

Telkwa Coal Draft Assessment Information Requirements (dAIR) Issues

We are providing this as a summary of the issues we believe need to be addressed in the Telkwa Coal draft Application Information Requirements. This can form the basis for comments by the public to the Provincial Environmental Assessment Office. These comments are due by July 23, 2020 and can be submitted through this website link:

<https://projects.eao.gov.bc.ca/p/5b905af23965330024d5b706/documents>

1. Size Matters

When Telkwa Coal first proposed this project, it stated that its plan was to develop an open-pit coal mine producing 240,000 tonnes of coal per annum (tcpa) of product. This production level happened to be just under the then existing Provincial Environmental Assessment threshold of 250,000 tcpa. WMIOV and others complained to the Ministry about what seemed to be a transparent attempt to get around the EA process.

Telkwa Coal then revised its proposal and submitted a draft mine plan identifying the mine project's objective to be 750,000 tcpa.

However, since then, in its public statements to the business community contained in its Corporate Reports, Telkwa Coal has repeatedly stated that its true objective is to "ramp up" to 1.35 million tonnes per year. (See, e.g. Allegiance Coal (Telkwa Coal's Corporate parent) Corporate Presentation, May 2020, p. 8.) Despite this, the Environmental Assessment office continues to review this proposal as if it were for a mine producing at the 750,000 tcpa level.

So which is it? If 1.35 million tonnes, it simply does not make sense for the Environmental Assessment to take place based on misinformation about the scope of the project.

Size matters because it affects all of the potential environmental and social impacts. Just as one example, while Telkwa Coal currently describes its proposed water usage for cleaning coal as 15,000 litres per hour, under the 1.35 million tonne scenario, usage would have to be almost twice that. What effect will this have on toxins, water runoff, water sources, capacity to control acid rock drainage (ARD) and cumulative effects?

RECOMMENDATION: That the EAO require Telkwa Coal to amend its application to reflect its true plan which is to mine at least 1.35 million tonnes per annum and that the dAIR be revised accordingly.

2. Water and Fish

Water - The dAIR relies on what are known as Valued Components (VC). These are the attributes and potential areas of concern that are most important in judging the mine proposal's merits.

Surprisingly, Water is not identified in the dAIR as one of the Valued Components. Instead, it is considered an Intermediate Component (IC).

ICs can be ignored in the final analysis, as long as the VCs they are related to (in this case fish) are sufficiently protected or, even if there are ill effects, those effects can be adequately mitigated. In other words, as long as there are not unacceptable risks to the fish or if mitigation is possible, then protecting water will not be a priority under the current dAIR.

Water has both high societal value and high ecological value and therefore should be selected as a Valued Component as part of this Environmental Assessment, and not just as an Intermediate Component. Our rivers and our water quality are of immense historical and cultural importance to the people of the Bulkley/Wetzinkwa Valley. The attempt to diminish that importance in the review of this project is frankly surprising, especially given the quite serious risks the project poses to these treasured parts of our heritage.

Fish – The boundaries for review under the dAIR are limited to the Telkwa and a short stretch of the Bulkley just down stream from the confluence. Given the importance of the rivers and the fish, as well as the significant threats that already exist to fish survival, this seems quite inadequate.

In addition, while the dAIR refers to relying on current science-based thresholds for contaminants that pose a risk to fish, those thresholds may not be sufficient to actually protect fish stocks. Our fish runs are already imperilled. Levels of heavy metals in the Telkwa are already significant. We suggest that the impact assessment include a comprehensive literature review to select conservative effect thresholds that ensure potential impacts to valuable aquatic resources are not missed.

RECOMMENDATIONS:

- That Water be treated as a Valued Component in the dAIR.
- That the boundaries set for analysis of adverse effects include the entire Skeena system.
- That the precautionary principle be applied due to the pre-existing threats to fish survival.
- That the AIR call for a review of the latest scientific literature and analysis to help determine appropriate thresholds for fish toxicity, including sub-lethal effects.

3. Water Usage - Rivers, Creeks and Underground Sources

A coal mine of this nature requires the use of large volumes of water for washing the product (as noted above, according to Telkwa Coal 15,000 litres per hour at the 750,000 tonne per year production rate). The washing of the coal will take place alongside the mine site. Telkwa Coal claims that it hopes to obtain enough water from the neighbouring creeks, runoff and underground sources to meet its needs in this regard. If not, it will draw from other sources in the Regional District. We assume this means the Telkwa River because what other nearby sources are there?

Neighbours are also concerned that the use of underground sources will deplete the wells they rely on for their household water supply.

RECOMMENDATION: The AIR must require sufficient information to determine if the water budget for the mine project will account for the project impacting a wider water system. In practical terms,

the water budget that Telkwa Coal provides for and how the characteristics of the water (quantity, intensity and quality) are managed to balance it, must be done in such a way as to satisfy all of the constraints on all water issues including fish survival, simultaneously.

3. Acid Rock Drainage and Metal Leaching

a. Tailings Impoundment - Separation of Materials

Telkwa Coal acknowledges that its operations will produce significant quantities of Potential Acid Generating (PAG) materials. PAG results in Acid Rock Drainage if exposed to the elements. There is also a substantial risk of leaching of heavy metals. Heavy metals are highly toxic to fish. To prevent ARD, Telkwa Coal must separate PAG from non- PAG and then remove the PAG from contact with the environment forever.

Telkwa Coal's current plan is to create a containment pond or ponds alongside the mine and place the PAG material and other toxic sources into this containment area and cover it with water. The resulting tailings impoundment(s) will cover an area about 1/2 the size of Tyhee Lake and about 40 metres deep.

To carry out this plan, Telkwa Coal must separate the PAG material and the non-PAG material. The PAG material would then be submerged in the containment areas and the non-PAG material would be piled alongside the mine pit and impoundment areas. However, according to one of the reviewers during the similar Manalta project in the mid-1990's, it is highly unlikely that such a separation process could work.

Even if the separation could occur, it would take a considerable amount of time for this to take place. What happens to the acid generating material in the meantime since, as soon as the material is exposed to the environment it starts acidifying and, thus, creating polluted runoff?

b. Tailings Impoundment - Containment Plan

Once the Acid Rock generating material is submerged in a containment lake, it must be preserved there forever. Reviewers during the Manalta process thought that, given the topography and underlying geology of the area, including the faults and fractures that exist there, it is unlikely that the impoundment would successfully retain the ARD material and/or heavy metals.

RECOMMENDATION:

- The methodology for describing the impact of metal leaching and acid rock drainage must be specified.
- The AIR should include direct reference to best practices for characterizing ML/ARD, such as those included in guidance prepared in 2009 for the British Columbia Ministry of Energy, Mines and Petroleum Resources.
- There must be a detailed geotechnical analysis of the rock formations and likelihood of fractures, faults and other causes of possible loss of stability leading to failure of containment.

5. Water Treatment - Heavy Metals and other Toxins

The mine area contains heavy metals which are toxic to fish. In addition to Cadmium, Aluminum, Copper, Manganese Iron, Nickel and Zinc, there is an open question about the amount of

selenium that will be produced. During the Manalta process, the reviewers concluded that the amount of selenium would be below Provincial threshold levels. However, since that time, the thresholds have been lowered due to findings about fish toxicity.

a. Removal of heavy metals and other toxins

The release of selenium from coal mining has proven to be a significant issue and has been a large driver of water treatment and management requirements at coal projects around the Province. We know from the experience at the Teck mines in the Elk Valley that even the most advanced and expensive technology for removing selenium does not work.

Telkwa Coal proposes to treat water runoff from its operations by cleaning it to a point where it supposedly does not pose a risk to the river and the fish and then to pipe it to the Telkwa River for discharge. Will it be possible to successfully treat and clean the runoff?

b. Discharge to Telkwa River

Even if Telkwa Coal could successfully clean the runoff, how will dumping it into the Telkwa affect water temperature, water flow and other factors critical to water quality and the fish?

The proposed project would discharge mine impacted water directly to the Telkwa River.

Sampling of the Telkwa River indicates that it has levels of cadmium, zinc and lead that are already above BC Water Quality Guidelines (BC WQGs). Any additional loading of these metals would cause further exceedance of BC WQGs in the Telkwa and may have a deleterious effect on fish and other aquatic life.

Further, guidance from BC Ministry of Environment (ENV) states that dilution alone is not an acceptable method of managing mine contact water.

c. Limited Water Treatment

The proposed project involves very limited treatment of mine impacted water prior to discharge to the Telkwa River. The proposed treatment method (sedimentation) would only remove suspended solids and would not have any impact on dissolved materials that are present. There are many industrially proven methods for treating mine contact water of this nature to remove dissolved species.

RECOMMENDATIONS:

- Selenium - That a detailed assessment of selenium release potential and management methods (i.e. selenium treatment, other waste handling methods) be conducted and integrated into the project plan.
- Mine Water Discharge - That an Alternatives Assessment be conducted to evaluate a location for discharge of mine water and that Ministry of Environment guidance on the use of initial dilution zones be incorporated into the mine plan.
- Water Treatment - That a Best Available Technology assessment for water treatment be conducted in accordance with BC ENV guidance. This should be conducted in conjunction with the aforementioned discharge Alternatives Assessment.

6. Allowance for Care and Maintenance:

A common issue in mining projects is that projects are designed with the expectation that they will go from start-up to operations to closure in one continuous span. In actuality, many mines

have periods of care and maintenance when the mine is taken offline for a significant period of time without initiating reclamation and closure activities. It is important to design a mine with allowance for care and maintenance periods and to have a detailed care and maintenance plan that is distinct from the closure and reclamation plan. One area where this may be relevant for the Tenas project is in PAG material handling. Pit capacity must be available at the same time as PAG material is generated in order to avoid temporary surface storage.

RECOMMENDATION: That Care and Maintenance be included in the dAIR as a project phase that is evaluated similar to the way that Construction, Operations, Closure and Post-Closure are included as project phases.

7. Caribou

The Telkwa Caribou herd is listed under the Species at Risk Act and is identified as at threat of imminent extirpation. The herd is currently at approximately 34 animals.

To prevent extinction of the herd, a Wildlife Management Area was recently created in the Telkwa Mountains. The long term goal is to restore a mature forest with limited disturbances in the form of logging, road building and further habitat destruction. The Telkwa Coal Mine location is almost completely within the Telkwa Caribou Wildlife Management Area. It will result in a removal of a substantial area of re-growing forest and create a haul road that will cross a part of the recovery zone. Coal hauling trucks will pass along this road somewhere between every 5 and 10 minutes.

The establishment of the mine is inconsistent with the Caribou recovery plan and will prevent the return of undisturbed mature forests in the area. As a consequence, it will put further pressure on a herd that is already on the brink just as it starts to recover.

RECOMMENDATION: That the AIR should require an assessment of the likely impact on the success of the Caribou recovery program's objective of restoring the herd to a healthy population, not just on one that is so reduced in numbers that it is at this time at imminent threat of extirpation.

8. GHG Emissions – Full cycle including methane and alternatives

While Telkwa Coal identifies this project as intended to produce coal for steelmaking (metallurgical coal) and not for energy production (thermal coal), this does not resolve the question of its effect on greenhouse gas emissions. 90% of the CO₂ contained in metallurgical coal is released during the steel making process. Steel making itself is responsible for somewhere between 5 and 10% of total greenhouse gas emissions worldwide.

Meanwhile, the world is moving away from using coal for steel production and ghg free methods are starting to be implemented.

Also, because the coal seam in Telkwa is associated with coalbed methane, there is a possibility of substantial methane releases during the mining of the coal.

In order to determine the total greenhouse gas impact of this project, the dAIR should require a full review of all releases throughout all stages of development, production, transportation and use.

RECOMMENDATION: That the AIR require sufficient information to allow an analysis of the full ghg effects of the project, including by its use in steelmaking and/or thermal coal operations, as well as the likely amount of methane release. That the AIR also requires information as to whether there are alternatives to using coal in steelmaking that will produce less harmful effect on the environment.

9. Air – Dust

So far, air quality issues have not been addressed in any significant way. As news from Sparwood, B.C. establishes, running a coal mine can produce a significant amount of coal dust:

<http://www.cbc.ca/news/canada/british-columbia/sparwood-teck-coal-mine-1.4696904>

<https://www.thefreepress.ca/news/teck-to-compensate-sparwood-residents-for-dust/>

Sources include blasting, as well as dust blown off waste piles and trucks and while loading and operating railroad cars. So far, we have not heard any significant discussion about how the dust would be controlled at the Telkwa mine site itself. In regards to transportation from the mine to the loadout by truck and from the loadout to the port by train, Telkwa Coal has referred to covering the product with some form of latex material, but there are no details. Even with such a system, coal dust from rail cars can still be a problem:

<https://www.columbiavalleepioneer.com/news/coal-dust-escaping-rail-cars-spurs-b-c-petition/>

The Bulkley Valley already suffers from poor air quality. Our average $PM_{\leq 2.5}$ levels almost always exceed the annual Provincial targets. $PM_{\geq 10}$ is also a problem, mostly from road dust in the spring. How will the blasting, processing, transportation and storage of the coal impact our air quality, especially given that the mine site is generally upwind from Telkwa and Smithers?

RECOMMENDATION: That Air Quality should be treated as a Valued Component and the dAIR must require an assessment of how dust from the mine and associated transportation will affect air quality in the Bulkley Valley. Given the challenges that already affect air quality in this area, the review should take place with the objective of preventing any further degradation of air quality.

10. Noise - Amount/Distance

Obviously, between blasting and heavy truck traffic, the mine and loading operations will produce a significant amount of noise. So far, it appears that the only studies about how much noise will be produced are based on computer simulations. Together with the environment, the quality of life issues valued most by area residents focus on our quiet rural lifestyle (see Regional District Rural Official Community Plan Survey results, 2012).

RECOMMENDATION: That noise should be treated as a Valued Component with the objective of preventing sound disturbance. Testing should be performed using methods that reasonably reflect real life conditions that occur in the Bulkley Valley.

11. Load Out – Flood Plain/ Haul Road impact

According to the Regional District map, the proposed loadout facility site is on a Bulkley River floodplain. From personal experience, we know that this site is subject to flooding from the River. So, the potential is there for flood waters to wash stored coal into the Bulkley.

Tenas Coal's plan is to remove the land for the coal loadout from the ALR. This site is valley bottom, river side rich soil and we do not need to lose any of this vital farmland in the Bulkley Valley. As Tenas Coal intends to store the wash coal on the ground, this land will be polluted for years and the only way to clean it will be to remove the soil.

The haul road's planned path crosses the Helps Creek wetlands watershed for 7 km. We think this wetland and creek should be getting the same consideration as Tenas, Four and Goathorn Creeks. Our concerns here, in addition to the impact on caribou, are impacts to the watershed from road dust and the use of chemicals for dust suppression and these chemicals leaching into Helps Creek.

As noted in the Caribou section, the haul road is also directly inconsistent with one of the main objectives of the Caribou recovery plan, which is to eliminate and not expand linear disturbances and to allow the herd to use the lower elevation forests in an undisturbed fashion.

RECOMMENDATION: That the dAIR include a requirement for a comprehensive assessment of the potential impacts on the Bulkley River from flooding of the loadout site, on the ALR by removal of valuable agricultural land and on wildlife and aquatic environments along the haul road route.

12. Recreation/Life Style impact

Recreation is mentioned under the VC for land and resources. Outdoors recreation is one of the main features of the quality of life which Bulkley Valley residents value. The Hunters Basin/Hankin Plateau area is important to horseback riding and hiking enthusiasts. The mine site sits on top of the only access road into these areas. Will access be protected?

RECOMMENDATION: That the dAIR include a study of recreational interests in areas impacted by the proposed mine development with a description of how those interests can be protected.

13. Telkwa Coal Ltd. Finances and Bond

Allegiance Coal, the company behind the Tenas Project, is a thinly capitalized Australian company with a weak financial position. The following information publicly available as of 2020-6-23 shows Allegiance Coal trading at a price of 7 cents per share, and that it has a market capitalization of only 40.28 million ASD, cash on hand of only 1.43 million ASD, with a debt of 2.32 million ASD, and a negative cash flow of 1.86 million ASD over the twelve trailing months. It has never operated a coal mine.

If there were an accident or malfunction at the mine, or if an accidental release from the containment area occurred after the mine entered its reclamation and post-closure phase, then a reasonable

question is: what resources are available to minimize the environmental and social impacts of the possibility of the company's inability to pay?

RECOMMENDATION:

- The AIR include an analysis of financial resources available for reclamation and long-term maintenance, as well as potential failure of the waste containment systems.
- All sources of funding for remediation of unpredicted impacts and implementation of the closure plan should be specified.

14. Jobs and Economic Opportunities

The dAIR refers to the jobs that would be created through the coal mine project. However, much of the economic opportunities that have arisen in the Bulkley Valley during the last few years have come from such sources as tourism, recreation, amenity migration, home construction and real estate. All of these sectors depend in whole or in part on the preservation of a lifestyle connected to nature and natural beauty. The introduction of an open pit coal mining operation with its associated noise, dust and effects on the natural world will obviously have some negative effects on these economic sectors. For instance, what impact will it have on property values, air and noise pollution and the fishing based tourism economy?

RECOMMENDATION: The AIR should include a full spectrum economic impact analysis that includes a review of the possible negative economic consequences of the project.

15. UNDRIP

BC has adopted the principles of the UN Declaration on the Rights of Indigenous People. Those principles are applicable here since the mine site sits on the territory of the Wet'suwet'en people.

RECOMMENDATION: All aspects of this process must comply with the obligations contained in the United Nations Declaration on the Rights of Indigenous People.