INFRASTRUCTURE

TENAS PROJECT

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.

Old Smithers Arena (for reference)

TELKWA COAL
LIMITED

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LAND AND RESOURCE USE

TENAS PROJECT

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

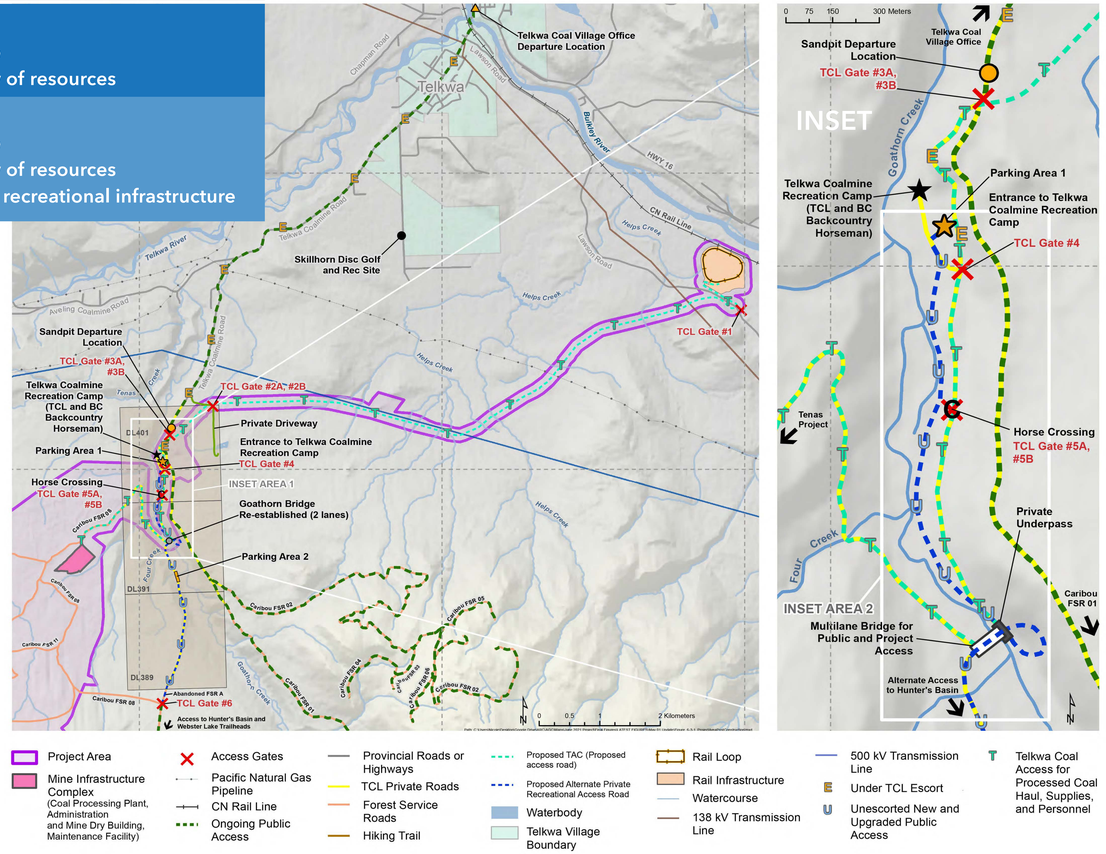
Valued Component	Subcomponent	Potential Effects Assessed
Land and Resource Use	Commercial Land and Resource Use	• Change in access • Change in sensory disturbance • Change in quantity and quality of resources
	Public Recreation Use	• Change in access • Change in sensory disturbance • Change in quantity and quality of resources • Change in or interference with recreational infrastructure

- 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.

TELKWA COAL LIMITED

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.

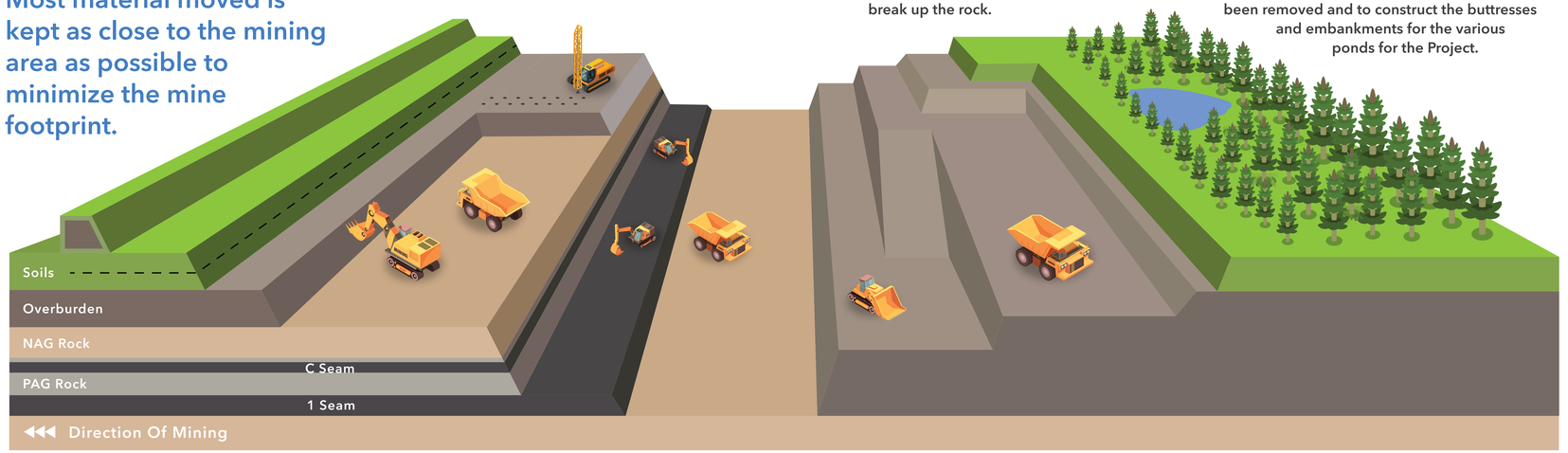
4 Excavation of Rock

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^3) 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^3 (15 metric tonnes).
- Maintenance Support Vehicles.
- Crew Busses.
- Light Vehicles (Pickup Trucks).

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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

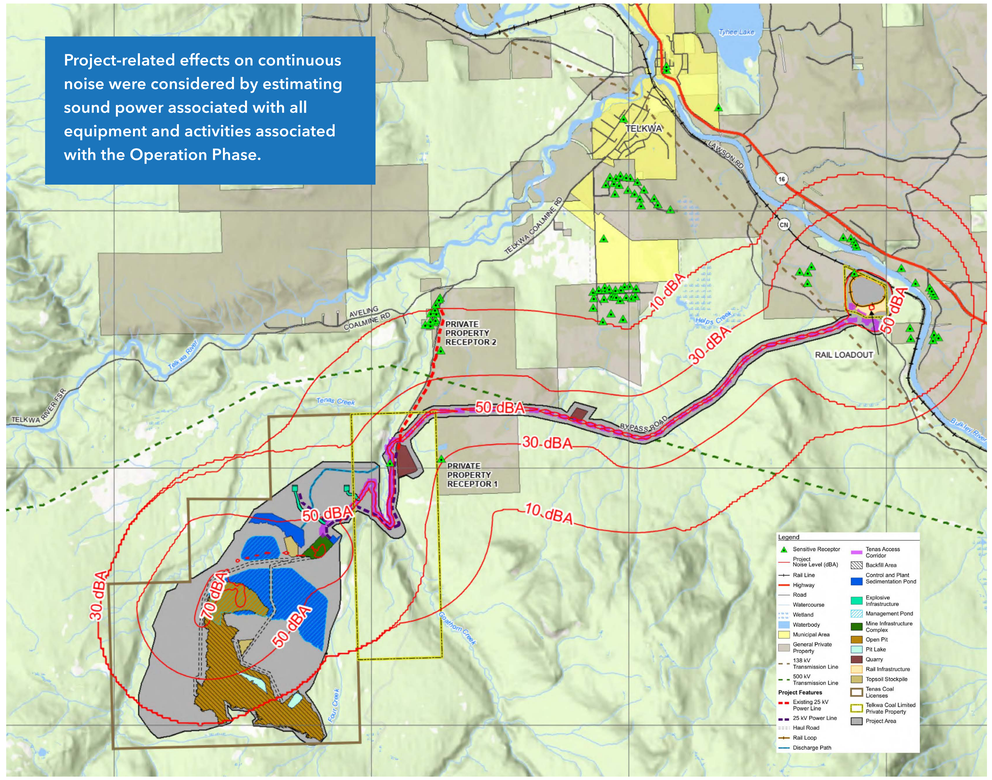
Baseline noise monitoring was conducted at 3 locations over a period of approximately 24 hours. Monitoring was repeated 3 times to account for seasonal variability

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)

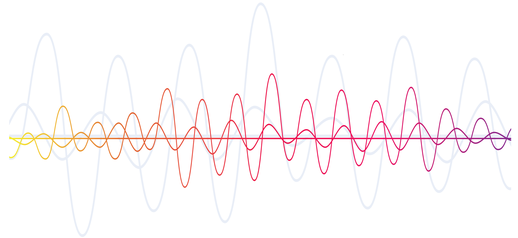


Example Mitigation Measures

- 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.

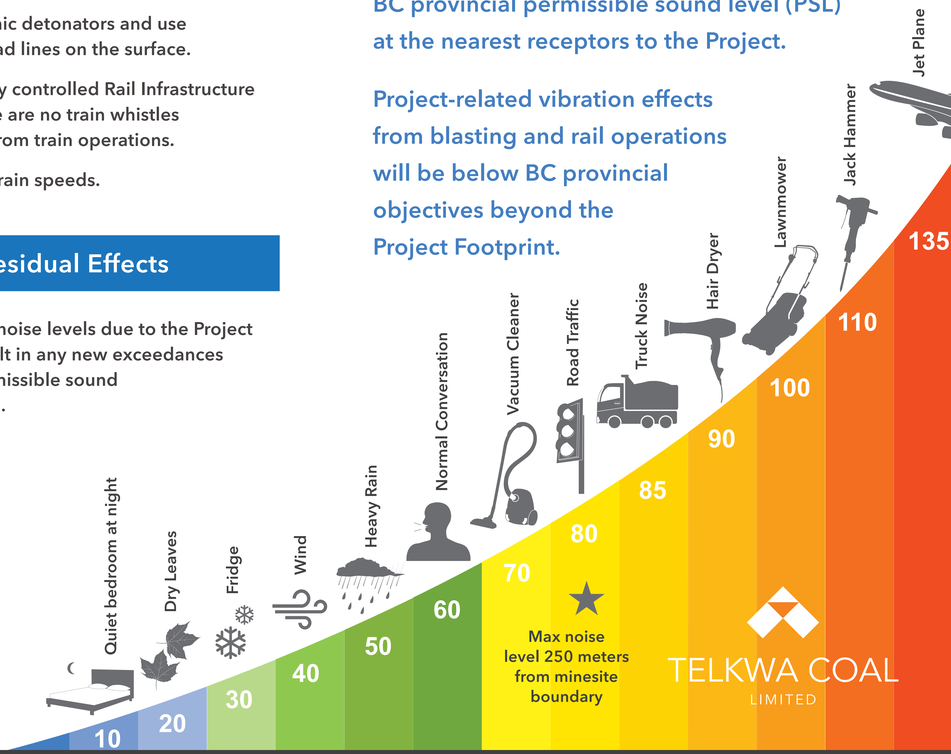
Residual Effects

- 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 locomotioves.
- 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

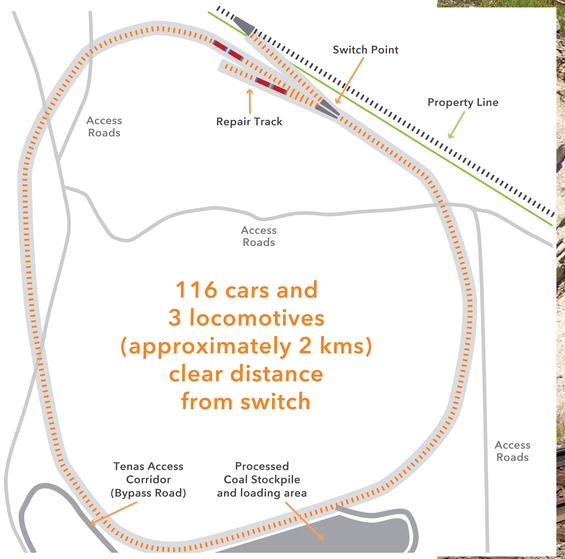
- Maximum Curve of 8%.
- Maximum Grade of 0.3%.
- Dedicated signals on the CN main line to enable more efficient main track operation.
- Repair track for storing cars that are not in working order.
- Length of Rail Infrastructure sufficient to allow rail car loading while keeping the main rail line free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

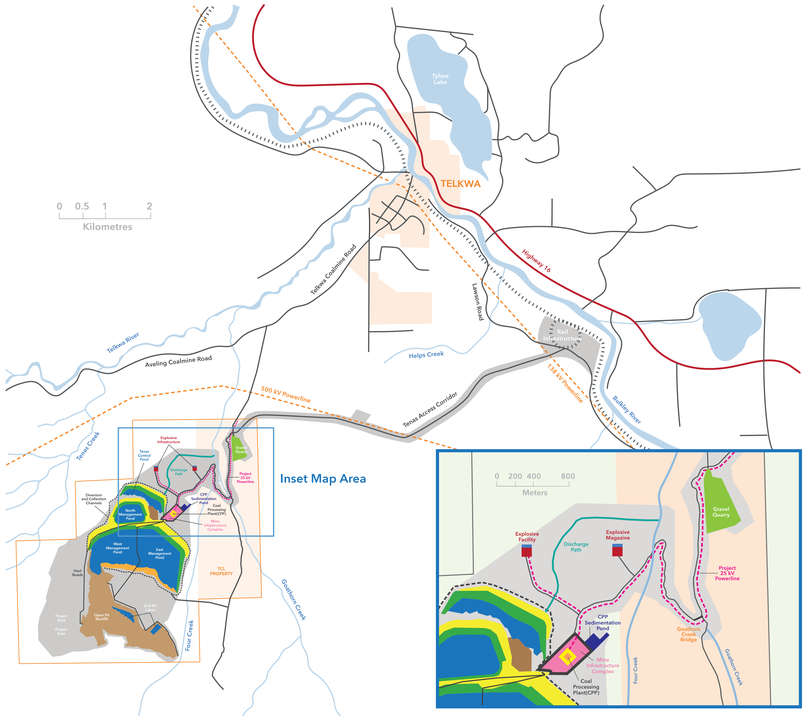
There will be approximately one train per week

TELKWA COAL LIMITED

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.

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

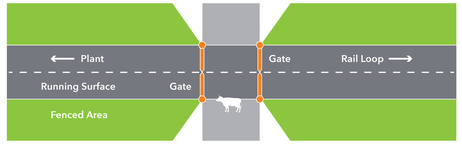
- Uses a combination of barbless and smooth wire to prevent animal injuries.
- Treated wood fence posts for long life.
- High visibility PVC on top wire to improve visibility.

Public Access Considerations

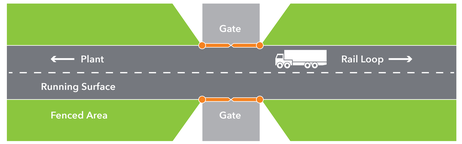
- Gates at Lawson Road to maintain public safety.
- Gates at intersection of TCL private road, private driveway, entrance to the Telkwa Coalmine Recreation Camp and the Horse Crossing.

Livestock Crossings

Crossing Open



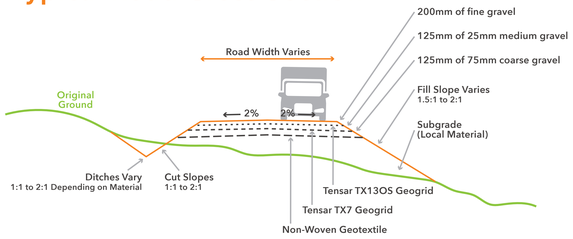
Crossing Closed



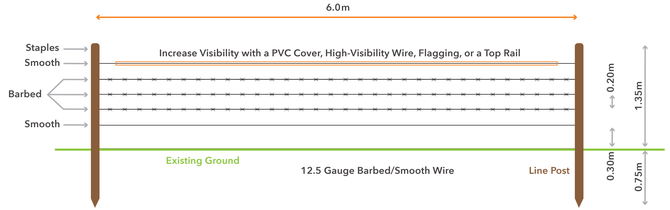
Community feedback from early engagement drove the decision to build the Bypass portion of the TAC at the outset rather than later in the Project's life.

- 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.

Typical Road Cross Section



Typical Fence Cross Section



TELKWA COAL LIMITED

ABOUT SELENIUM

TENAS PROJECT

About Selenium and Mining

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

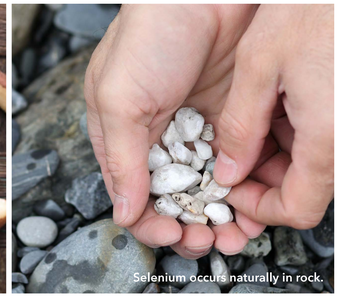
- Is a naturally occurring element in the earth's crust and an essential micro-nutrient for all organisms, including people, animals and plants.
- Exists in both organic and inorganic forms.
- In its organic form, can be harmful in high concentrations: in particular, for egg-laying animals such as birds,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

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.

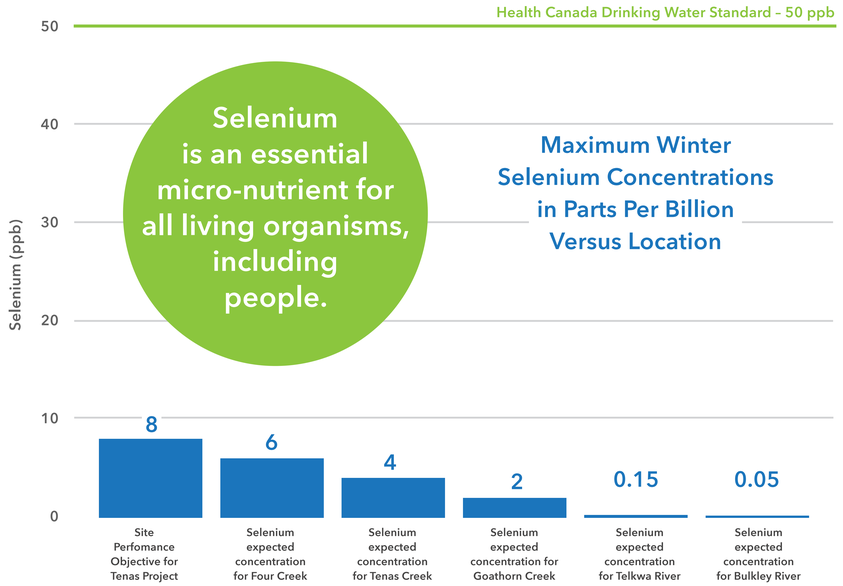
Evaluating Water Quality and Keeping the Environment Safe

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:

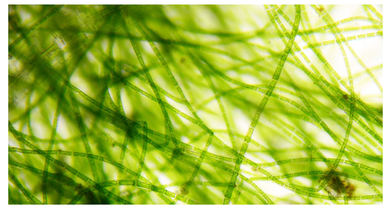
- Groundwater
- Surface water
- Sediment
- Fish tissue
- Vegetation

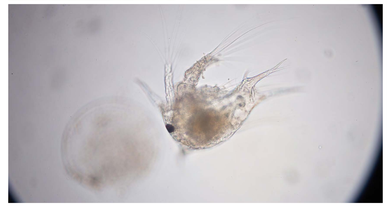
Telkwa Coal has developed a Selenium Management Plan to address concerns and provide rationale for selenium management based on baseline data, predictions from water quality modelling, selenium bioaccumulation modelling, and site-specific benchmark development.



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.





Selenium bioaccumulates through the food chain.

Measuring baseline selenium levels in water and fish tissue (eggs, muscle, whole body)

TELKWA COAL
LIMITED

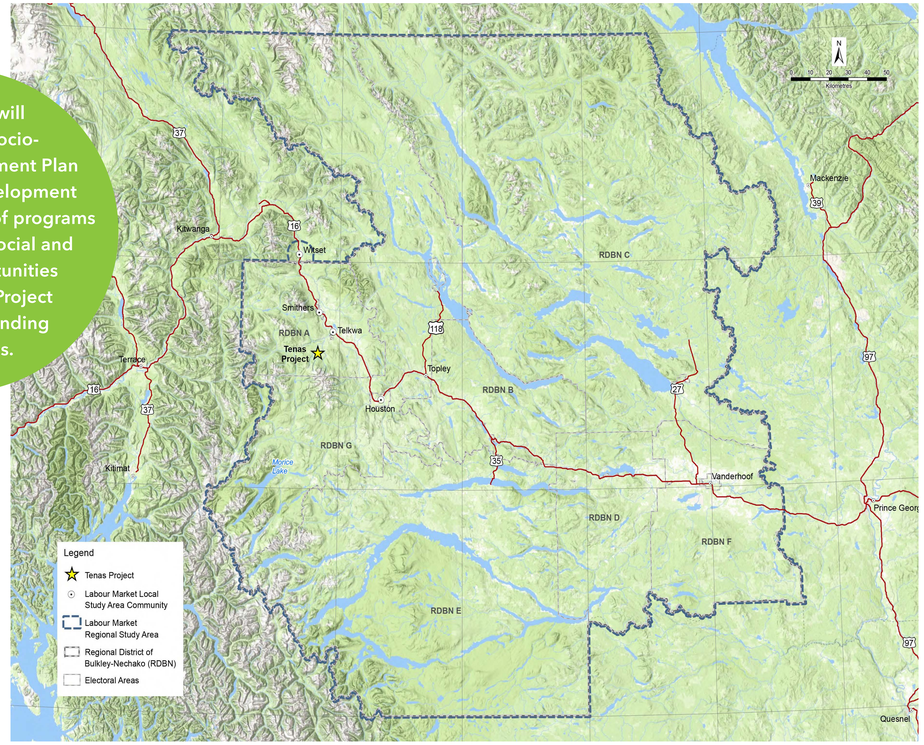
ECONOMIC & SOCIAL VALUED COMPONENTS

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	• Increase in competition for skilled local and regional workforce • Increase in labour cost • Barriers to Indigenous employment and participation in Project-related economic benefits
Economic Development	Local Business and Industry	• Decrease in economic diversity • Change in the capacity of local or regional businesses to supply goods or services • Change that affects development plans or strategies of government • Decrease in local and regional marketable timber • Decrease in local or regional tourism • Decrease in economic activity during Decommissioning and Reclamation Phase
Demographics	n/a	• Change in population and related demographic factors
Infrastructure and Services	• Housing and Accommodation • Community Infrastructure and Services • Transportation	• Increase in cost or decrease in availability of housing and accommodations • Increased demand for community infrastructure and services • Change in use of roads and related increases in traffic

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.

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SURFACE WATER

TENAS PROJECT

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	• Change in Mean Annual Discharge (MAD) • Change in Seasonal Flow Distribution • Change in Low Flows and High Flows
	Surface Water Quality	• Change in Modelled Parameter Concentrations • Change in Other Measurable Water Quality Parameters

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.

TELKWA COAL LIMITED

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.

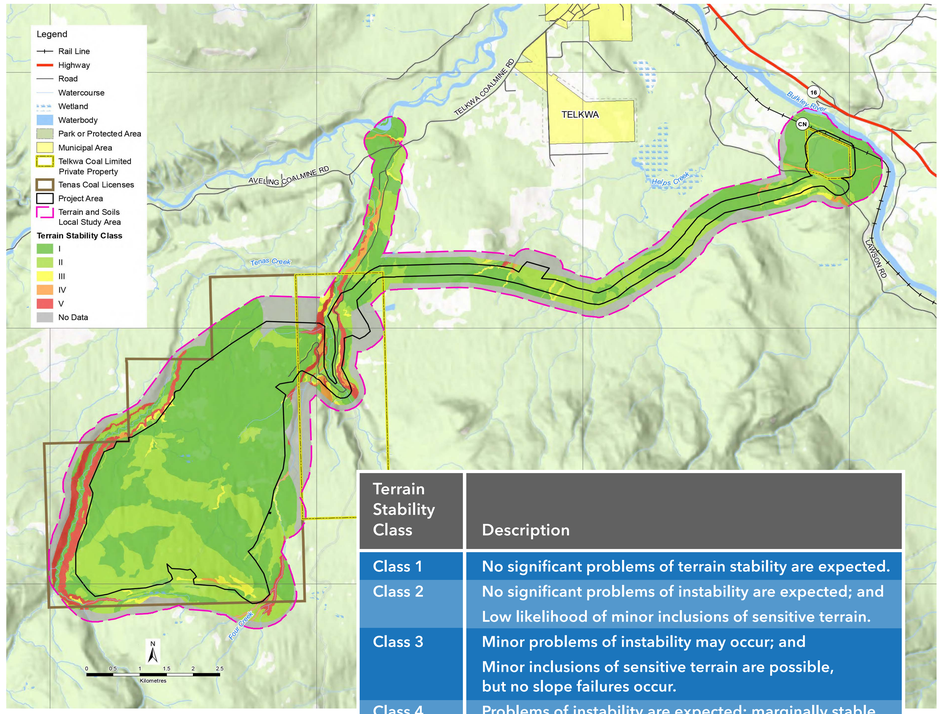
- Surficial materials are predominantly glacial deposits.
- 95% of the Project Area is generally characterised by a combination of flat, undulating, and gently sloping upland terrain consisting of well drained glacial till, flat to ridged gravel deposits; upland alluvial fans and thin veneers along small 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.

View of pasture looking east across Rail Infrastructure area.

Bedrock cliff and ravelling colluvial slope along the Caribou FSR.

Basal till exposed in a landslide upslope of the Goathorn Bridge location.

Bulkley River floodplain.



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.

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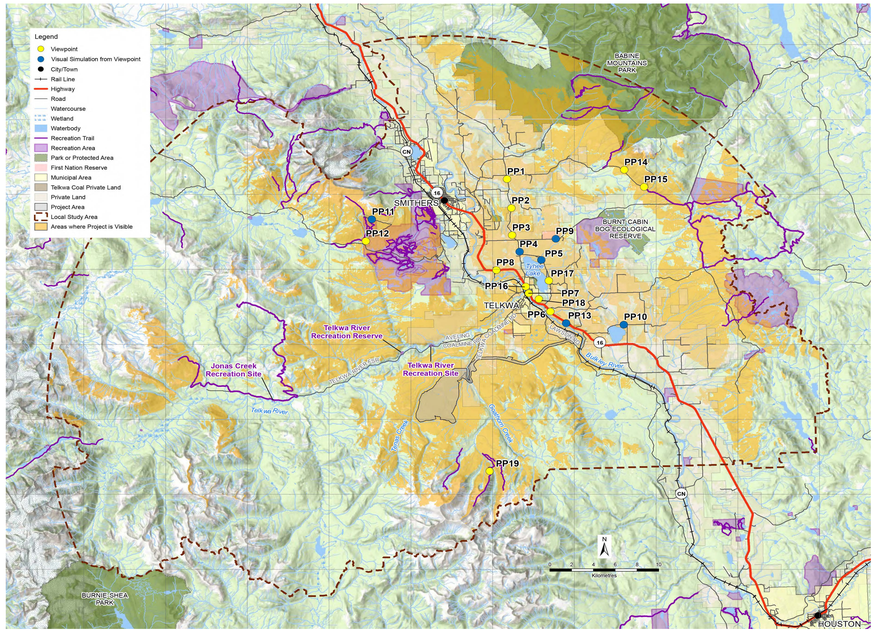
VISUAL RESOURCES

TENAS PROJECT

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

Subcomponent	Potential Effects Assessed
Visual Quality	• Reduction in Visual Quality – Minesite during Active phases (Construction, Operation, and Decommissioning and Reclamation phases) • Reduction in Visual Quality – Minesite during Post-closure phase • Reduction in Visual Quality – Rail Infrastructure during Active phases

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.

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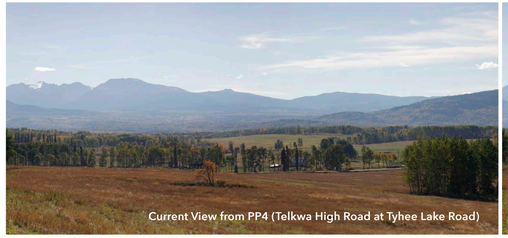
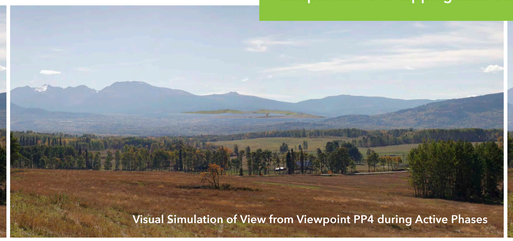
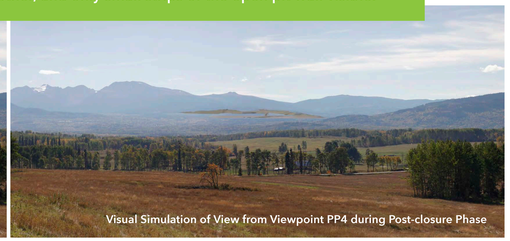
Viewpoint PP4 sits at approximately the same elevation as the Project, and as such has a "head-on" view of the Project components. The Project appears compact, with individual components overlapping each other, and only small strips of the open pit wall visible.


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

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WATER SOURCING & DISCHARGE

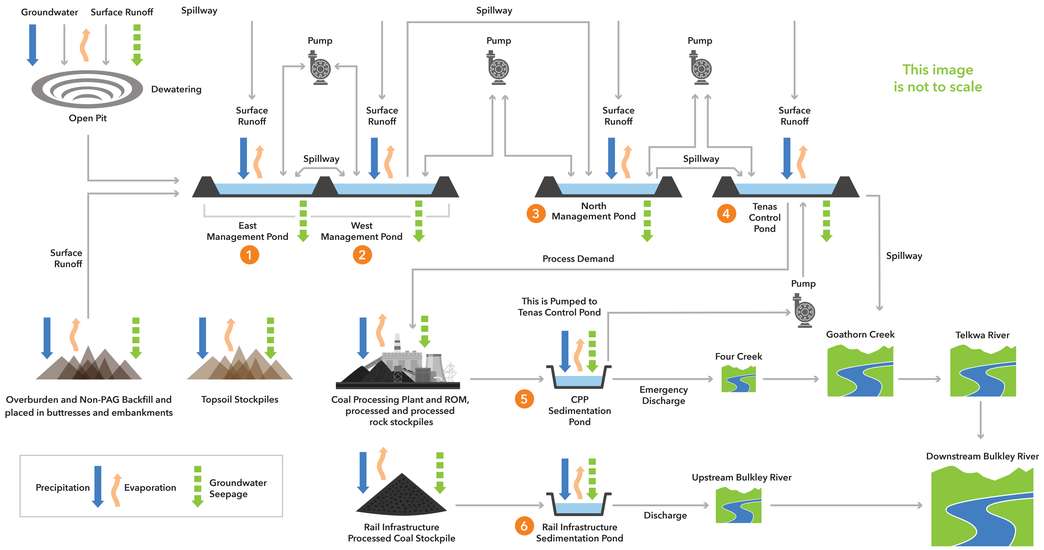
TENAS PROJECT

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).



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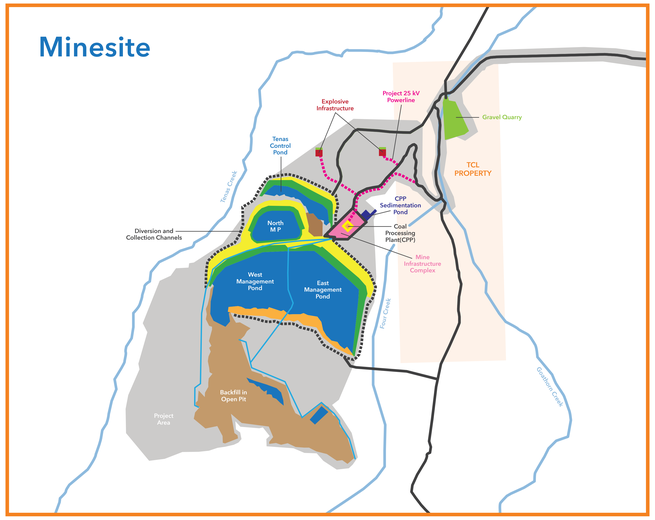

Non-Contact Water

- 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
2. East Management Pond
3. North Management Pond
4. Tenas Control Pond
5. Coal Processing Plant Sedimentation 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.

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WILDLIFE

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

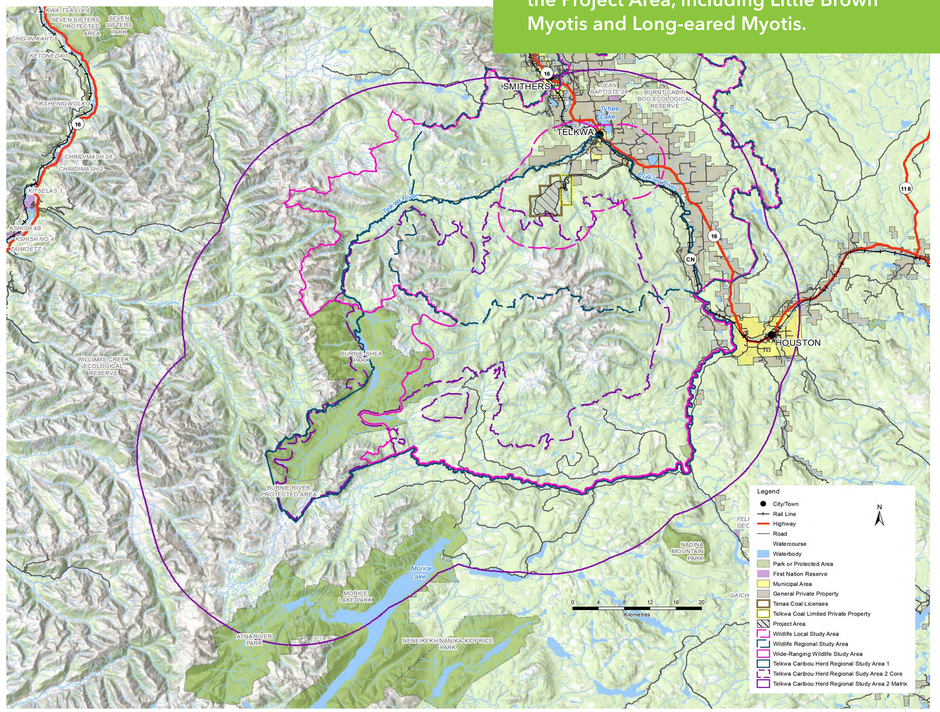
Valued Component	Subcomponent	Potential Effects Assessed
Wildlife	Furbearers, Caribou, Grizzly Bear, Moose, Bats, and Western Toad	• Alteration and/or loss of habitat • Change in mortality • Change in movement patterns

- 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.

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.



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.

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