Rocky Creek Metallurgical Coal Project

Initial Project Description Summary

PREPARED BY
ERM Consultants Canada Ltd.

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ACRONYMS AND ABBREVIATIONS

Agency	Impact Assessment Agency of Canada
BC	British Columbia
BC CDC	BC Conservation Data Centre
CHPP	Coal Handling and Processing Plant
Cooperation Agreement	*Impact Assessment Cooperation Agreement between Canada and British Columbia*
CTI Plus	CTI Plus Resources Ltd.
EAA	*Environmental Assessment Act*
EAO	Environmental Assessment Office
ECCC	Environment and Climate Change Canada
FSR	Forest Service Road
GHG	greenhouse gas
IAA	*Impact Assessment Act*
IPD	Initial Project Description
LPU	Local Population Unit
ML/ARD	metal leach and acid rock drainage
MOE	Ministry of Environment
NW Block	Northwest Block
PID	Parcel Identifier
Project	Rocky Creek Metallurgical Coal Project
PRRD	Peace River Regional District
ROM	run-of-mine
RPR	Reviewable Projects Regulation
SARA	*Species at Risk Act*
SE Block	Southeast Block
Stantec	Stantec Consulting Ltd.
SW	southwest
WRSF	Waste Rock Storage Facility

SYMBOLS AND UNITS OF MEASUREMENT

°C	degree Celsius
km	kilometre
km^2	square kilometre
m	metre
m^3	cubic metre
mm	millimetre
Mt	megatonne
NO_2	nitrogen dioxide
PM_{10}	particulate matter with a diameter of 10 microns or less
$PM_{2.5}$	fine particulate matter with a diameter of 2.5 microns or less
SO_2	sulphur dioxide
t	tonne
tCO_2e	tonne of carbon dioxide equivalent
tpd	tonnes per day

1. INTRODUCTION

CTI Plus Resources Ltd. (CTI Plus) is proposing to construct and operate the Rocky Creek Mine, a new open pit metallurgical coal mine located approximately 47 kilometres (km) southwest of Chetwynd, British Columbia (BC; Figure 1-1). The Rocky Creek Metallurgical Coal Project (the Project) has an estimated annual run-of-mine (ROM) production rate of 3.0 megatonnes (Mt), which is equivalent to 8,220 tonnes per day (tpd), or approximately 1.75 Mt of clean coal per year. The Coal Handling and Processing Plant has a theoretical maximum ROM processing rate of 10,320 tpd or 3.77 Mt per year assuming the plant is operating 24 hours per day and 365 days per year. This rate will not be realized due to maintenance requirements, downtime, and scheduled working hours. The operational mine life is approximately 14 years. Additional engineering work is underway to determine the final construction and schedule of activities, which may impact the duration of the mine life. The Project will involve construction, operation, closure, and reclamation of open pits, a coal processing plant, and associated onsite and offsite infrastructure and activities.

Pursuant to sections 3(1) and 4(1) of the Reviewable Projects Regulation (RPR; 2019), the Project's anticipated production capacity exceeds the criteria of 250,000 tonnes/year of clean coal, and potentially other greenhouse gas (GHG) emission triggers. The Project is therefore reviewable under the BC *Environmental Assessment Act* (EAA; 2018). The Project is also reviewable under the federal *Impact Assessment Act* (IAA; 2019) since the production capacity exceeds the 5,000 tpd trigger.

In accordance with the *Impact Assessment Cooperation Agreement between Canada and British Columbia* (Cooperation Agreement; Government of Canada 2020), CTI Plus will ask that the Province makes a request to the federal Minister of Environment and Climate Change (ECCC) to approve the substitution of the BC Environmental Assessment process for the federal Impact Assessment process.

This Initial Project Description (IPD) provides a high-level description of the evolving Project design and supports initiation of the Environmental Assessment process. Through the IPD, CTI Plus is providing an early Project overview with the intention that this document will support engagement with Indigenous nations, government agencies, and the public to help shape the final design of the Project.

The Environmental Assessment process will be initiated when the BC Environmental Assessment Office (EAO) and the Impact Assessment Agency of Canada (the Agency) accept the IPD and seek public comments on the IPD. Regulators, agencies, Indigenous nations, and the public will have an opportunity to provide initial feedback on the Project and Project components that are being evaluated.

FIGURE 1-1 PROJECT LOCATION

ERM

CLIENT: CTI Plus Resources Ltd.
GIS NUMBER: ROC-15-012-01

DATE: 12 August 2024

PROJECTION: NAD 1983 UTM Zone 10N
SCALE: 1:1,300,000 when printed at 8.5x11

2. PROPONENT INFORMATION

The Project proponent is CTI Plus, a progressive corporation committed to responsible mining, from exploration to development, with a primary focus on metallurgical coal mines and energy resources in Canada. CTI Plus is a private company headquartered in Calgary, Alberta.

For the purposes of the Environmental Assessment, the primary contact person at CTI Plus is:

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3. PROJECT OVERVIEW

3.1 PROJECT NEED AND PURPOSE

CTI Plus is proposing to develop a greenfield metallurgical coal mine near the District of Chetwynd, BC (Figure 1-1). British Columbia has world class metallurgical coal deposits that are primarily found in the Kootenay and Peace Regions with over 95% of the coal mines in the province producing metallurgical coal. Large-scale coal exploration in the region began in the late 1960s. Metallurgical coal mining continues to be an important component of the regional economy with several active and proposed mines in the region.

The global steel demand forecast continues to grow with billions of metric tons of steel required to meet future infrastructure, electrification, and renewable energy demands. Metallurgical coal is crucial in the steel production process.

The Project will benefit the local region, province, and Canada through local employment and procurement opportunities, skills and training opportunities for Indigenous nations and local communities, as well as through tax payments. With an estimated construction period of 2 years, and a mine life of approximately 14 years, the Project will bring added stability to the region's economic outlook.

3.2 PROJECT LOCATION

The Project is located approximately 47 km southwest of the city of Chetwynd, BC, on provincial Crown land within the Peace River Regional District. It consists of 17 coal licences that are intersected by Rocky Creek. Rocky Creek administratively divides the Project into the Northwest Block (NW Block) and the Southeast Block (SE Block). Table 3.2-1 provides location references for key Project components.

TABLE 3.2-1 GEOSPATIAL LOCATION DATA FOR KEY COMPONENTS

Component	UTM Zone	UTM Easting (m)	UTM Northing (m)
Main Plant Site Area Pad (Centre)	NAD83 Zone 10	571604	6130194
NW Block (Centre)	NAD83 Zone 10	574000	6127500
SE Block (Centre)	NAD83 Zone 10	579500	6122500
Rail Loadout Facility (Centre)	NAD83 Zone 10	563055	6161973
Substation	NAD83 Zone 10	587318	6151484

Notes:
m = metre; NW Block = Northwest Block; SE Block = Southeast Block

No federal lands would be used to carry out the Project. In addition, no federal funding has been requested and no federal support is being provided for the Project.

Reserves (First Nation land as defined in subsection 2(1) of the *First Nations Land Management Act* [1999]) within 200 km of the mine footprint are listed in Table 3.2-2. Table 3.2-2 is structured such that Indigenous nations are listed in alphabetical order and Reserves are ordered from closest to farthest from the Project. The closest non-Reserve federal lands are four "Project Envelopes" near Chetwynd, approximately 48 km northeast of the mine site.

TABLE 3.2-2 DISTANCE TO RESERVES

Indigenous Nation	Reserve Name	Distance from the Project Footprint (km)
Blueberry River First Nations	Blueberry River 205	164
	Beaton River 204, south half	172
Doig River First Nation	Doig River 206	166
	Beaton River 204, north half	174
Halfway River First Nation	Halfway River 168	133
Horse Lake First Nation	Horse Lakes 152B	127
Lheidli T'enneh	Fort George 2	151
	Clesbaoneecheck 3	164
	Fort George Cemetery 1a	165
	Salaquo 4	172
McLeod Lake Indian Band	Hominka 11	75
	McLeod Lake 5	79
	Mackenzie 19	79
	Tacheeda Lake 14	82
	Quaw Island 25	82
	Pack River 2	82
	Tom Cook 26	83
	McIntyre Lake 23	83
	Kerry Lake East 9	85
	McLeod Lake 1	85
	Blue Lake 24	86
	Kerry Lake West 8	89
	Arctic Lake 10	96
	Weedon Carp 6	97
	Davie Lake 28	102
	Weedon Lake 27	102
	Sas Mighe 32	103
	War Lake 4	105
	Carp South Indian Reserve 7	114
	Carp Lake 3	116
	Weston Bay 20	132
	Finlay Bay 21	145

Indigenous Nation	Reserve Name	Distance from the Project Footprint (km)
Nak'azdli Whut'en	Great Bear Lake 16	151
	Carrier Lake 15	156
	Nehounlee Lake 13	172
	Tatsadah Lake 14	172
	Uzta 7a	173
	Uzta 4	174
	Williams Prairie Meadow 1a	176
	Mission Lands Indian Reserve 17	181
	Nak'azdli	181
	Inzana Lake 12	185
	Tatselawas 2	187
	Six Mile Meadow 6	189
	Sowchea 3	190
	Sowchea 3a	191
	Beaver Islands 8	193
	Stuart Lake 9	195
	Stuart Lake 10	195
Saulteau First Nations	East Moberly Lake 169	63
Takla Lake First Nation	North Tacla Lake 12	185
Tl'azt'en Nation	Lhoh Cho 29	162
	Binche 10	174
	North Road 19	177
	Chuz Ghun 8	178
	Tes Gha La 7a	180
	Binche Bun 7	182
	Binche 12	183
	Wha T'a Noo 40	186
	Chuz Teeslee 41	186
	Binche 2	188
	Tl'o Ba 22	189
	Chundoo Lh'tan La 45	191
	Tsun Tine Ah 37	192
	Sisul Tl'o K'ut 21	193
	Sisul Tl'o K'ut 14	194
	Tache 1	196

Indigenous Nation	Reserve Name	Distance from the Project Footprint (km)
Tsay Keh Dene	Parsnips 5	74
	Tutu Creek 4	88
West Moberly First Nations	West Moberly Lake 168a	58

Note:
km = kilometre

3.3 PROJECT HISTORY

Although the Government of BC conducted limited regional exploration of the Peace River coalfields from the 1940s to the 1960s, most exploration activities at the Project site were conducted between 1979 and 1985 by BP Exploration Canada Ltd. After CTI Plus acquired the coal licences in 2019, they commenced additional exploration work at the Project site in 2020, 2023, and 2024.

3.4 STATUS AND EXISTING INFRASTRUCTURE

As the Project is still in the exploration phase, there is minimal Project-owned infrastructure on the property. Non-Project owned infrastructure within the coal licences include oil and gas facilities, most of which are suspended or abandoned. Notably, however, TC Energy Corporation's Coastal GasLink pipeline runs through a portion of the NW Block. The pipeline achieved mechanical completion in late 2023 and is currently being commissioned.

4. PROJECT DESCRIPTION

4.1 OVERVIEW

The Project design described in the IPD is based on the conceptual level mine planning in 2023 as part of the early work for the technical study that is currently underway in 2024. Additional engineering design work, optimization, and mine planning remain to be done to better define the disturbance area and equipment requirements of the Project. CTI Plus is also working with feedback from the public, regulators, Indigenous nations, and stakeholders to better define the Project design and layout. The final engineering design and layout of the proposed infrastructure will consider the results of geotechnical studies, environmental studies, and inputs from consultation and engagement.

The Project consists of two mining areas, one in the NW Block, and another in the SE Block, as shown in Figures 4.1-1 and 4.1-2. Both areas will be mined with open pit methods utilizing conventional truck and shovel equipment. The NW Block, which consists of six open pits, will be mined for approximately 11 years (Years 1 to 11). The SE Block will be mined after the NW Block for approximately 4 years (Years 11 to 14) from one single open pit. Due to the distance between the two mining blocks, the SE Block may include a satellite facility to provide the necessary maintenance and supplies. Design work is ongoing to optimize the mine plan and schedule for the Project, as well the need for additional facilities necessary for the SE Block.

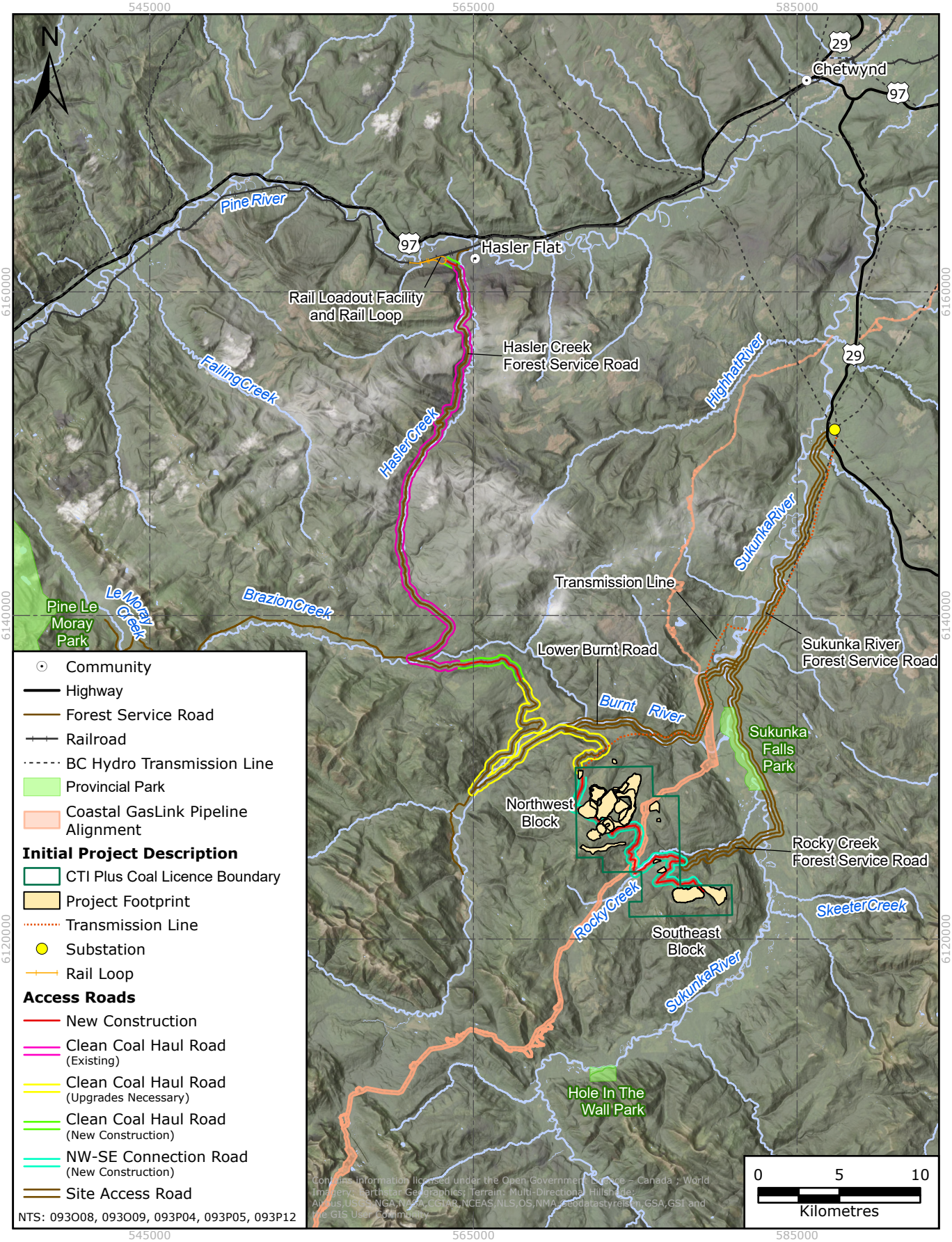
Based on the initial design work, the following key Project components will be required:

- NW Block (Primary Facility):
  - Open pits (NW A, NW B, NW C, NW D, NW E, NW F)
  - Waste Rock Storage Facilities (WRSFs), both external and in-pit
  - Main Plant Site Area Pad, containing:
    - Run-of-Mine (ROM) Coal Pad
    - Coal Handling and Processing Plant (CHPP)
    - Coal Reject Dewatering Facility
    - Clean Coal Stockpile
    - Truck Maintenance Shop and Warehouse Facility
    - Mine Dry
    - Office and Administration Facility (including first aid facilities)
    - Onsite Power Distribution Network and Substation
    - Fuel Storage / Fuel Island
    - Sewage waste management (e.g., potentially septic fields)
    - Laydown Area
  - Haul and Service Roads
  - Water management structures (including non-contact water diversion ditches, catchment ditches, and sedimentation ponds)
  - Landfill
  - Topsoil and Overburden Stockpiles

    - Security Gatehouse
    - Explosive Storage Facility
- SE Block:
    - Open Pit (SE Pit)
    - NW-SE Connection Road
    - WRSF (external)
    - Water management structures (including non-contact diversion ditches, catchment ditches, and sedimentation ponds)
    - Haul and Service Roads
    - Security Gatehouse
    - Potential Support Facility Area Pad, which may include:
        - Secondary Laydown Area
        - Temporary Equipment Maintenance Facility
        - Fuel Storage / Fuel Island
        - Power generators
        - Temporary trailers for lunchroom / offices / first aid facilities
- Offsite Infrastructure:
    - Transmission Line and Substation
    - Site Access Roads (existing forest service roads off Highway 29)
    - Clean Coal Haul Road (from Main Plant Site Area Pad to Rail Loadout Facility, existing, upgrade, and new construction)
    - Rail Loadout Facility (potentially including a power distribution line, access road, security gate, and clean coal stockpile)
    - Rail Loop

The Project will have a mine life of approximately 14 years, plus 2 years of initial construction. The Project is divided into an initial Construction phase, Operations phase, Closure and Decommissioning phase, and Post-closure phase. Table 4.1-1 summarizes the Project phases. Additional engineering work is currently underway to better define the duration and activities of each phase.

FIGURE 4.1-1 PROJECT LAYOUT



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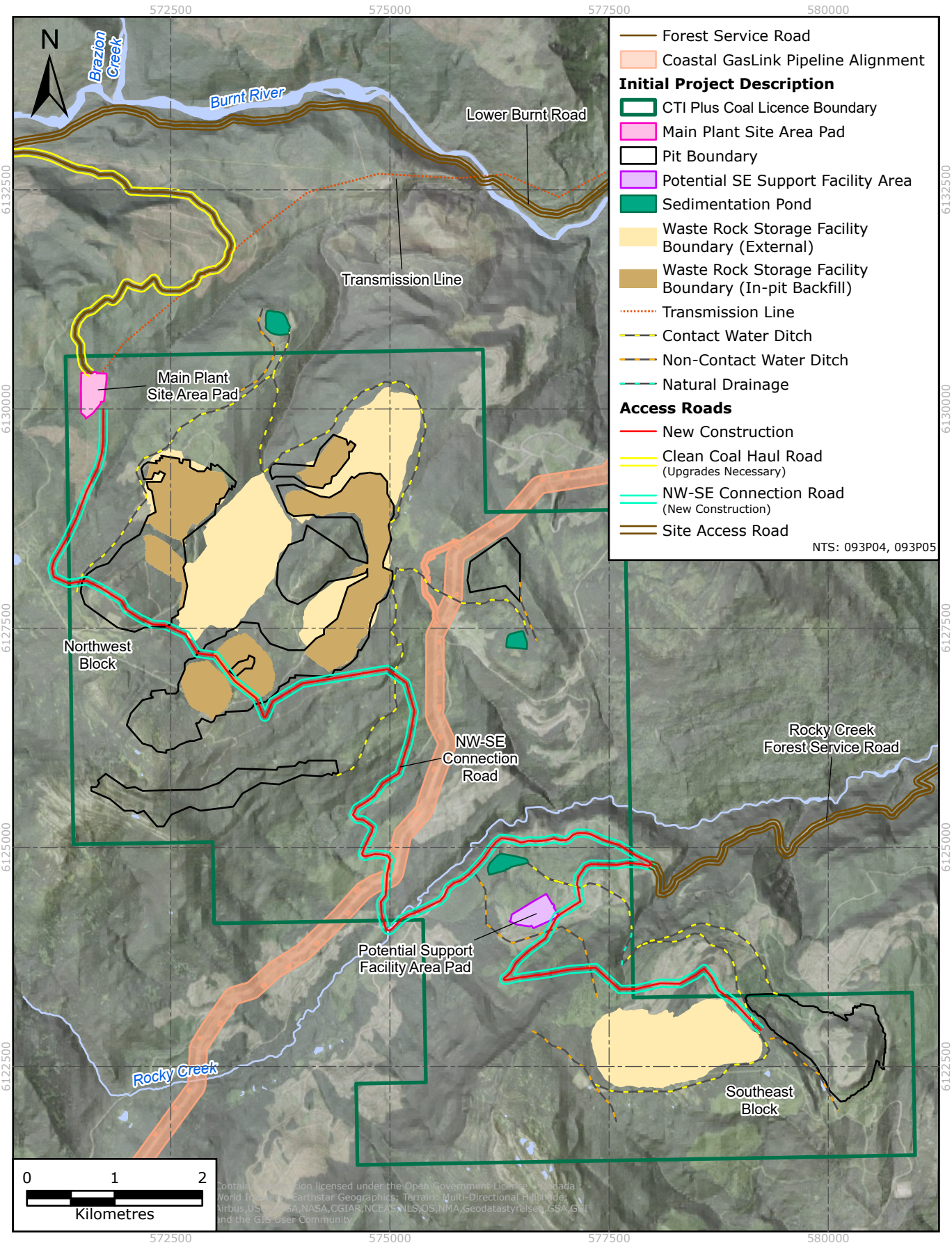
CLIENT: CTI Plus Resources Ltd.
GIS NUMBER: ROC-15-015-01

DATE: 14 August 2024

PROJECTION: NAD 1983 UTM Zone 10N
SCALE: 1:325,000 when printed at 8.5x11

FIGURE 4.1-2 NORTHWEST BLOCK AND SOUTHEAST BLOCK LAYOUT



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CLIENT: CTI Plus Resources Ltd.
GIS NUMBER: ROC-15-015-02

DATE: 14 August 2024

PROJECTION: NAD 1983 UTM Zone 10N
SCALE: 1:60,000 when printed at 8.5x11

TABLE 4.1-1 PROJECT PHASES AND ACTIVITIES

Phase	Duration	Activities
Construction	Year -2 to Year -1	• Initial clearing and soil stripping. • Construction of the mine water management structures. • Foundation preparation. • Access road construction and upgrades for the Clean Coal Haul Road and access within the coal licence boundary. • Transmission Line and Substation construction. • Construction of the Rail Loadout Facility and Rail Loop. • Construction of the initial sedimentation pond. • Construction of the mine infrastructure and CHPP in the NW Block.
Operations	Year 1 to Year 11	• Mining operations in the NW Block will take approximately 11 years to complete. During this phase, the NW Block will be mined with conventional truck and shovel equipment. • Drilling and blasting to break the waste rock into mineable sizes which can then be loaded, hauled, and placed in the WRSFs. • The ROM coal will be hauled to the CHPP for processing. Processed (clean) coal will then be hauled to the Rail Loadout Facility. • Soil stripping and clearing will occur when the operation expands into new mining areas (i.e., new open pits). • Throughout Operations, progressive reclamation of the WRSFs will occur, which includes activities such as re-sloping of the WRSFs and placing soil cover to promote vegetation.
	Year 11 to Year 14	• Soil stripping, clearing, and construction of the NW-SE Connection Road, secondary facilities, and SE Pit in the SE Block. • Mining operations in the SE Block is scheduled to begin in Year 11 as the mining activities transition from the NW Block. SE Block mining will utilize the same mobile equipment as the NW Block, but due to the longer distance from the CHPP, it is expected that additional haul trucks may be required to meet coal haulage requirements. The preliminary schedule shows mining in the SE Block will last approximately 4 years. • Similar process as the NW Block with respect to drilling, blasting, and hauling of waste rock and coal. • Throughout Operations, progressive reclamation of the WRSFs will occur, which includes activities such as re-sloping of the WRSF and placing soil cover to promote vegetation.
Closure and Decommissioning	Year 15 to Year 16	• Decommissioning infrastructure such as the CHPP, truck maintenance shop, and admin buildings. • Final re-sloping of the remaining WRSFs. • Final placement of cover soil on the reclaimed areas based on the closure prescription. • Closure of the Open Pits. • Decommissioning the sedimentation ponds, assuming the water quality meets the regulatory requirements for discharge.
Post-closure	Year 16+	• During the Post-closure phase, ongoing water quality monitoring may be required until the water quality meets the regulatory requirement for discharge. During this period, annual inspections of the sedimentation ponds will also be required to verify the ponds are operating in accordance with the design. • Ongoing environmental and reclamation monitoring of the site.

Notes:
CHPP = Coal Handling and Processing Plant; NW Block = Northwest Block; ROM = run-of-mine; SE Block = Southeast Block; WRSF = Waste Rock Storage Facility

4.2 ACCESS, TRANSPORTATION, AND POWER

Access to the NW Block is via Highway 29, using the existing Sukunka River Forest Service Road (FSR), and the Lower Burnt Road, as shown on Figure 4.1-1 as Site Access Roads. The SE Block, which contains the SE Pit and the potential Support Facility Area Pad, will be accessible from the NW Block via a new mine haul road (NW-SE Connection Road) that will be constructed as part of the mining operation. Currently, the SE Block can be accessed via Sukunka River FSR from Highway 29 and Rocky Creek FSR. The existing Site Access Roads from Chetwynd to the NW Block and SE Block will mainly be used for transportation of site personnel, contractors, and necessary supplies and materials.

The clean coal produced from the mining operation will be hauled from the CHPP in the NW Block to a Rail Loadout Facility near the Hasler Flats area (Figure 4.1-1) via the Clean Coal Haul Road. The Clean Coal Haul Road utilizes the same alignment as existing unnamed roads and the existing Hasler Creek FSR. Engineering work is ongoing to optimize the Clean Coal Haul Road requirements and to confirm the extent of necessary upgrades.

The coal will be railed to either the bulk coal port facilities in Vancouver or to the Trigon Pacific Terminals coal port at Prince Rupert. Based on the current production schedule, there will be approximately 30 clean coal highway-type trucks moving approximately 5,000 tonnes (t) of clean coal per day operating on a 24-hour shift schedule.

An approximately 32 km long Transmission Line will be required to provide electricity for the proposed infrastructure, and potentially some units in the mining fleet (as part of CTI Plus's corporate decarbonization initiative). The proposed connection point to the existing BC Hydro transmission network is located at or near the existing Sukunka Substation (Figure 4.1-1).

4.3 OPEN PITS

Most Project infrastructure and facilities will be located in the NW Block, including six open pits with depths varying from 30 m to 60 m. Once mining in the NW Block is complete, mining in the SE Block will begin in Year 11 until Year 14. The SE Pit has an average depth of 70 m.

4.4 WASTES AND EMISSIONS

The Project will generate four types of waste material that will be managed onsite:

- Topsoil and reclamation material
- Overburden
- Waste rock
- Coal process rejects

The NW Block will have both external WRSFs and in-pit backfill structures. The external WRSFs reach a maximum height (measuring from the crest of the toe of the WRSF) of 290 m, while the highest in-pit backfill structure is approximately 150 m. The SE Block will have an external WRSF with a maximum height of 150 m that can store approximately 59 million m^3 of mine waste material. The height of each WRSF is measured from crest to toe elevation and the configuration of the WRSFs may be adjusted as part of the next phase of engineering.

Additional design work is currently underway to determine the amount of suitable topsoil and overburden that is anticipated to be available for closure planning and stockpile design. Geotechnical investigation is also planned for

the summer of 2024 and 2025 to gather additional foundation information for the WRSFs, sedimentation pond embankments, and the primary infrastructure locations.

The Project is anticipated to follow similar mining methods as other coal mines in the region, and it will likely generate air emissions, water discharge, and other domestic and industrial wastes. Additional design work is currently underway to minimize the emissions and impact to the environment.

Based on the direct GHG emissions for the Operations phase, the estimated net emissions are 1,718,256 tonnes of carbon dioxide equivalent (tCO_2e). The maximum annual net GHG emissions for the Project are in Year 11, with 160,515 tCO_2e. The Project's net GHG emissions represents 0.41% of the *Climate Change Accountability Act* (2007) 2030 target and 0.03% of the Canadian 2030 target under the *Paris Agreement* (2015).

4.5 PROJECT ALTERNATIVES

CTI Plus is considering potential alternatives to the Project that are technically and economically feasible. The possible alternatives that have and are being considered are presented in Table 4.5-1.

TABLE 4.5-1 ALTERNATIVES TO THE PROJECT BEING CONSIDERED

Alternative Considered	Preferred Option
Not undertaking the Project	The "no project" alternative would not provide the positive economic effects associated with the Project's development and would not fulfill the purpose of the Project.
Changing the timing of the Project	This alternative would generally have the same environmental and socio-economic effects as those associated with proceeding with the Project as proposed.
Changing the location of the Project	The current Project site has significant advantages. It is within CTI Plus's existing coal licences, the licences have been subject to historical and ongoing exploration work, and it is near critical infrastructure (e.g. power, highway, road networks, and rail) and established communities. CTI Plus is not aware of viable alternatives to the Project, of similar scale, in northeast BC.

Notes:
BC = British Columbia; CTI Plus = CTI Plus Resources Ltd.; Project = Rocky Creek Metallurgical Coal Project

Table 4.5-2 provides a summary of the potential alternative ways CTI Plus has considered to carry out the Project. CTI Plus will continue to investigate other alternatives as design, environmental studies, and engagement with Indigenous nations and stakeholders advance. Additionally, CTI Plus is investigating potential regional partnerships for certain onsite and offsite mine-related infrastructure needs, including the Clean Coal Haul Road, Transmission Line, CHPP, and the Rail Loop and Rail Loadout Facility.

TABLE 4.5-2 ALTERNATIVES WAYS OF CARRYING OUT THE PROJECT

Component/Activity	Alternatives Considered	Preferred Option
Mining equipment	Electrifying the mining equipment instead of diesel powered.	The current assumption is to utilize diesel powered mining equipment because of equipment availability, additional infrastructure requirements for power supply, and additional capital requirements. CTI Plus is currently developing a decarbonization strategy for the Project and may be able to present the results as part of the ongoing engineering and design and in the Detailed Project Description.

Component/Activity	Alternatives Considered	Preferred Option
Starting mining area	Start mining in the SE Block instead of NW Block.	Starting the Project in the SE Block can help minimize the overall Project disturbance in the early years. At the current production rate of 3.00 Mt of coal processing rate per year, it was determined at a high level that the SE Block could only supply enough resources for 3 to 4 years; therefore, additional capital may be required to move the infrastructure to the NW Block. In addition to that, starting in the NW Block allows a shorter haul distance to the rail loop that is currently proposed to be located in the Hasler Flat area.
CHPP location	The Project reviewed seven possible CHPP locations: two locations located in the SE Block, one location located between the two resource areas, and four located in the NW Block.	Based on the high-level economic analysis, the results showed that the two major contributing factors are the haulage distance for the clean coal and ROM. The proposed CHPP location, as shown in the site layout, minimizes the coal haulage cost and also the truck requirements for hauling the coal.
Clean coal transportation	Alternative electrified technology to reduce carbon emissions.	The current Project design assumes clean coal will be hauled from the Project site to the Rail Loadout Facility approximately 64 km away using diesel powered trucks with trailers. Distance and tonnes of material being moved likely does not support an electrified conveyor or rail line. However, electrified options exist for material transport trucks being used in this type of an application. The viability of using battery electric off-highway material transport trucks will need to be determined, as well as other possible alternatives.

Notes:
BC = British Columbia; CTI Plus = CTI Plus Resources Ltd.; km = kilometre; Mt = megatonne; ROM = run-of-mine; NW Block = Northwest Block; Project = Rocky Creek Metallurgical Coal Project; SE = Southeast Block

5. REGULATORY AND POLICY FRAMEWORK

CTI Plus will utilize the IPD for entry into the assessment process of the BC EAA (2018) and federal IAA (2019).

Pursuant to sections 3(1) and 4(1) of the RPR (2019), the proposed production capacity exceeds the criteria of 250,000 t per year of clean coal, and potentially GHG emission triggers, and will require a provincial Environmental Assessment in accordance with the BC EAA (2018). The specific RPR trigger is as follows:

- Part 3 (Mine Projects), Table 6; Row 1 Coal Mines: "A new mine facility that, during operations, will have a production capacity of greater than or equal to (≥) 250 000 tonnes/year of clean coal or raw coal or both."

The potential trigger under the RPR related to GHG emissions is as follows:

- Part 1 (Interpretation), Effects Thresholds section 4(1)(a): "emits 380,000 tonnes or more per year of one or more GHG directly from project facilities, measured in carbon dioxide equivalents, determined in accordance with Part 3 of the Greenhouse Gas Emission Reporting Regulation (BC Reg 249/2015)."

The Project is also reviewable under the federal IAA (2019) Physical Activities Regulations (2019) based on daily coal production capacity over 5,000 tpd. The specific trigger is as follows:

- Section 18(a) (Mines and Metal Mills): "The construction, operation, decommissioning and abandonment of … a new coal mine with a coal production capacity of 5 000 t per day or more."

Key provincial and federal permits possibly required are listed below and will be confirmed as Project design advances and in consultation with regulatory agencies. The need for a provincial water lot lease is not anticipated.

Summary of provincial regulatory bodies and associated authorizations:

- Ministry of Energy, Mines and Low Carbon Innovation – *Mines Act* Permit;
- Ministry of Health – Water System Construction Permit, Water System Operating Permit, Food Facility—Health Approval Application, Sewage Registration;
- Ministry of Environment and Climate Change Strategy – *Environmental Management Act* permits (Air and Effluent Discharge), Hazardous Waste Registration, Fuel Storage Registration, Water Licence, Approval for Works in and about a Stream (Section 11);
- Water, Lands, and Resource Stewardship – Investigation or Inspection Permit, Site Alteration Permit, Fish Collection Permit, Wildlife Permit, Licence of Occupation; and
- Ministry of Forests – Occupant Licence to Cut, Road Use Permit.

Summary of federal regulatory bodies and associated authorizations:

- Natural Resources Canada – Explosives Permit;
- Fisheries and Oceans Canada – Fisheries Authorization;
- Environment and Climate Change Canada – Migratory Bird Permit, Species at Risk Permit, Environmental Emergency Registration;
- Canadian Nuclear Safety Commission – Nuclear Safety Authorization;
- Industry Canada – Radio Licence; and
- Transport Canada – Navigable Waters Approval, Transportation of Dangerous Goods Permits.

6. INDIGENOUS NATIONS AND INTERESTS

The Project overlaps the territories of Blueberry River First Nations, Doig River First Nation, Halfway River First Nation, Horse Lake First Nation, McLeod Lake Indian Band, Saulteau First Nations, and West Moberly First Nations, all of whom are Treaty 8 signatories (Government of Canada 1966). Treaty 8, signed in 1899, covers approximately 840,000 square kilometres (km^2) across BC, Alberta, Northwest Territories, and Saskatchewan (Indigenous Services Canada 2023). CTI Plus have requested the territory boundaries from Doig River First Nation, Halfway River First Nation, and Saulteau First Nations.

CTI Plus acknowledges that the Project is also close to communities that are members of the Métis Nation British Columbia, including the Kelly Lake Métis Settlement Society and four other chartered communities.

Based on initial engagements between CTI Plus and Indigenous nations, issues and concerns about the Project have included:

- Air quality, raised by West Moberly First Nations;
- Archeological sites and culturally sensitive sites, raised by West Moberly First Nations;
- Caribou and caribou habitat, raised by Halfway River First Nation, McLeod Lake Indian Band, and Saulteau First Nations;
- CGL pipeline proximity to proposed Project infrastructure, raised by Halfway River First Nation and Saulteau First Nations;
- Closure and reclamation, raised by Saulteau First Nations;
- Fish and fish habitat, raised by Halfway River First Nation;
- Land use and cumulative effects on territories and Treaty 8 Rights, raised by Saulteau First Nations;
- Selenium and mercury affecting water quality, raised by Halfway River First Nation, Horse Lake First Nation, McLeod Lake Indian Band, Saulteau First Nations, and West Moberly First Nations;
- Traffic, raised by Horse Lake First Nation and West Moberly First Nations;
- Wildlife and wildlife habitat, raised by McLeod Lake Indian Band; and
- Worker accommodations, raised by Halfway River First Nation.

Engagement with Indigenous nations is a core component of the CTI Plus engagement program. Details on how CTI Plus plans to engage with Indigenous nations to identify and consider Indigenous interests, issues, and concerns are provided in the Rocky Creek Metallurgical Coal Engagement Plan (CTI Plus 2024).

7. EXISTING BIOPHYSICAL ENVIRONMENT

The description of the biophysical environment has been informed by Project-specific studies completed to date, provincial and federal datasets, and other previous environmental assessments applications completed in the region. CTI Plus initiated baseline studies in 2023 and will continue with additional studies in 2024 and 2025.

The Project is in a region of northeast BC marked by the Rocky Mountains to the west and an extension of the Prairies to the east. For the period 1981 to 2010, the mean daily temperature was 3.0 degrees Celsius (°C), and the mean daily maximum and minimum temperatures were 9.1°C and -3.0°C, respectively (ECCC 2024). The mean annual precipitation at the Chetwynd A meteorological station was 440.6 millimetres (mm).

The Project is in the Sukunka River watershed and the Sukunka River is the primary waterway in this region. The lower Burnt River flows west to east, approximately 3 km north of the NW Block, before connecting with the Sukunka River. Rocky Creek flows from the southwest to the northeast between the NW Block and the SE Block before joining the Sukunka River approximately 5 km downstream of CTI Plus's coal licence boundary.

The Sukunka River is approximately 145 km long (BC CDC 2024), has a relatively high fisheries value, and supports several regionally important sport-fish populations. Arctic grayling (*Thymallus arcticus*), mountain whitefish (*Propsopium williamsoni*), bull trout (*Salvelinus confluentus*), rainbow trout (*Oncorhynchus mykiss*), northern pike (*Esox Lucius*), longnose dace (*Rhinichthys cataractae*), longnose sucker (*Catostomus catostomus*), and slimy sculpin (*Cottus cognatus*) are all present in the Sukunka River (MOE 2012). Species present in Rocky Creek include bull trout, finescale dace (*Chrosomus neogaeus*), longnose sucker, mountain whitefish, rainbow trout, and slimy sculpin (BC CDC 2024). Burnt River is known to have a similar fisheries assemblage as Rocky Creek, although Arctic grayling have also been observed (BC CDC 2024).

The region is home to a number of ungulate species, including moose (*Alces americanus*), Rocky Mountain elk (*Cervus canadensis nelsoni*), white-tailed deer (*Odocoileus virginianus*), mule deer (*O. hemionus hemionus*), mountain goat (*Oreamnos americanus*), thinhorn sheep (*Ovis dalli*), Rocky Mountain big-horned sheep (*Ovis canadensis*), and caribou (*Rangifer tarandus*). In the 1990s, wood bison (*Bison bison athabascae*) were reintroduced to northeastern BC. The Project is within the Southern Mountain caribou ecotype. The Local Population Unit (LPU) mapping for Southern Mountain caribou differs between the provincial and federal data. Based on draft provincial mapping, the entirety of the mine site, majority of the Site Access Road, and majority of the Transmission Line are within Matrix habitat of the Quintette LPU. The closest Core habitat for this LPU, a High Elevation Winter-Summer Range, is present approximately 8 km southeast of the Project. The Rail Loop, Rail Loadout Facility, and the Clean Coal Haul Road are within the Burnt Pine LPU, which is listed as an extirpated subpopulation (Government of BC 2024a). Based on federal caribou mapping (Environment Canada 2014), the entirety of the mine site is outside both LPU boundaries; the majority of the Site Access Road, majority of the Transmission Line, and the Substation are within the Quintette LPU; and the Rail Loop, Rail Loadout Facility, and majority of the Clean Coal Haul Road are within the Burnt Pine LPU.

8. EXISTING HUMAN ENVIRONMENT

The Project is located in the Peace River Regional District (PRRD). The PRRD has a population of 66,477 residents, 7 incorporated communities and 4 electoral areas that represent over 40 unincorporated communities (PRRD 2024). The seven incorporated communities within the PRRD include: Chetwynd, Tumbler Ridge, Hudson's Hope, Dawson Creek, Pouce Coupe, Taylor, and Fort St. John.

The primary industries active in the area include oil and gas, coal mining, ranching, tourism, and forestry. Since the early 1980s, oil and gas development, forestry, and coal development have been key economic drivers in the Peace River region.

Land and resource uses within the area surrounding the Project include mining, forestry, trapping, guided hunting, commercial recreation, and outdoor recreation (including fishing, hunting, camping, hiking, snowmobiling, all-terrain vehicle riding, and backcountry skiing).

There are private land parcels located along the Sukunka River FSR (Parcel Identifier [PID] 009621351), at the junction of Sukunka River FSR and Highway 29 (PIDs 004301340, 01153345, 014827115, and 025084291), and at the Rail Loadout Facility and Rail Loop next to Highway 97 (PIDs 004522273, 028084322, 014913569, and 014903121).

The Project overlaps several land-use tenures, including a tree farm licence, oil and gas right-of-way and tenures, a wind power investigative licence, four registered traplines, and three guide outfitter areas.

CTI Plus completed an Archaeological Impact Assessments in advance of the 2020 exploration work. There are areas of moderate to high archaeological potential in the NW and SE blocks, which are being further investigated in 2024 and 2025.

The Project is located within Local Health Area 531 (Peace River South), which is within Health Service Delivery Area 53 (Northeast) of the Northern Health authority, i.e., Northern Health (Northern Health 2024a). There are four hospitals in the area surrounding the Project, located in Chetwynd, Fort St. John, Dawson Creek, and Mackenzie. Two health centres (diagnostic or treatment) are located in Hudson's Hope and Tumbler Ridge (Northern Health 2024b).

No federal regional or strategic assessments, studies, or plans have been undertaken in the area surrounding the Project under sections 92, 93, or 95 of the IAA (2019).

9. SUMMARY OF ENGAGEMENT

CTI Plus is committed to conducting meaningful engagement with Indigenous nations that are potentially affected by the Project, or who may have an interest in the Project. Engagement will align with Indigenous nations' specific processes and protocols, be built upon the International Association of Public Participation framework for public engagement (International Association for Public Participation n.d.), and consider direction provided by BC EAO and the Agency.

In 2019, CTI Plus initiated engagement activities with Indigenous nations in Treaty 8 whose territories overlapped with the Project. At the time of preparing the IPD, Halfway River First Nation, Horse Lake First Nation, McLeod Lake Indian Band, Saulteau First Nations, and West Moberly First Nations have expressed interest in being engaged throughout the Environmental Assessment process. Other Indigenous nations will continue to be informed of the Project and provided with opportunities to engage throughout the process. CTI Plus is committed to involving potentially affected Indigenous nations to integrate their interests, concerns, and Indigenous Knowledge into the Project design, mitigation measures, and the Environmental Assessment as per their preferences and protocols.

The EAO and the Agency will be the lead regulatory agencies in the Environmental Assessment process and will establish a joint early engagement process once the IPD is accepted. CTI Plus has initiated engagement with the EAO and the Agency on the Project and will continue to identify and engage other federal and provincial government agencies, municipal governments, the public, and other stakeholders as the Environmental Assessment process advances.

Through engagement thus far, CTI Plus has begun building relationships with Indigenous nations, regulatory agencies, local governments, and the public, and has documented any issues and concerns expressed about the Project and Project activities. Issues and concerns raised during engagement will be further explored with Indigenous nations, regulatory agencies, local governments and the public, and will be considered by CTI Plus when finalizing Project design and developing Project mitigation measures.

Full details on the engagement process and activities are provided in the Rocky Creek Metallurgical Coal Engagement Plan (CTI Plus 2024).

10. POTENTIAL PROJECT EFFECTS

A preliminary assessment of possible Project effects is identified in Table 10-1. The Environmental Assessment will also consider potential effects of the environment on the Project and cumulative effects.

TABLE 10-1 PRELIMINARY LIST OF POSSIBLE PROJECT EFFECTS

Component	Potential Effect
Physical Environment	
Air Quality and Greenhouse Gas Emissions	• Fugitive dust emissions from material handling, blasting, vehicle, and processing can increase ambient particulate matter concentrations that can negatively affect human and wildlife health, and increases in dust fall deposition can affect vegetation and waterbodies. • Combustion emissions from vehicles and equipment can result in increases in ambient concentrations of nitrogen dioxide (NO_2), sulphur dioxide (SO_2), and other contaminants that can negatively affect human health and vegetation.
Noise and Vibration	• Noise from mining can result in increases in noise levels for human and wildlife receptors. • Vibrations from blasting and equipment may affect human and wildlife receptors. • Vibration can impact to geotechnical stability near mine site infrastructure.
Geology, Soils and Terrain	• Loss of soil profile and changes to terrain from vegetation removal, overburden removal, waste storage rock, and development of open pit mine. • Changes to soil quality due to changes in chemical and physical soil characteristics during mining and reclamation activities. • Long term storage of soils leading to loss of soil productivity.
Groundwater	• Changes to groundwater quality and quantity from metal leaching / acid rock drainage (ML/ARD) (waste piles, pits) or chemical contamination (e.g., fuel spills) or over-extraction. • Changes to groundwater quality and quantity from mining interaction with groundwater table resulting from changes to topography including disturbance to bedrock and surficial materials. • Changes to groundwater quality interactions between groundwater and mine-influenced surface water. • Changes to groundwater quality from water infiltration through waste rock, pit walls, mine pits, etc.
Hydrology and Surface Water Quality	• Changes in water quality downstream of the mine site from discharge of treated mine contact water, site runoff erosion/sedimentation, blasting residue leaching, interactions with groundwater, accidents/spills, or ML/ARD risks. • Potential effects could change concentrations of key parameters including metals, physical parameters (pH, temperature, turbidity/total suspended solids, etc.), which affect suitability to downstream uses, toxicity to aquatic life, and nutrient levels. • Changes in flow regime and sediment loading in watercourses. • Erosion/deposition associated with changes in surface water flow regime. • Changes in groundwater-surface water interactions.
Biological Environment	
Fish and Fish Habitat/ Aquatic Resources	• Direct loss or change in quantity of aquatic habitat due to mine infrastructure. • Change in quantity and quality of aquatic habitat resulting from alteration of stream flows. • Change in water quality resulting in potential health effects to aquatic resources and aquatic species (e.g., fish, benthic invertebrates, amphibians, and birds). • Change in amount, suitability, migration, and distribution of habitats (including sediment quality) for fish or aquatic organisms from road upgrades or sediment/erosion inputs at stream crossings.

Component	Potential Effect
Vegetation and Ecosystems	• Loss and/or alteration of ecosystems, vegetation and wetlands from land clearing and mine construction. • Health effects on vegetation due to changes in air, water, soil quality and dust deposition. • Deposition of dust on plants and soil, which can result in uptake of metals to plants, which are then consumed by wildlife.
Wildlife and Wildlife Habitat	• Loss and/or alteration of wildlife habitats, including migratory bird habitat, from land clearing and mine construction. • Sensory disturbance to wildlife (light and noise). • Disruption of wildlife (e.g., bears, small furbearers) seasonal movement patterns in regional and local landscapes. • Direct mortality of wildlife due to wildlife-vehicle collisions and indirect mortalities from mine operations. • Changes to population dynamics, including potentially moose, bears, small furbearers due to changes to predator-prey dynamics. • Health effects on wildlife due to changes in air, water, and soil quality. • Loss of riparian habitats affecting waterbirds and amphibians that use lentic and lotic environments.
Social, Health, Economic and Heritage Environment	
Community Infrastructure and Services, and Community Well-being	• Changes to and/or maintenance of community and individual health and well-being. • Health and safety of workers and public. • Changes to local community services and infrastructure due to either Project demand or Project-driven population change.
Human Health	• Change to particulate matter concentrations (e.g., $PM_{2.5}$ and PM_{10}) which may cause health risks to workforce. • Deposition of dust to plants and soil, which can result in uptake of metals to plants which are then consumed by people. • Health effects due to changes in water quality. • Increased levels of noise and traffic can cause stress or harm, such as sleep disturbance.
Employment and Economy	• Provincial and local economic stimulus via Project procurement and contracting for goods, services, and personal services, and consumer spending of employees. • Employment, income, and local government revenue generation and gross domestic product benefits. • Changes to employment, employment income, and training. • Changes to gross domestic product. • Changes to local government revenues and expenditures. • Changes to wage and non-wage economy due to Project-driven changes in hunting, trapping, and gathering. • Changes to local population and demographics due to Project-driven labour market changes.
Non-traditional Land Use	• Changes to opportunities associated with public and tenured land and resources, including changes to use of and/or access to certain public lands and waters and availability of certain species.
Heritage Resources	• Effects to heritage resources due to land clearing, mining, and associated infrastructure.

Component	Potential Effect
Indigenous Interests	
Sites of Historical, Archaeological or Cultural Importance	• Changes to resource integrity and increased or decreased accessibility to paleontological, archaeological, or historical sites could result during all Project phases.
Current Use of Lands and Resources for Traditional Purposes	• Change in the ability to access preferred locations used for traditional purposes. • Change to the safe and productive use of the land for traditional purposes by Indigenous nations. • Changes in presence, absence, abundance, quality or spatial distribution of freshwater, terrestrial, or other resources that are currently used for traditional purposes. • Changes in the quality of experience associated with the current use of lands and resources for traditional purposes as a result of items such as increased activity in the area, noise, dust, light, etc. • Changes to Indigenous interests including socio-economic status, community well-being and cultural sustainability (e.g., the ability to transfer Indigenous knowledge.
Indigenous Nations' Health, Social or Economic Conditions	• Potential effects are related to the Project's potential impacts to the biophysical environment and to social and economic factors (e.g., related to food security, transmission of knowledge, employment). These could, in combination, potentially affect legal, spiritual, and cultural practices; transmission of traditional culture, knowledge and law; and improve employment and economic opportunities. • Identified Indigenous interests related to fish, caribou, and surface water quality are addressed in the physical and biological environment components of this table.
Components of the Environment that are within the Legislative Authority of the Federal Government	
Fish and Fish Habitat	• Direct loss or change in quantity of aquatic habitat due to mine infrastructure. • Change in quantity and quality of aquatic habitat resulting from alteration of stream flows. • Change in water quality resulting in potential health effects to aquatic resources and aquatic species (e.g., fish, benthic invertebrates, amphibians, and birds). • Change in amount, suitability, migration, and distribution of habitats (including sediment quality) for fish or aquatic organisms from road upgrades or sediment/erosion inputs at stream crossings.
Aquatic Species at Risk (as defined by SARA)	• There are no aquatic species listed under the *Species at Risk Act* (2002) in the vicinity of the Project.
Migratory Birds	• Loss and/or alteration of migratory bird habitat, from land clearing and mine construction.
Potential Effects outside of BC and Canada or on Federal Land	
Potential Effects outside of BC within Canada	• No potential effects are anticipated outside of BC within Canada.
Potential Effects Outside of Canada	• No potential effects are anticipated outside of Canada.
Potential Effects on Federal Lands	• No potential effects are anticipated on Federal lands.

Notes:
BC = British Columbia; AIA = Archaeological Impact Assessment; ML/ARD = metal leaching / acid rock drainage; NO_2 = nitrogen dioxide; PAG = potentially acid generating; $PM_{2.5}$ = fine particulate matter with a diameter of 2.5 microns or less; PM_{10} = particulate matter with a diameter of 10 microns or less; Project = Rocky Creek Metallurgical Coal Project; SARA = *Species at Risk Act* (2002); SO_2 = sulphur dioxide

11. CLOSING

The Rocky Creek Metallurgical Coal Project (the Project) is a proposed open pit metallurgical coal mine. The Project would provide employment and other economic benefits to communities in northeast BC.

Through the IPD, CTI Plus is providing an early design of the Project with the intention that this document will form the basis for the provincial Early Engagement Phase, which will help shape Project design and other details. The assessment process will be initiated when the EAO seeks public comments on the IPD. Regulators, agencies, Indigenous nations, and the public will have the opportunity to provide initial feedback on the Project and its components that are still being evaluated.

Following engagement on the IPD, CTI Plus's next step in the assessment process will be the preparation of the Detailed Project Description, which will present a more refined design and consider input provided by government agencies, Indigenous nations, and the public during the Early Engagement Phase.

12. REFERENCES

Legislation and Regulation

Climate Change Accountability Act, SBC 2007, c. 42.

Environmental Assessment Act, SBC 2018, c. 51.

First Nations Land Management Act, SC 1999, c 24.

Greenhouse Gas Emission Reporting Regulation, BC Reg 249/2015.

Impact Assessment Act, SC 2019, c. 28, s. 1.

Physical Activities Regulations, SOR/2019-285.

Reviewable Projects Regulation, BC Reg 243/2019.

Species at Risk Act, SC 2002, c. 29.

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