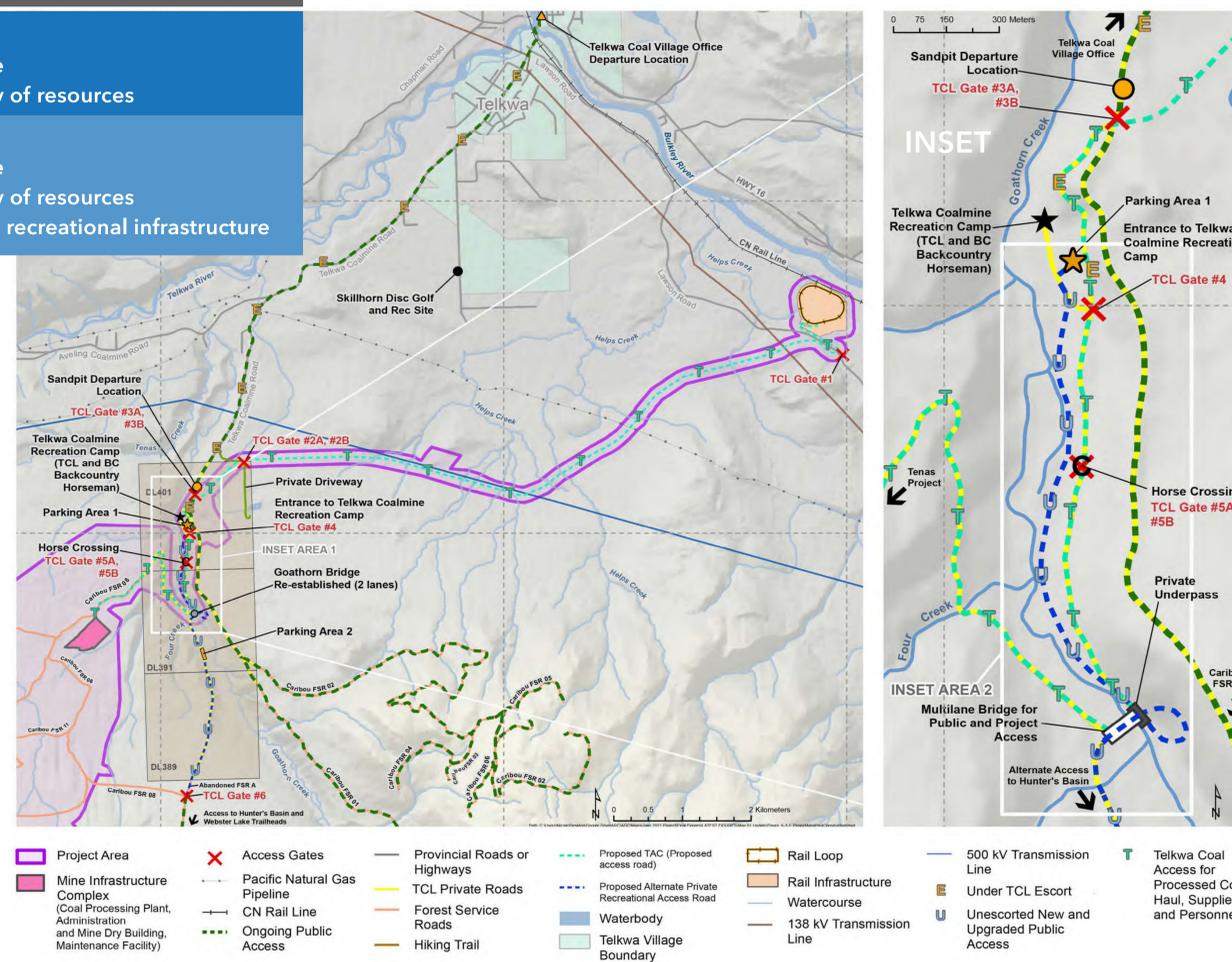
Valued Component	Subcomponent	Potential Effects Assessed
Land and Resource Use	Commercial Land and Resource Use	<ul style="list-style-type: none"> <li>• Change in access</li> <li>• Change in sensory disturbance</li> <li>• Change in quantity and quality of resources</li> </ul>
	Public Recreation Use	<ul style="list-style-type: none"> <li>• Change in access</li> <li>• Change in sensory disturbance</li> <li>• Change in quantity and quality of resources</li> <li>• Change in or interference with recreational infrastructure</li> </ul>

- The Project is located in an area in northwestern BC where there is a variety of tenured and non-tenured land use, private land, parks and protected areas.
- A baseline study was conducted that compiled publicly available information on non-traditional land use, and collected additional information from interviews with land and resource users.

TCL will implement a Public Access Management Plan for the purpose of public, employee, and contractor safety, while still providing for access to recreational and other uses beyond, and if need be, within the Project Area.

Per the Mines and Land Acts requirements, a "No Unauthorized Entry, Hunting, and Fishing" boundary will be established at the outset of the Construction Phase for the Project Area to prevent unauthorized access due to safety considerations for the public and Project personnel.

### Access to Project After Construction Phase for Public and Project vehicles



### Example Mitigation Measures

- Design and build a clear span bridge over Goathorn Creek to provide vehicular access to the Project that will be controlled by Telkwa Coal Limited (TCL).
- An existing forestry service and private road on the west side of Goathorn Creek will be used as the alternate public recreational access trail to Hunter Basin and other recreational sites. TCL will improve this existing road so that 4-wheel drive vehicles can safely use it to access recreational sites.
- TCL will work with Recreation Site and Trails BC and local recreational users and/or recreational groups to develop signage describing access roads, access routes, timing for return trips, maps, education materials, and schedule for escorted access.

### Residual Effects

- The Project is expected to change access to beyond and within the Project Area. However, the change in access is aligned with acceptable land uses in local or regional land use plans, and in some aspects may be improved.
- Sensory disturbance for people associated with the Project is acceptable as noise and emissions are below BC provincial objectives.
- Progressive reclamation will minimize the residual effect of a change in the quality of land and resource use.
- The Decommissioning and Reclamation Phase will return the Project footprint back to pre-Project climate-shifted ecosystem distributions and areas.



# MINING & RECLAMATION

## TENAS PROJECT

### 1 Removal of Vegetation and Topsoil

Trees are harvested.  
Brush is mixed in with topsoil as both are salvaged.  
Salvaged topsoil is stored for future reclamation activities.

### 2 Excavation of Overburden

Loose material (overburden) below topsoil is removed with excavators, dozers, and trucks.  
Overburden is used to build dams, buttresses, and backfill mined out pits, or stored outside of the open pit.

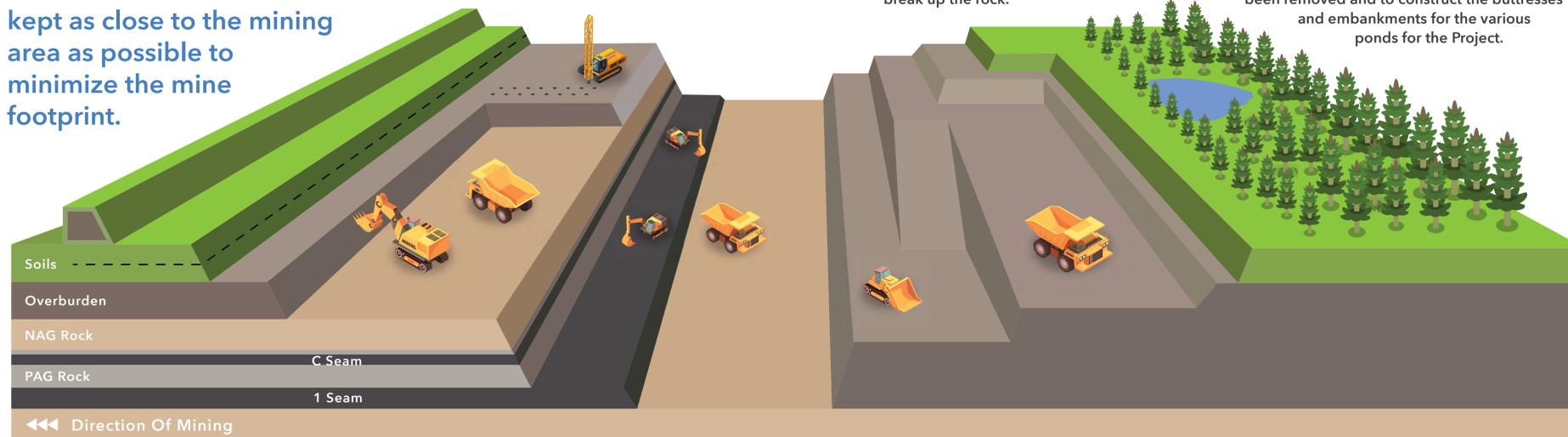
### 3 Drilling and Blasting of Rock

Rock requires blasting to break it into manageable size for loading.  
A drill creates a series of holes in the rock forming a blast pattern.  
Explosives are then loaded into the blast pattern and it is detonated to break up the rock.

### 4 Excavation of Rock

Once the rock is blasted, it is moved out of the way to uncover the coal.  
Potentially Acid Generating (PAG) rock is placed into the management ponds.  
Non-PAG rock is used to backfill areas in the open pit where all the recoverable coal has been removed and to construct the buttresses and embankments for the various ponds for the Project.

Most material moved is kept as close to the mining area as possible to minimize the mine footprint.



### 5 Mining of Coal

Coal is mined with excavators, trucks, and other support equipment.  
Coal is not blasted to reduce the amount of fine particles, and minimize the addition of mine rock.  
Coal is hauled to the Coal Processing Plant to separate the coal from the mine rock.

### 6 Backfill of Completed Mine Areas

Once coal has been removed, the open pit area can be used to backfill non-PAG rock or overburden.  
This keeps the mine footprint as small as possible, and allows progressive reclamation to occur.

### 7 Reshaping of Backfill

Once the backfill material achieves the desired height, it will be reshaped to smooth out the surface to allow topsoil placement, which makes it ready for revegetation.

### 8 Replacement of Topsoil and Vegetation

Once the reshaping is complete, the topsoil is placed on top.  
Native and non-native vegetation species are used to complete the reclamation process.

Only Processed Coal is removed from the Project Area for sale.

### General Mining Information

- Open Pit (surface mining) Operation.
- A Strip Ratio of 3.6 - the number of bank cubic meters (BCM, 1m by 1m by 1m of undisturbed material) excavated per metric tonne of coal recovered.
- Material Movement of between 4,000,000 to 9,000,000 BCM/year for the Project.
- Producing 775,000 to 825,000 metric tonnes per year of metallurgical coal for sale.
- Expected Mine Life (construction to completion of reclamation) is approximately 25 years.
- Expected Footprint of operation (including rail, powerline, and Tenas Access Corridor) of approximately 1,050 hectares (ha).
- Water Retaining Structures for water storage, sedimentation control, and PAG management.
- Conventional Excavator/Truck Operation.

### Materials Moved

**Topsoil** - Surface soil usually including the organic layer in which plants have most of their roots.  
**Overburden** - Glacial sediment overlaying the bedrock. Other common words are Till, Glacial till, or Unconsolidated Material.  
**Bedrock or Rock** - Any naturally occurring solid mass or aggregation of minerals. 3 main types of Rock exist: Igneous, Metamorphic and Sedimentary. Coal is a sedimentary rock.  
**Coal** - Any material deemed economically recoverable for the seaborne marketplace.

### Proposed Equipment Types

- Mining Excavators - 12 cubic metres (m<sup>3</sup>) bucket.
- Motorized Graders - 14 foot (') blade length (equivalent to a Cat 14M).
- Track Dozers - 435hp size (equivalent to a Cat D8T).
- Rotary Drill - 8-inch (") to 10 5/8" Bit size.
- Rigid Frame Haul Trucks - 90 metric tonne size.
- Wheel Loaders - 12.5 m<sup>3</sup> (15 metric tonnes).
- Maintenance Support Vehicles.
- Crew Busses.
- Light Vehicles (Pickup Trucks).



# ATMOSPHERIC ENVIRONMENT - NOISE

## TENAS PROJECT

### Telkwa Coal Assessed the Potential Project-related Effects on the Atmospheric Environment Valued Component

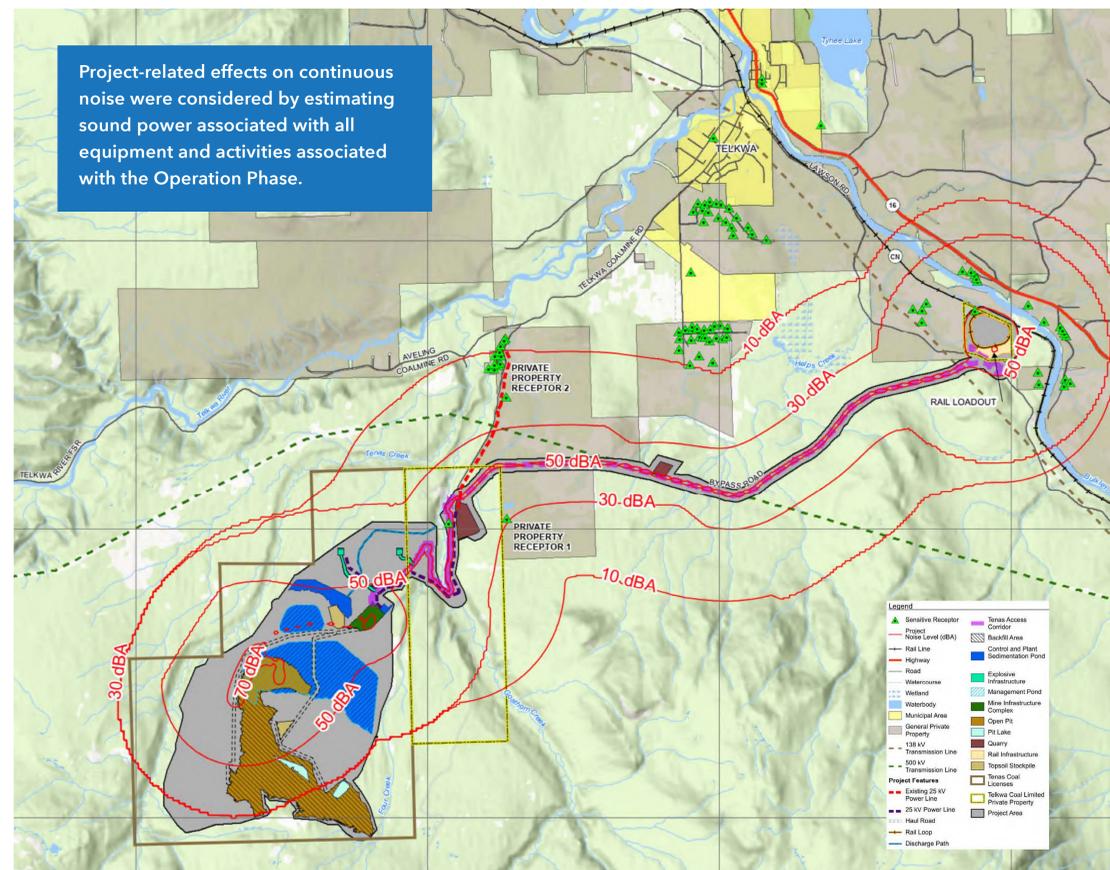
Valued Component	Subcomponent	Potential Effects Assessed
Atmospheric Environment	Noise	Increase in ambient noise levels

Baseline noise monitoring was conducted at 3 locations over a period of approximately 24 hours. Monitoring was repeated 3 times to account for seasonal variability

Average baseline noise measurements, fall 2017-spring 2018

Site	Daytime Noise Level (dBA)	Nighttime Noise Level (dBA)
S-Plant (within proposed area for Coal Processing Plant)	36	23
S-TenasDep (adjacent to proposed open pit)	34	29
S-Rail (within proposed Rail Infrastructure, 340 m from CN rail line)	41	38

dBA=decibel



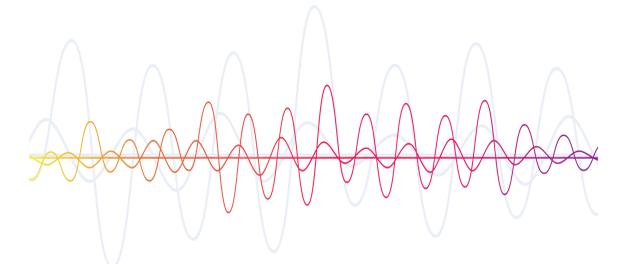
Maximum Project Predicted Nighttime Noise (dBA)

### Example Mitigation Measures

- Build, maintain, and use the Tenas Access Corridor for hauling processed coal to the Rail Infrastructure.
- Use best management blasting techniques.
- Monitor actual blast results and implement improvements as required as per the adaptive management process.
- Use electronic detonators and use noiseless lead lines on the surface.
- Use privately controlled Rail Infrastructure so that there are no train whistles generated from train operations.
- Utilize low train speeds.

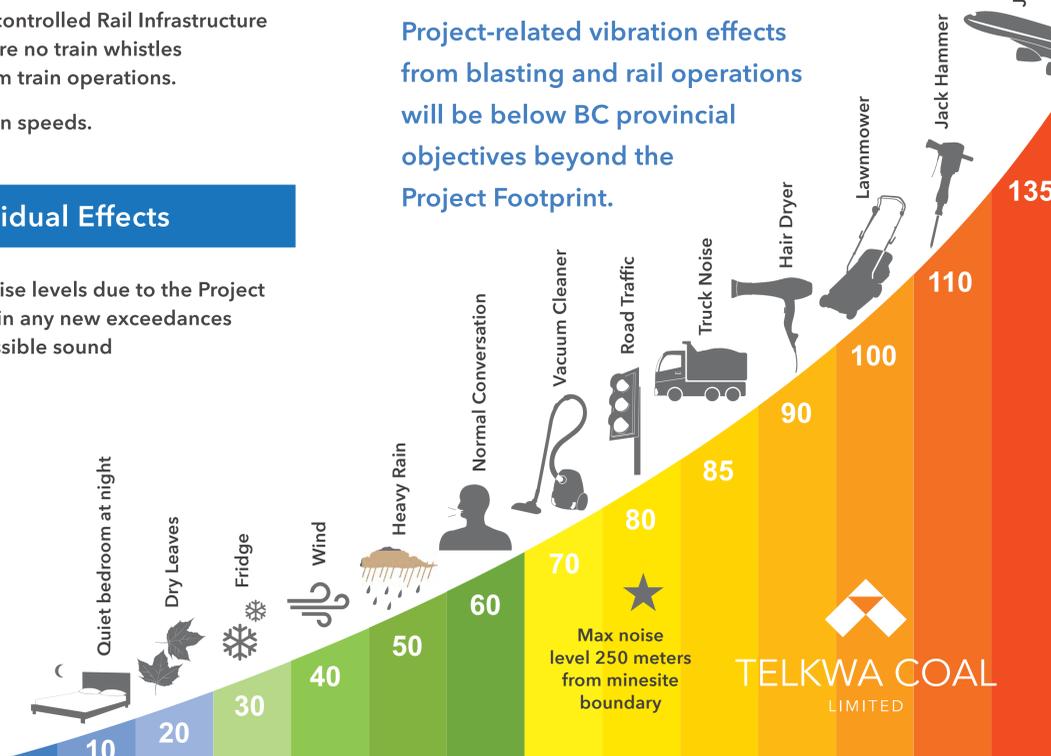
### Residual Effects

- Changes in noise levels due to the Project will not result in any new exceedances of BC's permissible sound level criteria.



Maximum daytime and nighttime noise levels are expected to remain below the BC provincial permissible sound level (PSL) at the nearest receptors to the Project.

Project-related vibration effects from blasting and rail operations will be below BC provincial objectives beyond the Project Footprint.



# RAIL & POWERLINE

## TENAS PROJECT

### Train

- 116 car unit trains with 2 to 3 locomotives.
- Rail Loop is designed to accommodate trains of this length, while keeping the main line clear of Project trains.
- Average rail car capacity is 108 tonnes.
- 62 and 66 trains per year or 1.20 to 1.25 trains per week.
  - Based on train capacity estimates, and proposed mine production rate.

### Train Loading

- Area for loading will be on a straight section of the Rail Loop to allow truck, and loader operations.
- Processed coal is loaded onto trains by front end loader.
- A chemical agent is applied to the top of rail cars to manage dust before the train departs for Prince Rupert.
- A chemical agent will be added to rail cars prior to loading in winter to assist with unloading coal cars at Prince Rupert.
- Rail cars are loaded and weighed prior to leaving.
- Water from the loading area is collected and sediments are settled before the water is released from the Rail Infrastructure Sedimentation Pond to the Bulkley River.

### Rail Infrastructure Specifications

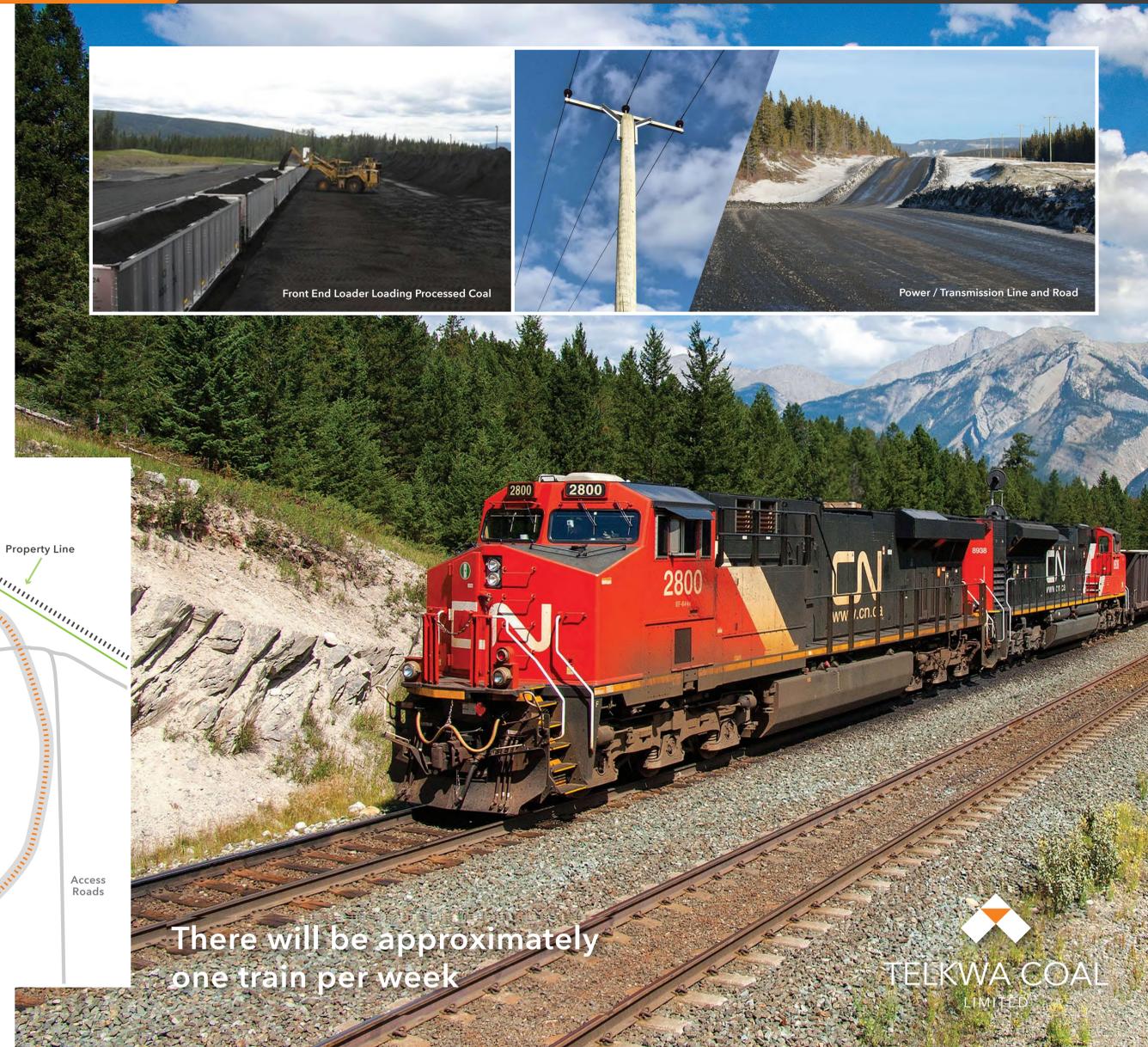
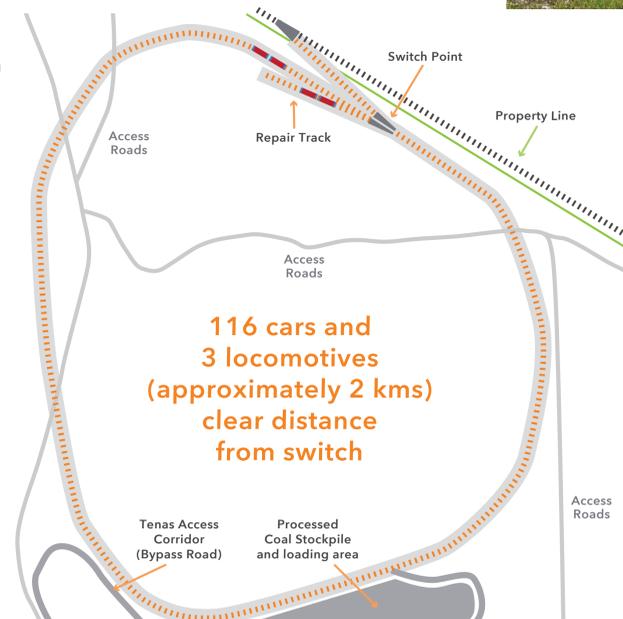
- Maximum Curve of 8%.
- Maximum Grade of 0.3%.
- Dedicated signals on the CN main line to enable more efficient main track operation.
- Repair track for storing cars that are not in working order.
- Length of Rail Infrastructure sufficient to allow rail car loading while keeping the main rail line free of rail cars.

### Processed Coal Transport

- Transporting processed coal from the Project to the port requires both road and rail transport.
  - Processed coal is moved by truck from the Coal Processing Plant via the Tenas Access Corridor to Rail Infrastructure.
  - At Rail Infrastructure, processed coal will be loaded onto rail cars for the journey to Ridley Terminals in Prince Rupert.

### Powerline/Transmission Line

- A 3.6-kilometre 25 kilovolt (kV) powerline is connected to the existing BC Hydro 25 kV distribution system located to the North of the Tenas Open Pit on the East side of the Goathorn Creek Valley.
- Powerline follows existing Telkwa Coal private road and spans across the Goathorn Creek, heading west to the top of the the Goathorn valley and then south to the Project's Mine Infrastructure Complex.
- At Rail Infrastructure, a 25 kV powerline will be extended from the existing BC Hydro 25 kV powerline distribution system.
- All Project powerlines follow BC Hydro standards for spans, pole configurations, wire types, guide wires, and pole materials.
- 67 power pole structures.
- Coal Processing Plant and associated buildings (eg: Maintenance Facility) require a maximum load of 4,000 kilovolt-amps, well within both the Project powerline's design capacity and the existing BC Hydro 25 kV network.
- Periodic monitoring of the power poles will be conducted and maintenance activities carried out as required.



Front End Loader Loading Processed Coal



Power / Transmission Line and Road

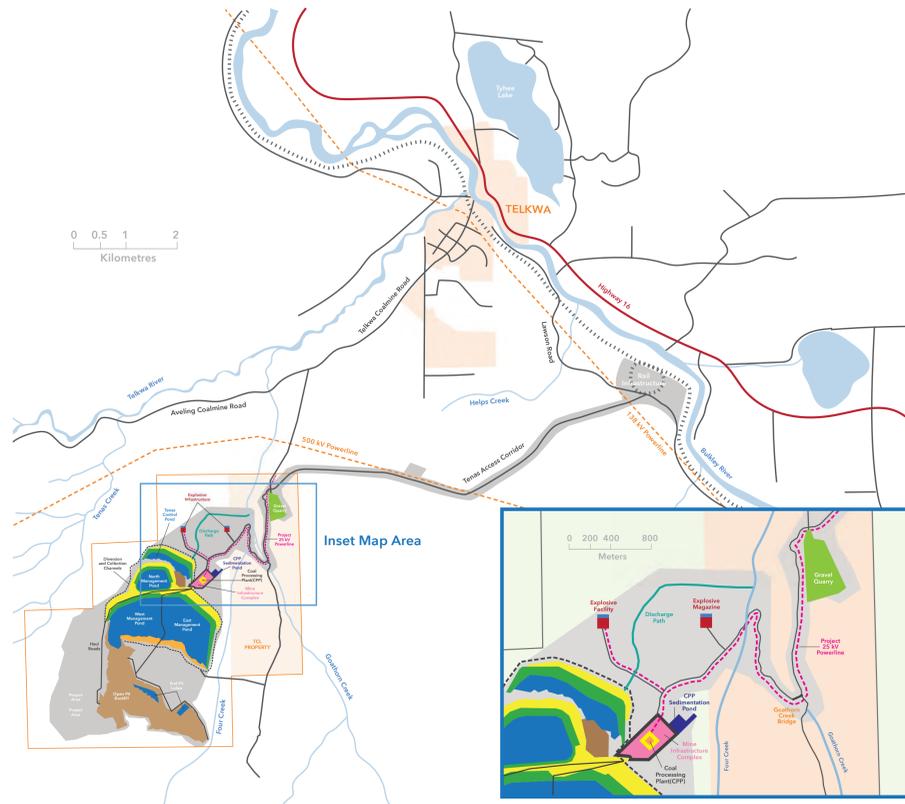
There will be approximately one train per week



# TENAS ACCESS CORRIDOR

Includes Bypass, FSR, and Private Roads

TENAS PROJECT



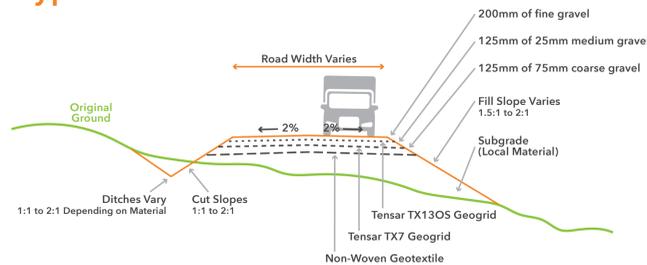
## Culvert Details

- There are 118 culverts, ranging in length from 10 m to 25 m and have a diameter between 500 mm to 1800 mm.
- Made from Corrugated Steel Pipe.
- Designed for heavy flood conditions (1 in 200 year flood event).

## Bridge Details

- The Goathorn Creek Bridge will have a span of 30.5 m and a clearance of 2 m above the 1 in 200 year flood event.
- In addition, there will be eight clear span crossings, which will be comparable to forestry standard crossings. Their average spans will be about 15 m, with a clearance of 0.5 m above the 1 in 200 year flood event.
- Two types of bridge crossings will be used:
  - Concrete slabs, and
  - Steel/concrete composites.
- Use either pile or spread concrete footings.
- Designed to carry a 110-tonne dynamic load of a super B-train truck.

## Typical Road Cross Section



## Road Details

- 6 m wide for single lane portions of the access road.
- 10 m wide for double lane sections and pullouts.
- Maximum grade of 8% for loaded/empty processed coal trucks.
- Water management suitable to the specific terrain.

## Purpose of Fence

- To reduce potential interactions between livestock and mine traffic on the Tenas Access Corridor within existing grazing licenses.

## Fence Details

- Uses a combination of barbless and smooth wire to prevent animal injuries.
- Treated wood fence posts for long life.
- High visibility PVC on top wire to improve visibility.

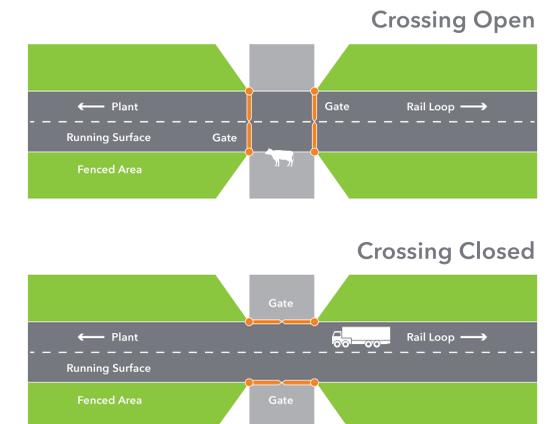
## Public Access Considerations

- Gates at Lawson Road to maintain public safety.
- Gates at intersection of TCL private road, private driveway, entrance to the Telkwa Coalmine Recreation Camp and the Horse Crossing.

## Typical Fence Cross Section



## Livestock Crossings



Community feedback from early engagement drove the decision to build the Bypass portion of the TAC at the outset rather than later in the Project's life.

- Telkwa Coal Limited (TCL) access road leaving the minesite follows the existing Forest Service Road (FSR) and then a TCL private road down into the Goathorn Creek valley.
- Crosses Goathorn Creek over a new bridge and continues up a TCL private road towards the Telkwa Coal Mine Road.
- Moves overland along private property boundaries to the 500 kilovolt (kV) powerline.
- Follows the 500 kV powerline for 2 km, then continues overland to the northeast, following the natural grade down to the Rail Infrastructure.
- Crosses Lawson Road approximately 7 km from the village of Telkwa.

# ABOUT SELENIUM

# TENAS PROJECT

## About Selenium and Mining

- Is a naturally occurring element in the earth's crust and an essential micro-nutrient for all organisms, including people, animals and plants.
- Exists in both organic and inorganic forms.
- In its organic form, can be harmful in high concentrations: in particular, for egg-laying animals such as birds, fish, and amphibians.

**Selenium is a naturally occurring element in the earth's crust.**

During mining, the surface area of mine rock increases as it is blasted, crushed and processed. Exposure to oxygen allows any selenium contained in the rock to be more easily dissolved in water.

In its inorganic form, little of this selenium can be taken up by large aquatic organisms. However, the selenium can be absorbed by the smallest water organisms, such as algae, and converted to an organic form. The algae are then consumed by small invertebrates, who are in turn consumed by fish and aquatic birds. At each stage in this food chain, selenium increases in quantity, in a process known as bioaccumulation.

At the top of the food chain, under certain conditions, organic selenium can have negative effects on egg-laying animals, especially the offspring of adults that are exposed.



Brazil nuts contain selenium.



Selenium occurs naturally in rock.

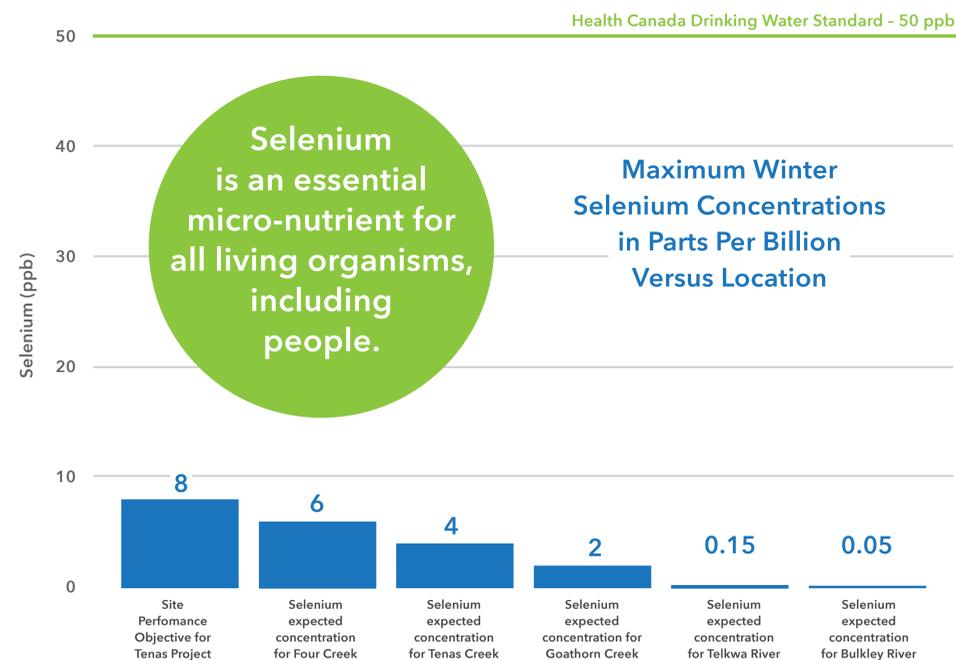
## Evaluating Water Quality and Keeping the Environment Safe

Assessment of water quality starts with finding the background levels of chemical elements that occur naturally in organisms, sediment, vegetation, and the water itself within both the water downstream and upstream of the Project.

To date, no samples in the Tenas Project's baseline studies have exceeded provincial environmental quality guidelines for selenium. Types of baseline study samples include:

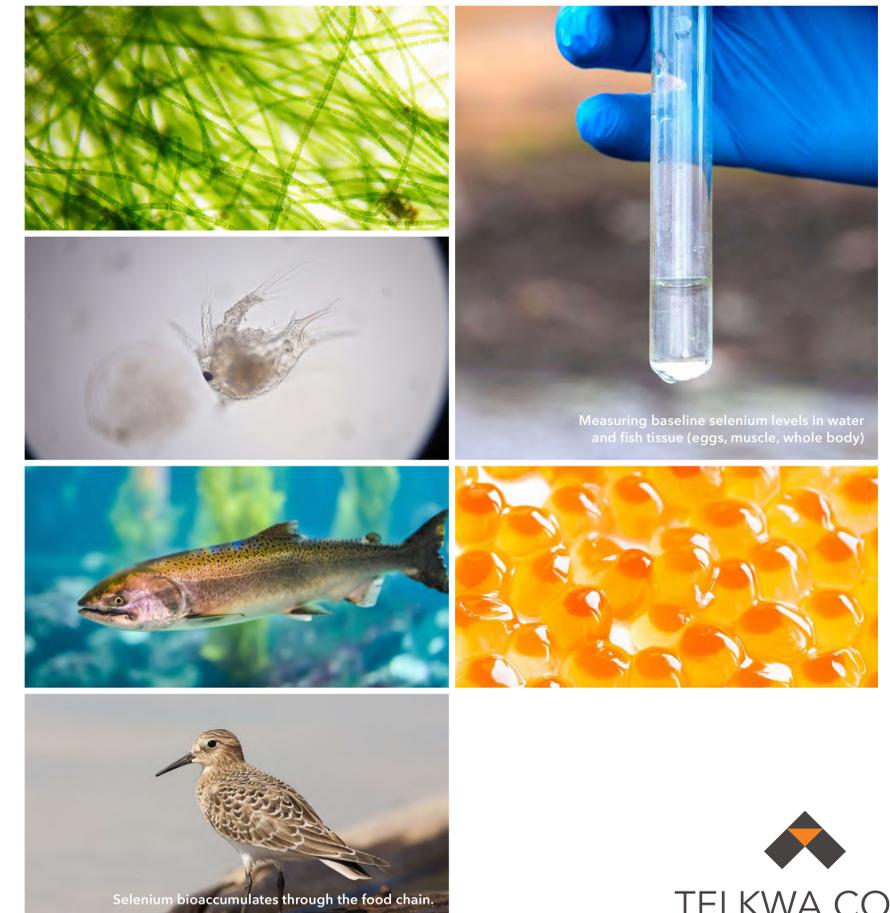
- Groundwater
- Surface water
- Sediment
- Fish tissue
- Vegetation

Telkwa Coal has developed a Selenium Management Plan to address concerns and provide rationale for selenium management based on baseline data, predictions from water quality modelling, selenium bioaccumulation modelling, and site-specific benchmark development.



## Control Strategies

Telkwa Coal's in-depth understanding of selenium, the mineral characteristics of the mine rock at the Tenas mine site, combined with how the mining process changes those characteristics allows us to plan ahead, before we begin operations.



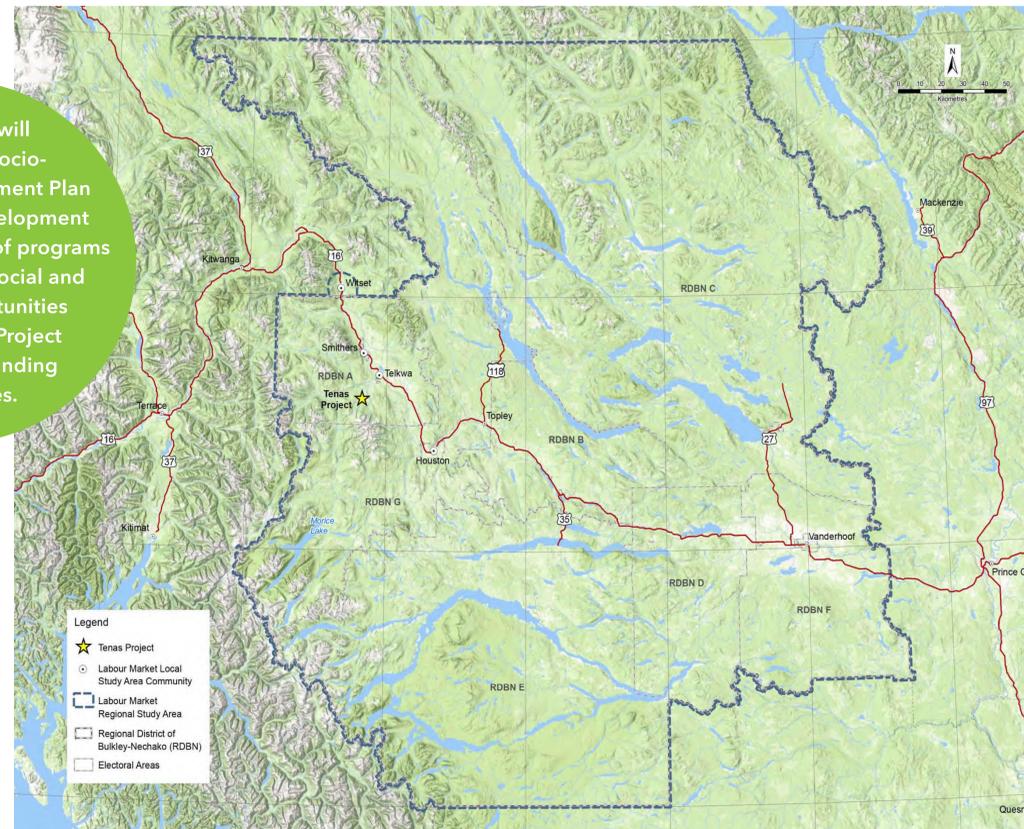
# ECONOMIC & SOCIAL VALUED COMPONENTS

## TENAS PROJECT

### Telkwa Coal Assessed the Potential Project-related Effects on the Following Economic and Social Valued Components

Valued Component	Subcomponent	Potential Effects Assessed
Labour Market	n/a	<ul style="list-style-type: none"> <li>• Increase in competition for skilled local and regional workforce</li> <li>• Increase in labour cost</li> <li>• Barriers to Indigenous employment and participation in Project-related economic benefits</li> </ul>
Economic Development	Local Business and Industry	<ul style="list-style-type: none"> <li>• Decrease in economic diversity</li> <li>• Change in the capacity of local or regional businesses to supply goods or services</li> <li>• Change that affects development plans or strategies of government</li> <li>• Decrease in local and regional marketable timber</li> <li>• Decrease in local or regional tourism</li> <li>• Decrease in economic activity during Decommissioning and Reclamation Phase</li> </ul>
Demographics	n/a	<ul style="list-style-type: none"> <li>• Change in population and related demographic factors</li> </ul>
Infrastructure and Services	<ul style="list-style-type: none"> <li>• Housing and Accommodation</li> <li>• Community Infrastructure and Services</li> <li>• Transportation</li> </ul>	<ul style="list-style-type: none"> <li>• Increase in cost or decrease in availability of housing and accommodations</li> <li>• Increased demand for community infrastructure and services</li> <li>• Change in use of roads and related increases in traffic</li> </ul>

Telkwa Coal will implement a Socio-economic Management Plan to address the development and implementation of programs that enhance the social and economic opportunities for those in the Project Area and surrounding communities.



- Local Study Area communities included Telkwa, Smithers, Houston and Witset. Based on their proximity to the Project, it was anticipated that residents of these communities are likely to be directly influenced to varying degrees by socio-economic effects.
- The Regional Study Area (RSA) was defined to encompass the Regional District of Bulkley Nechako (RDBN) and the community of Witset. Within the RSA, Project-related effects on are expected to be less direct but provide regional context.



### Example Mitigation Measures

- Identify opportunities for direct employment and procurement of Project goods and services acquired from the RSA.
- Provide training, targeting entry-level positions and on-the-job training where previous experience is not necessary.
- Establish an Indigenous Cultural Awareness Induction program for employees, visitors, and contractors in collaboration with the Wet'suwet'en.
- Provide incentives and inducements to workers to move permanently to a location within the RSA and require the Project management team to reside in the RSA to benefit the local and regional economy.
- Telkwa Coal will fund at least 1 full-time position at a government approved child care facility in the RDBN, and at least 1 full-time position at an approved child care facility operated by an Indigenous group in the region.
- Use buses and/or vans for employees and contractors as much as practical to reduce the risk of traffic incidents.

### Residual Effects

- Low to moderate magnitude residual effects of the Project on the Labour Market, Economic Development, Demographics, and Infrastructure and Services Valued Components are predicted, primarily during the Construction and Operation phases.



## Telkwa Coal Assessed the Potential Project-related Effects on the Surface Water Valued Component

Valued Component	Subcomponent	Potential Effects Assessed
Surface Water	Surface Water Quantity	<ul style="list-style-type: none"> <li>• Change in Mean Annual Discharge (MAD)</li> <li>• Change in Seasonal Flow Distribution</li> <li>• Change in Low Flows and High Flows</li> </ul>
	Surface Water Quality	<ul style="list-style-type: none"> <li>• Change in Modelled Parameter Concentrations</li> <li>• Change in Other Measurable Water Quality Parameters</li> </ul>

Baseline studies for the Project conducted in 2017 through 2020

### Surface Water Quantity

- Tenas Creek, Four Creek, Goathorn Creek, Telkwa River, and the Bulkley River were selected as representative drainages.
- Streamflow regime is snowmelt-dominated with the majority of runoff occurring in the spring and early summer due to melting winter snowpack. This is typically followed by a period of low flow throughout the late summer and early fall when the inputs from snow have diminished.
- In the fall, short duration high intensity rain events may produce substantial high flow events with naturally elevated concentrations of suspended particles.
- Annual low flows occur during the winter.

### Surface Water Quality

- The Telkwa and Bulkley Rivers have exceeded the BC water quality guidelines for total and dissolved aluminum, total iron, and total copper.
- Goathorn and Tenas Creeks have exceeded the BC water quality guidelines for total and dissolved aluminum, total iron, and total copper.
- Four Creek has exceeded BC water quality guidelines for dissolved and total aluminum and dissolved and total iron.

### Site Performance Objectives (SPOs)

A site performance objective (SPO) is a 'predictive' site-specific water quality objective for a quantifiable receiving environment parameter or attribute, developed by a qualified professional, using a rigorous scientific process, with the intent to guide management decisions and mitigation actions for a regulated activity at a specific location (e.g., compliance with an effluent limit at a final discharge point).

SPOs for the Project were developed considering:

- That they must not result in exceedance of the provincial drinking water guidelines for human health.
- That they must not result in the creation of a contaminated site as defined under the BC Contaminated Sites Regulation.
- The use of an adaptive management approach in a manner that ensures ongoing monitoring and protection of key values and interests related to water quality.

### Example Mitigation Measures

- Monitor seepage, groundwater, and surface water levels, and quality/quantity downstream and upstream of the Project as per the monitoring programs set up in the Minesite Water Management Plan.
- Establish trigger levels that require the implementation of contingency mitigations measures described in the Discharge Management Plan.
- Monitor and control water discharges from Tenas Control Pond to a tributary of Goathorn Creek based on downstream water flow rates and water quality to meet in-stream guidelines and flow requirements during the Operation, and Decommissioning and Reclamation phases.
- Provide results of water quality sampling and quantity monitoring via the BC Ministry of Environment and Climate Change Strategy website.
- Maximize the use of contact water for all Project water needs (i.e., use contact water for process water for the Coal Processing Plant and equipment washbays before withdrawing additional water from the Project Area).

### Residual Effects

- The Project is expected to change summer and winter streamflow from baseline conditions in sections of Four and Tenas creeks, however the potentially affected watercourses represent <1.0% the Regional Study Area (RSA).
- Potential residual effect on Surface Water Quality for both the change in parameter concentrations and the change in other measurable parameters is limited to within the watersheds of Four and Tenas creeks, occupying 2.0% of the RSA.
- Residual effects are not expected to alter the integrity of the Surface Water Valued Component within the RSA beyond 5% which is deemed acceptable.



# TERRAIN AND SOILS

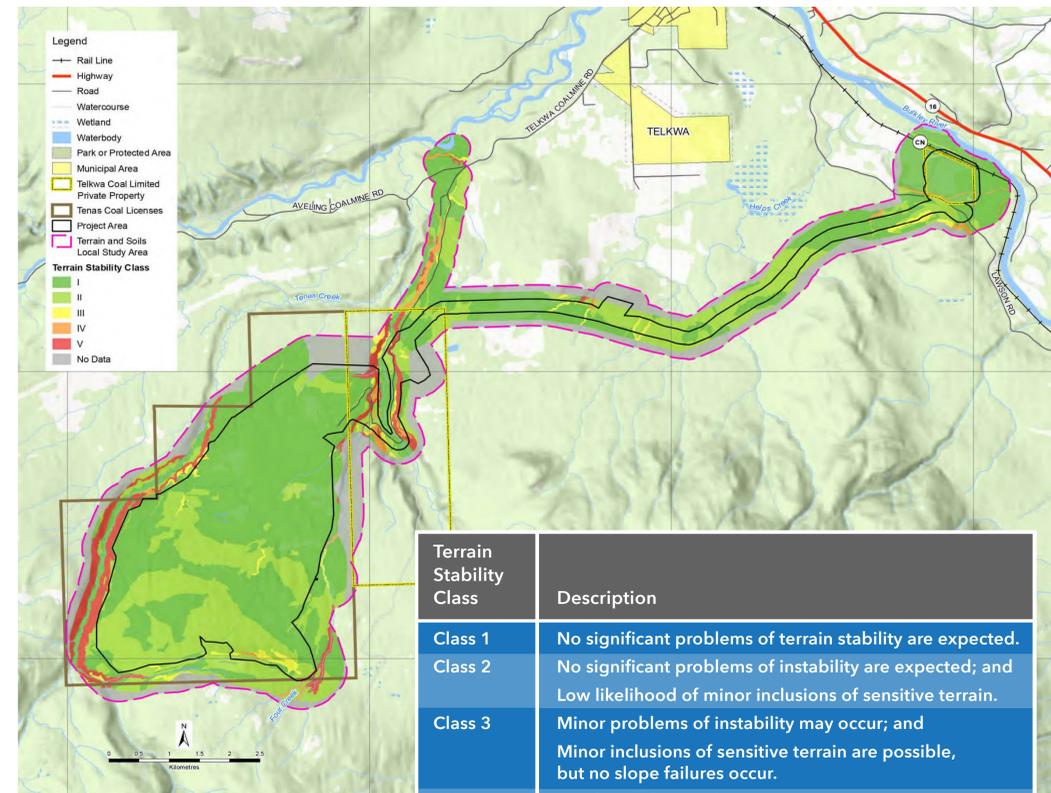
## TENAS PROJECT

### Telkwa Coal Assessed the Potential Project-related Effects on the Terrain and Soils Valued Component

Valued Component	Subcomponent	Potential Effects Assessed
Terrain and Soils	Terrain Stability	Changes to terrain from vegetation and rock removal
	Soil Quality	Loss of soils and changes to soil quality due to changes in chemical and physical characteristics

Initial interpretations of existing conditions began in early 2017 using spatial and attribute data. Field data collection for initial reconnaissance began in 2017, followed by more extensive field reconnaissance and soil sampling in 2018, with 2019 field studies guided by preliminary 2018 terrain polygons.

- Surficial materials are predominantly glacial deposits.
- 95% of the Project Area is generally characterised by a combination of flat, undulating, and gently sloping upland terrain consisting of well drained glacial till, flat to ridged gravel deposits; upland alluvial fans and thin veneers along small streams; and thin organic deposits in depressions.
- 75% of the Project Area has low to moderate surface erosion potential.
- Very low to very high fluvial hazards, depending on location within the Project Area.
- 70% of the Project Area has fair-to-good soil salvage potential rating.
- 16% of Project Area in Agricultural Land Reserve.



Terrain Stability Class	Description
Class 1	No significant problems of terrain stability are expected.
Class 2	No significant problems of instability are expected; and Low likelihood of minor inclusions of sensitive terrain.
Class 3	Minor problems of instability may occur; and Minor inclusions of sensitive terrain are possible, but no slope failures occur.
Class 4	Problems of instability are expected; marginally stable slopes and sensitive terrain exists; and Natural landslides are rare, but terrain conditions are similar to nearby unstable slopes or evidence of small-scale instability or excessive steepness exists.
Class 5	Significant problems of instability are expected; Active or recurrent landslides initiate within mostly steep terrain; and Sensitive terrain is common, such as steep-sided gullies; site with seasonally high soil pore water pressure; undercut tall stream banks.
Undefined	No data.

### Example Mitigation Measures

- To the extent possible, the Project has been sited on stable and gently sloping terrain. Project components directly associated with the mine will be constructed to design-specifications and follow applicable management plans, regulatory requirements, and BMPs.
- All temporary surface soil and overburden stockpiles will be vegetated to minimize the potential for erosion and sediment generation and losses of surface soils.
- The reclaimed landscape will be shaped and contoured to achieve variations of slope steepness, slope length, aspect, and form to assist in creating landform diversity.
- Surface soils and suitable overburden will be salvaged and stockpiled separately.
- Sediment and erosion control measures will be implemented.

### Residual Effects

- Changes in morphology are mostly expected to be within the limits of natural variation, but some features are at the limits of natural variation due to the development of novel/non-natural landscape attributes. No expected changes in the net terrain stability rankings are expected to occur due to the Project.
- Changes to Soil Quality are expected to be within the natural range of variation and end-land use capability, with a discrete potential to be at the limits of the natural range of variation depending on the topsoil salvage potential.



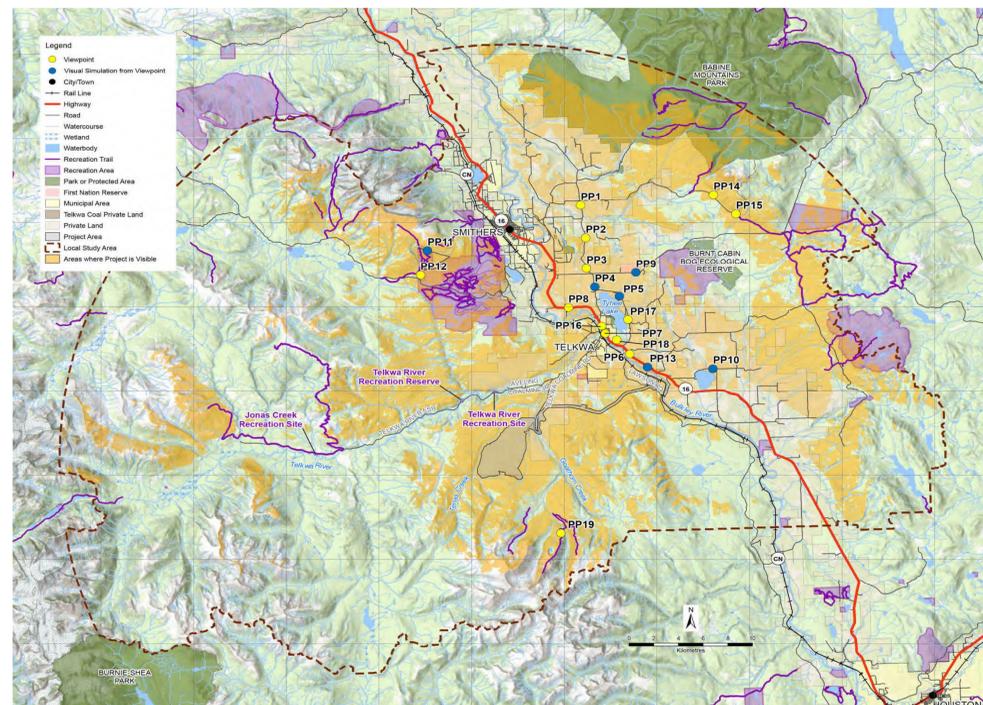
# VISUAL RESOURCES

# TENAS PROJECT

## Telkwa Coal Assessed the Potential Project-related Effects on the Visual Resources Valued Component

Subcomponent	Potential Effects Assessed
Visual Quality	<ul style="list-style-type: none"> <li>Reduction in Visual Quality - Minesite during Active phases (Construction, Operation, and Decommissioning and Reclamation phases)</li> <li>Reduction in Visual Quality - Minesite during Post-closure phase</li> <li>Reduction in Visual Quality - Rail Infrastructure during Active phases</li> </ul>

### Viewpoint and Viewshed Analysis



### Example Mitigation Measures

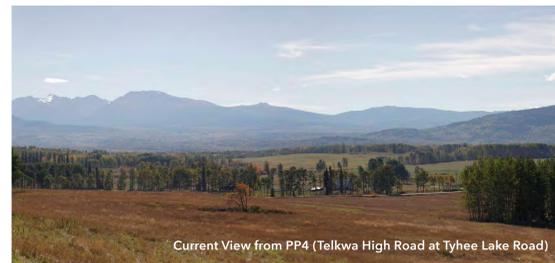
- Cluster Minesite components.
- Place temporary, permanent infrastructure, and other Project components within existing disturbance and limit clearing of vegetation within Project.
- Progressive reclamation of affected areas no longer in use within the Project Area.
- Select tonal values and low chroma colours to paint buildings that create low contrast to background conditions.
- Onsite vegetation screening to hide small, high-contrast features that cannot be painted or otherwise camouflaged, or where it is cost prohibitive to do so.

### Residual Effects

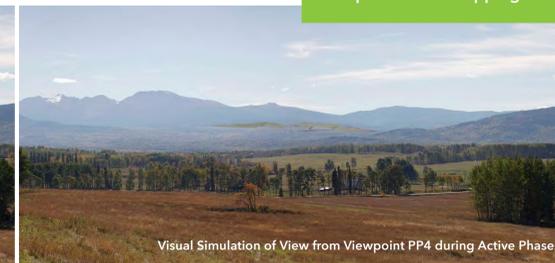
- Mitigations are not expected to be fully effective, therefore there is an expected reduction of Visual Quality during all phases for the Minesite and Active Phases for Rail Infrastructure.
- Only the reduction in Minesite Visual Quality during the Active Phases was rated as Significant.



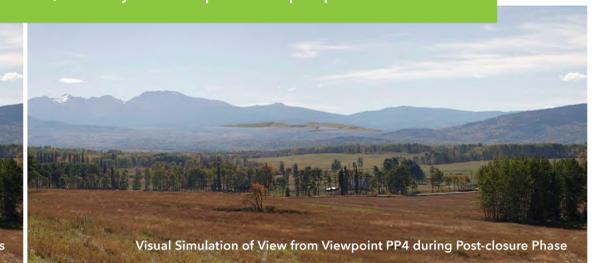
Viewpoint PP4 sits at approximately the same elevation as the Project, and as such has a "head-on" view of the Project components. The Project appears compact, with individual components overlapping each other, and only small strips of the open pit wall visible.



Current View from PP4 (Telkwa High Road at Tyhee Lake Road)



Visual Simulation of View from Viewpoint PP4 during Active Phases

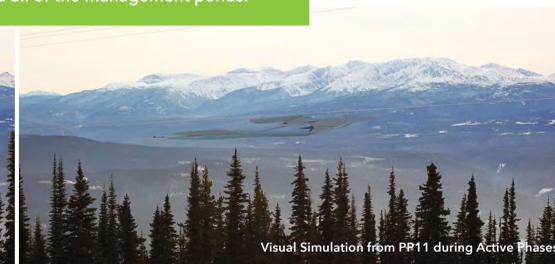


Visual Simulation of View from Viewpoint PP4 during Post-closure Phase

Viewpoint PP11 has an elevated view of the Project, and as a result, the visual effect of the components is magnified. Though 20 km distant, the entire layout of the Project is visible, including substantial portions of the open pit wall and all of the management ponds.



Visual Simulation from PP11 (Hudson Bay Mountain Resort Main Lodge)



Visual Simulation from PP11 during Active Phases



Visual Simulation from PP11 during Post-closure Phase

# WATER SOURCING & DISCHARGE

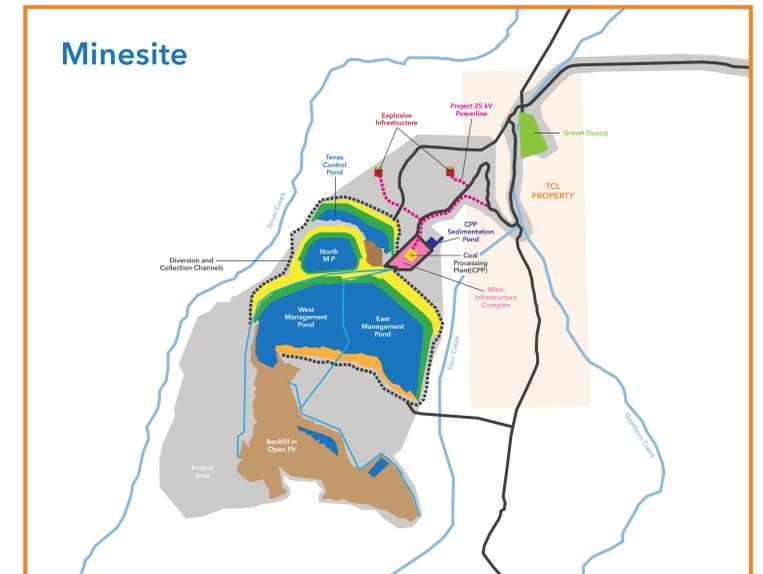
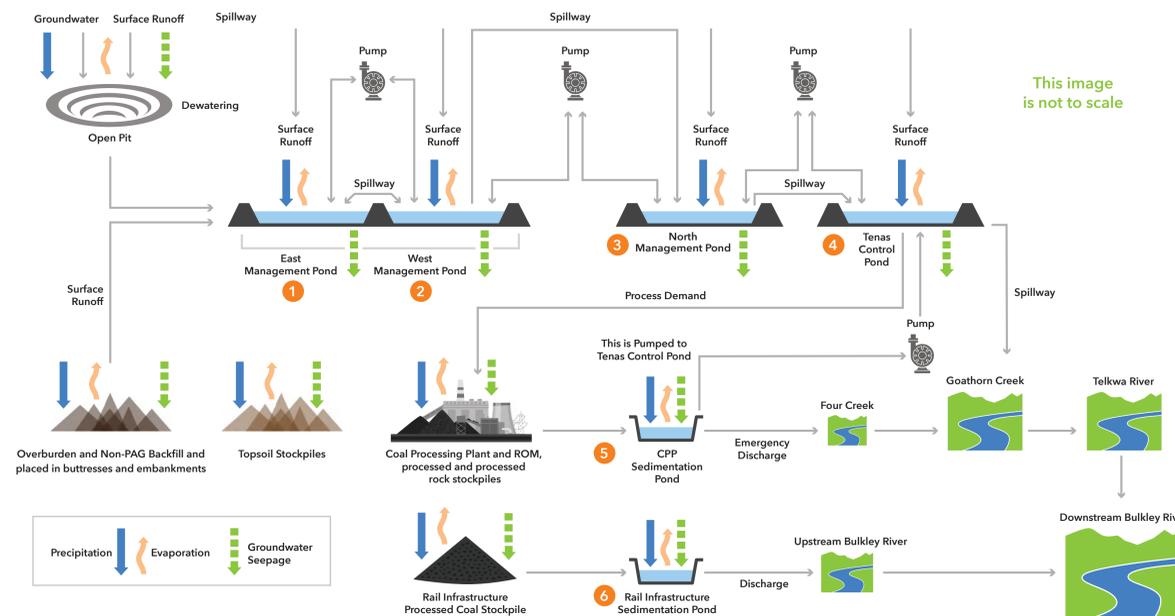
## TENAS PROJECT

### Water Management Plan

- Water collected on the minesite moves through multiple ponds, from the West and East Management Ponds to the North, and finally to the Tenas Control Pond.
  - This process allows suspended sediment to settle in the multiple ponds.
- Water collected in the Open Pit will move, by gravity or pumping, to the East, West or North Management Ponds.
  - Water in the West or East management ponds can flow or be pumped to each other and flow or be pumped to the North Management Pond.
  - Water in the North Management Pond can flow or be pumped to the Tenas Control Pond or pumped to either of the East and West Management Ponds.
- The Tenas Control Pond is the lowest elevation water management facility in the proposed mine development.
  - Used as a water storage facility and the last sedimentation pond for water that is to be discharged or is pumped for use in the Coal Processing Plant (CPP) and Maintenance Facility.
  - Water in the Tenas Control Pond is tested regularly to monitor water quality, even when there is no discharge.
  - Water is discharged via an existing tributary of Goathorn Creek to Goathorn Creek.
- Water in the Coal Processing Plant (CPP) Sedimentation Pond is pumped to the CPP to be used for process water or pumped to the Tenas Control Pond.
  - The CPP Sedimentation Pond is not forecast to discharge during the Operation phase of the Project.
- The Rail Infrastructure Sedimentation Pond collects contact water from the processed coal stockpiles and loading area and discharges into the Bulkley River via an existing channel.
  - Water in the Rail Infrastructure Sedimentation Pond is tested regularly to monitor water quality, even when there is no discharge.

### Water Sourcing

- Water for the Project will be sourced from precipitation that falls within the Project Footprint (onsite).



### Non-Contact Water

- From areas that have not been affected by mining activities.
- This water will be diverted around mining activities.
- Precipitation that falls outside of the Project is diverted to prevent it from becoming contact water and requiring it to go through Mine Water Management System.

### Water Movement Onsite

- Depending on where precipitation falls on site, contact water is directed and collected in one of six ponds:

- |                         |  |
|-------------------------|--|
| 1 West Management Pond  | 4 Tenas Control Pond                       |
| 2 East Management Pond  | 5 Coal Processing Plant Sedimentation Pond |
| 3 North Management Pond | 6 Rail Infrastructure Sedimentation Pond   |

### Contact Water

- Water that flows through the active mine area is called contact water.
- Contact water is collected and directed to management, control or sedimentation ponds where it is tested prior to discharge to the receiving environment.
- Contact water to be used in the Coal Processing Plant to separate processed coal from mine rock in the Maintenance Facility washbays and is used to cover potentially acid generating (PAG) materials within the Management Ponds.

### Watersheds

- The minesite straddles two watersheds.
  - half of the minesite is in the Tenas Creek watershed, while the other half of the minesite is in the Four Creek watershed.
- Water modelling, baseline monitoring, and historical records show that there is sufficient water volume even in low water years to supply the Project for both the water needed to cover PAG materials and to process coal.



# WILDLIFE

# TENAS PROJECT

## Telkwa Coal Assessed the Potential Project-related Effects on the Wildlife Valued Component

Valued Component	Subcomponent	Potential Effects Assessed
Wildlife	Furbearers, Caribou, Grizzly Bear, Moose, Bats, and Western Toad	<ul style="list-style-type: none"> <li>Alteration and/or loss of habitat</li> <li>Change in mortality</li> <li>Change in movement patterns</li> </ul>

- The Project Area is used by Moose, Deer, Black Bear, Grizzly Bear, Wolf, Lynx, Coyote and Elk.
- Caribou were not detected within the Project Area during the two years of baseline studies.
- Western toad, Columbia spotted frog, long-toed salamander, and wood frog were detected in the Project Area during surveys.
- Several species of bats were identified in the Project Area, including Little Brown Myotis and Long-eared Myotis.

### Example Mitigation Measures

- The Project is designed to avoid sensitive environments such as known wetland and riparian areas.
- Project features will be placed within existing or planned Project component footprints to limit the clearing of vegetation.
- Least-risk timing windows will be used to avoid Project activities during sensitive time periods.
- The Project footprint boundaries, sensitive habitats and identified wildlife features will be clearly delineated by flagging and/or fencing.
- Traffic and access control measures will be implemented.
- A policy prohibiting hunting within the Project Area will be established and enforced.
- A Wildlife Education Program will be implemented for employees, visitors, and contractors in accordance with the Wildlife Management Plan.

### Residual Effects

- Residual effects are not expected to alter the integrity of the Wildlife Valued Component within the study areas to a point where it is not able to sustain regional populations and contribute to ecological functionality.



The baseline covered several study areas. Field assessments, surveys and mapping were completed from 2017-2019

- Wildlife Study Areas provide a variety of aquatic and terrestrial habitats.
- These study areas have an anthropogenic footprint that includes the Village of Telkwa, part of the Town of Smithers, and overlap with the Highway 16 corridor and associated road, powerline, and rail systems.
- Agricultural land use and rural residences are common at lower elevations, while higher elevation areas have a history of forestry activities and other natural resource exploration and development.

