Analysis Report

WHETHER TO DESIGNATE THE **CASTLE PROJECT** IN BRITISH COLUMBIA PURSUANT TO THE *IMPACT ASSESSMENT ACT*

August 19, 2020

Impact Assessment Agency of Canada
Agence d'évaluation d'impact du Canada

Canada

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Purpose

The Impact Assessment Agency of Canada (the Agency) prepared this report for consideration by the Minister of Environment and Climate Change Canada (the Minister) in deciding whether to designate the Castle Project (the Project) pursuant to section 9 of the *Impact Assessment Act* (IAA).

Project

Teck Coal Limited (the proponent) has proposed the Castle Project, an expansion of its Fording River Operations metallurgical coal mine located 30 kilometres north of Elkford, British Columbia (B.C.), five kilometres west of the B.C.-Alberta border and 130 kilometres north of the Canada-United States (U.S.) border (Figure 1). The purpose of the Project is to gain access to an adjacent deposit of more economically mineable coal to the south of the existing Fording River Operations. The Project would increase the area of mining operations by approximately 36 percent but would maintain the existing production capacity of approximately 27 400 tonnes per day.

Context of Requests

The Minister has received the following requests to designate the Castle Project under subsection 9(1) of IAA:

- Designation Request 1 - Tribal Councils of the Confederated Salish and Kootenai Tribes and the Kootenai Tribe of Idaho on May 21, 2020;
- Designation Request 2 - Kainai (Blood Tribe) and Siksika Nations on June 19, 2020;
- Designation Request 3 - Ktunaxa Nation Council on June 23, 2020;
- Designation Request 4 - Ecojustice on behalf of Wildsight Society (Wildsight) on June 23, 2020;
- Designation Request 5 - U.S. Environmental Protection Agency on June 23, 2020;
- Designation Request 6 - 17 U.S. Conservation Groups on July 13, 2020;[1]
- Designation Request 7 - Yellowstone to Yukon Conservation Initiative on July 15, 2020; and
- Designation Request 8 – 15 Canadian Non-Governmental Organization Groups on July 21, 2020.[2]

[1] Headwaters Montana, National Parks Conservation Association, Sierra Club, Idaho Chapter Sierra Club, Montana Chapter Sierra Club, Montana Wildlife Federation, Montana Environmental Information Center, Montana Wilderness Association, American Rivers, Idaho Conservation League, Conservation Northwest, Montana Trout Unlimited, Flathead Valley Trout Unlimited, Kootenai Valley Trout Unlimited, Flathead Wildlife, SalmonState and Salmon Beyond Borders.

[2] Canadian Parks and Wilderness Society, British Columbia, Sierra Club BC, Nature Canada, Amnesty International Canada, MiningWatch Canada, Canadian Parks and Wilderness Society, Southern Alberta, BC Mining Law Reform Network, West Kootenay EcoSociety, First Nations Women Advocating for Responsible Mining, RAVEN (Respecting Aboriginal Values and Environmental Needs), Rivers Without Borders Canada, SkeenaWild Conservation Trust, Northern Confluence Initiative, BC Nature, Fair Mining Collaborative

Table 1 summarizes the concerns expressed by each request. Designation Requests 2, 3, 4 and 8 also asserted that the Project should be a designated project under subsection 19(g) of the *Physical Activities Regulations* and in the alternative, requested that the Minister designate the Project under subsection 9(1) of IAA.

Between May 21 and July 24, 2020, the Minister received over 650 emails from members of the public providing comment and requesting that the Project be designated and referred to review panel, related to a campaign coordinated by Wildsight. Wildsight is an environmental non-governmental organization based in the Kootenay Region of B.C. In addition, 138 public comments were posted to the Canadian Impact Assessment Registry (the Registry). A summary of these comments can be found in the section on *Public Views* and in Annex 1.

The Agency received input from the proponent, federal and provincial authorities, the State of Montana and the Mining Association of Canada (Table 2).

The Project is subject to review under B.C.'s *Environmental Assessment Act*. B.C.'s Environmental Assessment Office (EAO) accepted an Initial Project Description (IPD) on April 9, 2020, formally commencing the Early Engagement phase of the provincial process. The Agency considered the IPD in its analysis, as well as public comments provided through the provincial assessment process. The IPD is posted to the Registry and comments are summarised in the *Public Views* section below and in Annex I.

Figure 1: Castle Project Location

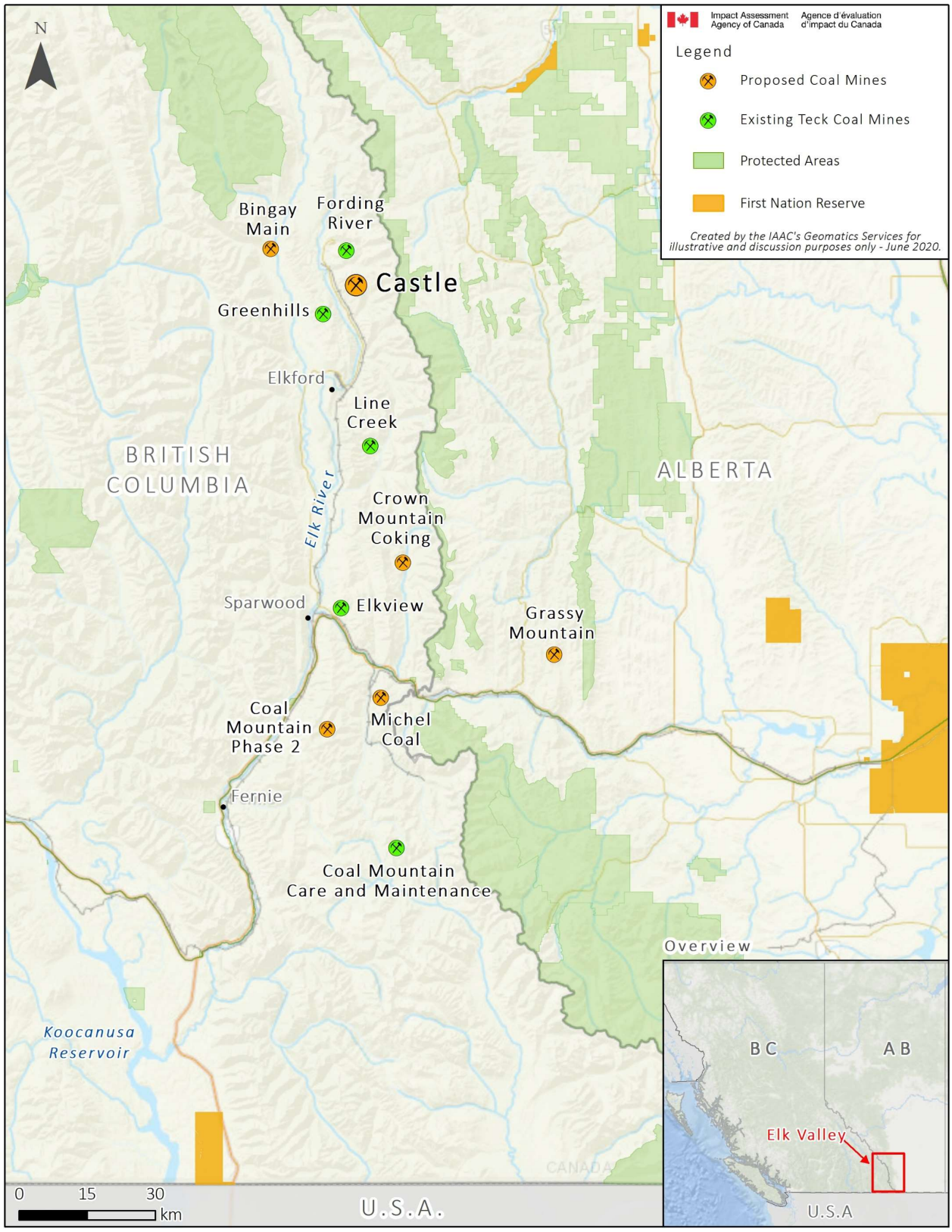

Table 1 – Summary of Designation Requests

Requester	Key Issues Raised
Tribal Councils of the Confederated Salish and Kootenai Tribes and the Kootenai Tribe of Idaho	transboundary impacts in U.S. and traditional Tribal territory including elevated selenium in the Elk River, Koocanusa Reservoir and the Kootenai River; impacts to fish including Westslope Cutthroat Trout in the upper Fording River and contaminant levels in fish in Montana that exceed U.S. EPA thresholds impacts to wildlife and traditional cultural uses by the Tribes; past and ongoing investigations by Environment and Climate Change Canada (ECCC) on effects to water quality and fish; ineffective mitigation of effects to water quality including unproven technology; the importance of cumulative effects assessments; and the lack of coordinated efforts to improve water quality in the Elk Valley.
Kainai (Blood Tribe) and Siksika Nations	impacts to the exercise of Kainai's (Blood Tribe) and Siksika's Aboriginal and treaty rights and related cultural practices; phased approach to expansions at Fording River Operations may be designed to avoid federal assessments; effects within federal jurisdiction including to fish and fish habitat, migratory birds, wildlife and wildlife habitat and environmentally sensitive lands; cumulative effects of historical and ongoing coal mining in the Elk Valley, on both sides of the B.C.-Alberta border; and transboundary effects in Alberta and to the Kootenai watershed in Idaho and Montana including from selenium pollution.
Ktunaxa Nation Council	impacts to fish and fish habitat, water quality, cumulative effects, and degradation or loss of fish habitat, particularly impacts to Westslope Cutthroat Trout; impacts to federally listed Species at Risk and migratory birds, including their habitat; transboundary impacts of the Project in the U.S., particularly impacts to water quality and fish in the Koocanusa Reservoir and Kootenai River, and impacts from greenhouse gas emissions; loss of Ktunaxa cultural, historical and archeological sites due to the Project's land disturbance; loss of access to, and sensory disturbance impacting preferred places, preferred species and resources, and preferred practices central to Ktunaxa use, language and identity; and loss of opportunity to carry out cultural practices, including teaching, traditional use and harvesting activities, fishing, hunting and gathering, in both the Project area and the surrounding area.

Requester	Key Issues Raised
Ecojustice on behalf of Wildsight Society	impacts to fish and their habitat due to increased selenium and nitrate pollution and cumulative effects; impacts to migratory birds, particularly species reliant on aquatic environments currently affected by selenium and other pollutants, including the Spotted Sandpiper and American Dipper; potential adverse effects to wildlife due to the disruption of connectivity corridors between the Kootenay National Park (federal lands) to important habitat in Alberta and Montana; transboundary impacts of the Project in the U.S. from water pollution to fish populations downstream in the Koocanusa Reservoir and into the U.S. Kootenai River; and potential adverse effects to Species at Risk and their habitats, particularly species reliant on high-elevation grasslands.
U.S. Environmental Protection Agency	transboundary impacts to aquatic resources that could impact Koocanusa Reservoir and the Kootenai River in the U.S. including water quality, pollutant loading and fish and fish habitat recent declines in Westslope Cutthroat Trout populations in the Fording River near the Project site, fish kills in Line Creek and ongoing Canadian federal investigations related to impacts to aquatic life in the Elk Valley. the Project is near a threshold set in the Project list and involves an unproven technology
17 U.S. Conservation Groups	transboundary impacts to White Sturgeon in the Kootenai River and impacts to water quality in Montana and Idaho; concern that the *Boundary Waters Treaty* is being violated; cumulative impacts from ongoing and future mining on wildlife and fish; concerns that the provincial regulatory system will not adequately protect the watershed; unproven technology may not prove effective; and requested the project be referred to review panel.
Yellowstone to Yukon Conservation Initiative	the provincial assessment process would not assess transboundary effects; potential impacts to the rights of Indigenous people are a matter for federal concern; long-term and cumulative effects to wildlife including effects to migration corridors and to fish; and Implications to Canada's ability to meet national climate goals.

Requester	Key Issues Raised
15 Canadian Non-Governmental Organization Groups	potential exceedance of expansion threshold set in the Project list, due to inaccuracies in the proponent's calculations of the area of mining operations; cumulative impacts to Species at Risk, such as Westslope Cutthroat Trout, Grizzly Bear, and Whitebark Pine, including effects to migration corridors and fish habitat; the provincial assessment process would not assess transboundary effects of selenium pollution to the Kootenai River and aquatic resources in Montana and Idaho; regulatory mechanisms have not adequately regulated water pollution from active mining projects in the Elk Valley; proposed usage of water treatment technology that lacks independent verification of effectiveness; implications of upstream greenhouse gas emissions (GHG) to Canada's ability to meet national GHG reduction commitments, and the climate impacts of downstream emissions from use of mined coal; potential impacts to the rights of Indigenous people and changes to the environment that could affect Indigenous people in Canada and the U.S.; and requested the Project be referred to review panel.

Table 2 – Input received from Federal Authorities and Other Groups

Federal Authorities	
Environment and Climate Change Canada	Global Affairs Canada
Health Canada	Parks Canada
Fisheries and Oceans Canada	Employment and Social Development Canada
Transport Canada	Women and Gender Equality
Natural Resources Canada	Indigenous Services Canada

Other Groups	
Environmental Assessment Office	Mining Association of Canada
Ministry of Environment and Climate Change Strategy	B.C. Chamber of Commerce
Ministry of Forests, Lands, Natural Resource Operations and Rural Development	Fernie Chamber of Commerce
Ministry of Energy, Mines and Petroleum Resources	Elkford Chamber of Commerce
Montana Department of Environmental Quality	District of Elkford

Project Context

Project overview

The Castle Project is an expansion of Fording River Operations, an open-pit metallurgical (steelmaking) coal mine located in B.C.'s Elk Valley that has been in operation since 1972. The coal produced is exported to international markets. Fording River Operations produces approximately one third of the proponent's coal extracted from the Elk Valley and is among the largest coal mining operations in Canada.

Teck Coal Limited owns and operates five metallurgical coal mines in the Elk Valley:

- Fording River Operations;
- Greenhills Operations;
- Line Creek Operations;
- Elkview Operations; and
- Coal Mountain Operations (in care and maintenance).

In addition to the Castle Project, there are three other proposed coal mining projects currently subject to active federal environmental assessments in the Elk Valley.[2]

- Centermount Coal Limited's Bingay Main Coal Project;
- North Coal Limited's Michel Coal Project; and
- NWP Coal Canada Limited's Crown Mountain Coking Coal Project.

The purpose of the Castle Project is to gain access to an adjacent deposit of more economically mineable coal to the south of the existing Fording River Operations. The Project would maintain Fording River Operation's production capacity at 10 million tonnes of coal per year (27 400 tonnes per day). The Project would increase the area of mining operations from approximately 5 630 hectares to 7 640 hectares (a net increase of 2 010 hectares). As the mineable reserves at Fording River Operations decrease, production from the Castle Project will increase. The Castle Project is expected to supply all coal for Fording River Operations by the early 2030s.

Pre-construction activities are planned to begin in 2023 and production is planned to begin in 2026. Teck Coal Limited has not yet developed a detailed site design plan for the Castle Project and, although the mine life is expected to be several decades, the exact mine life is currently unknown.

The Project would be located in the Regional District of East Kootenay, on provincial Crown land and property owned by Teck. Historical and ongoing coal mining in the Elk Valley is linked to increased levels of selenium in the region's waters which flow south into the U.S.[3]

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[2] In addition, a federal environmental assessment of Teck's Coal Mountain Phase 2 Project commenced in 2014. In 2016, Teck paused the federal assessment and it remains on hold.

[3] Selenium is an essential metalloid that occurs naturally in association with coal seams and other mineral formations. It can become of ecotoxicological concern when activities such as mining mobilize the element, resulting in elevated concentrations in water and sediment, leading to the bioaccumulation of selenium in biota and potentially toxic effects.

The Project would be located within ʔamakʔis Ktunaxa, the territory of the Ktunaxa Nation. Project effects could extend to where other Indigenous peoples also exercise Aboriginal rights including:

- Treaty 7 Nations including Tsuut'ina, Kainai (Blood Tribe), Siksika, Stoney Nakoda Nations and Piikani;
- Métis people (Métis Nation British Columbia and Métis Nation of Alberta – Region 3); and
- Shuswap Indian Band.

Project components and activities

Table 3 summarizes components that will be newly constructed for the Castle Project and existing components already constructed for Fording River Operations.

Table 3 – New and Existing Project Components

New Project-specific components	Ongoing Fording River Operations components
A mine pit or pits on Castle Mountain	Mining equipment including drills, shovels and haul trucks
Additional waste rock storage areas	Coal processing plant facilities and coal stockpiles
Additional fine tailings storage to augment the existing Fording River Operations facilities	Tailings and combined coarse and fine rejects handling and storage
Water management that meets existing and future permit requirements	Existing and permitted waste rock storage areas
Satellite explosives magazine(s)	Explosives storage and manufacturing
Laydown areas	Access roads
Access roads	Power lines and utilities
Power lines and utilities	Offices, warehouses and fueling facilities
Satellite office(s), warehouses, maintenance and fueling facilities	Water treatment and sewage facilities
	Railroads

Analysis of Designation Request

Authority to designate the Project

The *Physical Activities Regulations* (the Regulations) under IAA identify the physical activities that constitute designated projects. The Regulations describe a coal mine expansion that would increase the area of mining operations by 50 percent or more and would have a total coal production capacity of 5 000 tonnes per day or more. Prior to receiving the designation request, on April 3, 2020, the Agency issued a letter to the proponent stating that the Agency is of the view that the Project is not described in the Regulations. The Project, as described in the proponent's IPD and submission to the Agency, is an expansion of an existing coal mine that would increase the area of mining operations by 36 percent and would have a production capacity of 27 400 tonnes per day. Despite the production capacity of the Project being above that described in the Regulations, the increase in the area of mining operations of the Project is less than the value set in the Regulations.

Under subsection 9(1) of IAA the Minister may, by order, designate a physical activity that is not prescribed in the Regulations. The Minister may do this, if, in the Minister's opinion, the physical activity may cause adverse effects within federal jurisdiction or adverse direct or incidental effects, or public concerns related to those effects warrant the designation.

The Agency understands that the Project has not substantially begun nor has a federal authority exercised a power or performed a duty or function that would permit the Project to be carried out, in whole or in part, and therefore the Minister is not prohibited from designating this Project pursuant to subsection 9(1) of IAA.

Under subsection 9(2) of IAA, prior to designating the Project, the Minister may consider adverse impacts that the Project may have on the rights of Indigenous people of Canada recognized and affirmed by section 35 of the *Constitution Act, 1982*.

Potential adverse effects within federal jurisdiction

The long history of coal mining in the Elk Valley has impacted the environment in particular from the release of selenium which can be toxic to biota. These impacts include effects within federal jurisdiction (as defined in section 2 of IAA). The Project has the potential to cause direct adverse effects to areas of federal jurisdiction, as well as cumulative effects with existing conditions in the Elk Valley and the transboundary environment. The scale of the existing and future effects to water quality, in particular from contamination from selenium and the uncertainty associated with new technology required to treat these effects, means that potential direct and cumulative effects of the Project likely cannot be adequately minimized through project design and by the application of standard mitigation measures.

The Ktunaxa Nation Council, Kainai (Blood Tribe) and Siksika Nations, Tribal Councils of the Confederated Salish and Kootenai Tribes and the Kootenai Tribe of Idaho, Wildsight and Yellowstone to Yukon Conservation Initiative cited potential adverse effects within federal jurisdiction as a main reason to designate the Project. In addition, when providing input to the designation request process, Fisheries and

Oceans Canada, Environment and Climate Change Canada, Global Affairs Canada, Health Canada, Women and Gender Equality Canada, the Montana Department of Environmental Quality, and members of the public expressed concerns that the Project may cause adverse effects within federal jurisdiction.

The following sections summarize the potential effects the Project may have on areas of federal jurisdiction and highlights the gaps between those effects and the anticipated existing legislative mechanisms in place. Annex I provides a summary of the potential adverse effects, mitigation measures proposed by the proponent, concerns raised and anticipated legislative mechanisms if the Project proceeds.

Fish and Fish Habitat

The Project may cause adverse direct and cumulative effects to fish and fish habitat, including to fish species listed under the *Species at Risk Act*. Concerns that the Project may affect fish and fish habitat were raised by:

- Ktunaxa Nation Council;
- Kainai (Blood Tribe) and Siksika Nations;
- Tribal Councils of the Confederated Salish and Kootenai Tribes and the Kootenai Tribe of Idaho;
- Wildsight;
- The 17 U.S. Conservation Groups;
- The 15 Canadian Non-Governmental Organization Groups;
- Fisheries and Oceans Canada;
- Environment and Climate Change Canada;
- Global Affairs Canada;
- Montana Department of Environmental Quality; and
- members of the public.

The Project is located next to the upper Fording River, a major tributary to the Elk River. The upper Fording River, which is the aquatic receiving environment for the Project, contains a genetically unique and isolated population of Westslope Cutthroat Trout.[4] The B.C. population of the Westslope Cutthroat Trout is federally listed on Schedule 1 of the *Species at Risk Act* as a species of special concern.[5]

Teck Coal Limited's IPD stated that the Project may cause the loss and alteration of upper Fording River fish habitats from the construction of the area of mining operations and the Project may degrade water quality from effluent discharge that includes the release of selenium (see Annex 1 for more details on potential Project effects and proposed mitigations). The degradation of water quality from the release of selenium and other contaminants of concern can affect fish health at the individual and population level.[4]

[4] Lemly, D., Review of Environment Canada's Teck Coal Environmental Assessment and Evaluation of Selenium Toxicity Tests on Westslope Cutthroat Trout in the Elk and Fording Rivers in Southeast British Columbia (2014), online: https://www.teck.com/media/2014-Water-review_environment_canada-T3.2.3.2.1.pdf

[5] Species at Risk Act, SC 2002, c 29 [SARA] at Schedule 1.

A study by the proponent released in March 2020 found that the number of adult Westslope Cutthroat Trout in the upper Fording River has decreased by 93 percent in recent years.[6] Although a full investigation into the cause of the decline has just begun, the proponent's Fording River Operations and Greenhills Operations have been adversely affecting water quality in the upper Fording River for many years,[7] and consequently Environment and Climate Change Canada has been investigating alleged violations of the pollution prevention provisions of the *Fisheries Act* from these mines. In late 2018, the Public Prosecution Service of Canada issued a notice to Teck Coal Limited regarding an alleged violation in connection with the release of selenium and calcite. As stated in the proponent's Annual Information Form in 2020, the proponent is currently not in compliance with certain water quality parameters set out in the Elk Valley Water Quality Plan (additional information on this Plan is provided below).[8]

In response to the Agency's request for input to the designation request process, B.C.'s Ministry of Environment and Climate Change Strategy noted that, due to degraded water quality conditions in the Elk Valley, the province has undertaken a considerable amount of work to try and address the impacts of historical and ongoing mining practices. B.C. noted to the Agency that in 2013 the province issued an order under its *Environmental Management Act* compelling Teck to prepare an area-based management plan for the Elk River watershed and the Canadian portion of the Koocanusa Reservoir (the Elk Valley Water Quality Plan) to better address risks associated with cumulative impacts to water quality. The Elk Valley Water Quality Plan was approved in 2014, and since then the proponent has invested $437 million on the plan implementation. Despite these efforts, between December 2016 and January 2020, B.C's Ministry of Environment and Climate Change Strategy issued 75 advisories, 34 warnings, two investigation referrals and eight administrative monetary penalty referrals relating to the proponent's Elk Valley operations. Over the past five years, the Ministry has issued the proponent with over $600,000 in provincial court convictions, fines and penalties for various environmental violations related to water quality in the Elk Valley.

Through the Elk Valley Water Quality Plan, Teck committed to constructing active water treatment facilities in the Elk Valley to stabilize and decrease concentrations of aquatic contaminants including selenium. However, technical and logistical challenges have delayed implementation. The first water treatment facility constructed under the Elk Valley Water Quality Plan was at the Line Creek Operations mine. It was delayed several years and experienced challenges achieving its design criteria. It also caused a fish kill in Line Creek that resulted in charges and a $1.425 million fine under the *Fisheries Act*. The second treatment facility at Fording River Operations was planned to be operating in 2018 but that facility is currently expected to be completed in 2021. In 2019, Teck submitted its Implementation Plan Adjustment to the province, delaying timelines for the construction of planned water treatment facilities at Fording River Operations and Elkview Operations.

Teck has also been exploring alternative water treatment technologies for selenium and nitrate removal. The Project may use saturated rock fill, an emerging technology, to treat selenium and other contaminants released from waste rock. A pilot saturated rock fill facility has been successfully operating at Elkview

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[6] Westslope Fisheries Ltd., Upper Fording River Westslope Cutthroat Trout Population Monitoring Project: 2019 (2020), online: https://www.teck.com/media/UFR_WCT_Monitor_Final_Report_April_9_2020.pdf

[7] Lemly, D., Review of Environment Canada's Teck Coal Environmental Assessment and Evaluation of Selenium Toxicity Tests on Westslope Cutthroat Trout in the Elk and Fording Rivers in Southeast British Columbia (2014), online: https://www.teck.com/media/2014-Water-review_environment_canada-T3.2.3.2.1.pdf

[8] Teck Resources Limited, 2019 Annual Information Form (2020), online: https://www.teck.com/media/2020-AIF.pdf

Operations since January 2018.[9] While initial results indicate an improvement in water quality, the recent change from active water treatment to saturated rock fill highlights that standard design features and mitigation measures are not yet established. In 2019 Teck described this uncertainty:

> *"There can be no assurance that the water quality targets set out in our valley-wide water quality management plan [the Elk Valley Water Quality Plan] will prove to be suitably protective of the environment, that our planned mitigation efforts will be sufficient to meet those targets or that ongoing monitoring will not disclose unanticipated environmental effects of our operations that will require additional mitigation."*[10]

The Castle Project may cause direct and cumulative effects to fish and fish habitat in the upper Fording River and downstream in the Elk River by altering upper Fording River fish habitats from construction of the area of mining operations and by releasing contaminants like selenium into the river. Given the precipitous decline of Westslope Cutthroat Trout in the upper Fording River,[11] the existing water quality concerns,[12] and the use of developing technologies for water treatment, the incremental effects of the Project could worsen the declining population of a federally listed species and increase contamination in the watershed. The application of standard mitigation measures through existing legislative mechanisms outside of IAA may not be able to adequately address these concerns.

Transboundary Effects

The Project may cause adverse direct and cumulative effects in another province (Alberta) and outside Canada (U.S. - transboundary effects), including effects to fish and fish habitat, water quality, climate change, wildlife, and the current use of lands and resources for traditional purposes by Indigenous peoples of Canada. While B.C. could consider effects outside of its jurisdiction, the management of transboundary effects remains an area of federal jurisdiction and responsibility.

The Project is located approximately five kilometres west of the B.C.-Alberta border and 130 kilometres north of the Canada-U.S. border (Figure 1). The Project site drains into the Fording River, a major tributary to the Elk River and the Elk River flows generally southwest and discharges into Koocanusa Reservoir. The Koocanusa Reservoir straddles the Canada-U.S. border and is part of the transboundary Kootenay (Kootenai) River system, which flows through Montana and Idaho before returning into B.C (Figure 2).

For over a decade, transboundary impacts to water quality arising from decades of coal mining in the Elk Valley have raised concerns noted by the U.S. EPA, the U.S. Department of State, the Montana Congressional Delegation, U.S. Tribes and other American stakeholders. In 2017, the Acting Deputy Administrator of the U.S. EPA wrote to Canada's then Minister of Environment and Climate Change

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9 Teck Resources Limited, Taking Inspiration from Nature: Innovative and Efficient Water Treatment with Saturated Rock Fill Technology (2020), online: https://www.teck.com/news/stories/2020/taking-inspiration-from-nature-innovative-and-efficient-water-treatmentwith-saturated-rock-fill-technology.

10 Teck Resources Limited, 2019 Annual Information Form (2020), online: https://www.teck.com/media/2020-AIF.pdf

11 Westslope Fisheries Ltd., Upper Fording River Westslope Cutthroat Trout Population Monitoring Project: 2019 (2020), online: https://www.teck.com/media/UFR_WCT_Monitor_Final_Report_April_9_2020.pdf

12 Lemly, D., Review of Environment Canada's Teck Coal Environmental Assessment and Evaluation of Selenium Toxicity Tests on Westslope Cutthroat Trout in the Elk and Fording Rivers in Southeast British Columbia (2014), online: https://www.teck.com/media/2014-Water-review_environment_canada-T3.2.3.2.1.pdf

requesting that federal assessments be conducted for projects whose impacts include watershed or airshed effects crossing national boundaries.

The Ktunaxa Nation Council, Kainai (Blood Tribe) and Siksika Nations, Tribal Councils of the Confederated Salish and Kootenai Tribes and the Kootenai Tribe of Idaho, Wildsight, the 17 U.S. conservation groups, the 15 Canadian Non-Governmental Organizations, Environment and Climate Change Canada, Global Affairs Canada, the U.S. EPA, the State of Montana and members of the public have expressed concerns that the Project could have direct and cumulative impacts to water quality in the U.S. with many noting that these concerns should be evaluated through a federal impact assessment.

Concerns related to transboundary impacts have escalated over the past year, in particular in response to the declines in Westslope Cutthroat Trout populations in the upper Fording River and Harmer Creek.[13] Additionally, a study published in September 2019 by the U.S. EPA and the U.S. Geological Survey noted that selenium, which it said came from the Elk River in B.C., was accumulating in the eggs of fish downstream of the Koocanusa Reservoir in the U.S. to levels that exceed the U.S. EPA national criterion.[14]

Although not in the Elk River, the White Sturgeon that inhabit the Kootenay (Kootenai) River downstream could be impacted by Project effects to water quality. Downstream from the Elk Valley, the Kootenay (Kootenai) River population of White Sturgeon range from downstream of the Libby Dam, the outlet of the Koocanusa Reservoir in Montana, downriver through Idaho and back into Canada as far as Nelson, B.C. In the Canadian section of its range (Kootenay River and Kootenay Lake) this population is listed on Schedule 1 of the *Species at Risk Act* as Endangered and in the U.S. it is listed on the *Endangered Species Act*. Concerns have been raised by the requesters and members of the public that project-related effects, particularly from degraded water quality including selenium, could impact this transboundary and federally-listed species.

The *Boundary Waters Treaty of 1909* between Canada and the U.S. was established to prevent disputes over transboundary waters between the two countries. The International Joint Commission (IJC) is a bi-national organization established by the governments of the U.S. and Canada under the Treaty. U.S. representatives on the IJC have raised concerns that transboundary pollution from selenium in Elk Valley must be addressed.[15]

In Teck's submission to the Agency on this designation request, the proponent indicated that it is making significant progress towards achieving the objectives in the Elk Valley Water Quality Plan, including the commissioning of the active water treatment plant at Line Creek Operations. In addition, Teck asserted that Project-specific and regional mitigation will limit the geographic extent of potential impacts to water quality within B.C.

The Project is also expected to contribute to Canada's greenhouse gas emissions. Given the global nature of greenhouse gases and climate change, the Agency considers effects from their release to be

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[13] Westslope Fisheries Ltd., Upper Fording River Westslope Cutthroat Trout Population Monitoring Project: 2019 (2020), online: https://www.teck.com/media/UFR_WCT_Monitor_Final_Report_April_9_2020.pdf

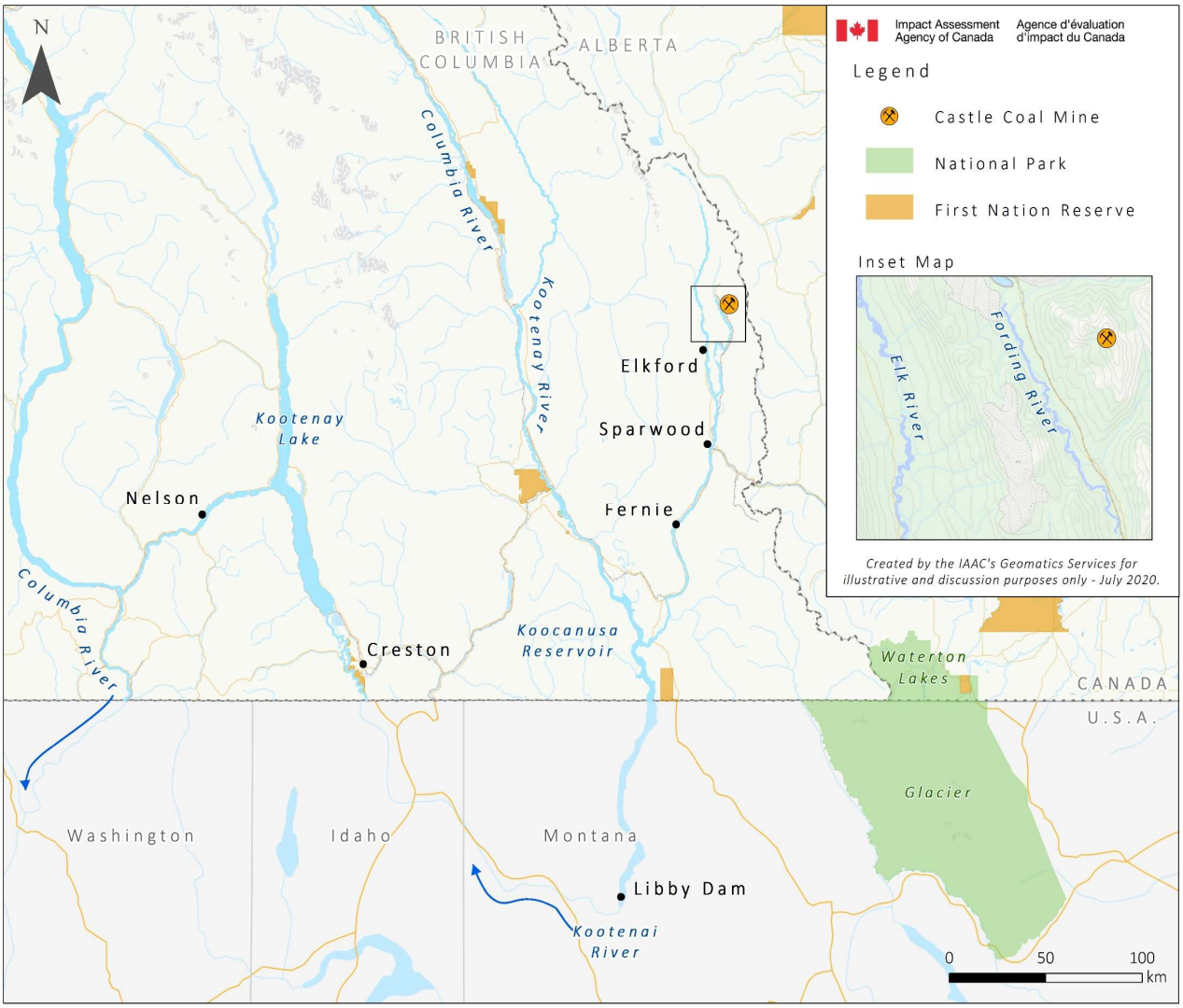
[14] Mebane, C.A., and Schmidt, C.G., 2019, Selenium and mercury in the Kootenai River, Montana and Idaho, 2018-2019: U.S. Geological Survey data release: https://doi.org/10.5066/P9YYVV7R

[15] Letter from Lana Pollack, Chair of International Joint Commission's U.S. Section and Rick Moy, Commissioner, U.S. Section to Cynthia Kierscht, Director, Office of Canadian Affairs, U.S. State Department" (2018), online: https://www.scribd.com/document/383221661/US-IJC-Commissioners-Letter-to-Dept-of-State-on-Selenium-Report

transboundary in nature. Teck anticipates that emissions from the Castle Project will replace those currently generated by Fording River Operations - approximately 650 000 equivalent tonnes of carbon dioxide per year during operations. The main sources of these emissions are from fuel used to operate machinery (primarily diesel for heavy equipment and natural gas for drying of coal) and from methane released from coal beds during the mining of the new open pits. The duration of these releases is unclear, since the mine life is currently unknown, but is expected to be several decades. Teck is exploring options to minimize emissions and the Project will be aligned with the proponent's effort to reach carbon neutrality. At this time, Teck has not provided direction on how the Project may meet this target. Despite existing legislative mechanisms, the Agency acknowledges that the Project may impact the Government of Canada's ability to meet its commitments in respect of climate change, including Canada's 2030 emissions targets and forecasts.

The Project may also impact wide-ranging species including Grizzly Bear, Bighorn Sheep and Wolverine that utilize habitat in B.C. and Alberta including the connectivity corridor from Glacier-Waterton International Peace Park to Canada's Rocky Mountain National Parks complex. Important wintering habitat for Bighorn Sheep, a species of cultural importance to the Ktunaxa, Kainai (Blood Tribe) and Siksika Nations, will be lost during the construction of open pits. The Kainai (Blood Tribe) and Siksika Nations, Alberta-based Treaty 7 Nations, noted concerns in their designation request that impacts to habitat on the B.C. side of the border may have impacts on the viability of the species more generally. Previous provincial-only assessments in the Elk Valley have not assessed transboundary effects to these Alberta-based nations.

Figure 2: Elk and Kootenay Rivers



Wildlife Species at Risk

The Agency understands that there are 19 wildlife species listed under the *Species at Risk Act* whose ranges overlap with the project area and receiving environment, both in B.C. and into Alberta and the U.S. (Table 4). While these species are listed under federal legislation, it is expected that the provincial environmental assessment process would consider the impacts from the Project to these species within B.C.

Table 4 – Wildlife Species Listed under the *Species at Risk Act* Whose Range Overlaps with the Project Area

Endangered	Threatened	Special Concern	
American Badger	Olive-Sided Flycatcher	Grizzly Bear	Rusty Blackbird
Little Brown Myotis	Barn Swallow	Western Toad	Short-Eared Owl
Black Swift	Bank Swallow	Wolverine	Magnum Mantleslug
Williamson's Sapsucker	Common Nighthawk	Evening Grosbeak	Sheathed Slug
	Rocky Mountain Tailed Frog	Peregrine Falcon	Monarch Butterfly

Note: Wildlife species do not include fish listed under the Species at Risk Act, which are discussed in the Fish and Fish Habitat section of this report

Indigenous peoples of Canada

Under subsection 9(2) of IAA, in making a decision to designate a physical activity, the Minister may consider adverse impacts that the activity may have on the rights of Indigenous peoples of Canada – including Indigenous women – recognized and affirmed by section 35 of the *Constitution Act, 1982*.

As part of its analysis, the Agency considered information provided by the Ktunaxa Nation Council, Kainai (Blood Tribe) and Siksika Nations, Health Canada, Environment and Climate Change Canada, Women and Gender Equality Canada, B.C.'s EAO and Teck on the potential impacts of the Project on Indigenous peoples. The Agency also considered information received from Indigenous groups during consultation on other Elk Valley coal projects. The Agency is of the view that the Project may result in adverse effects to traditional and cultural use of lands, health, social or economic conditions of Indigenous peoples of Canada and impacts on the exercise of Aboriginal or Treaty rights.

The Project is situated on Crown land and fee simple land, within ʔamakʔis Ktunaxa, the territory of the Ktunaxa Nation and where other Indigenous people also practice traditional, cultural and spiritual activities. Coal mining has been occurring in the Elk Valley for over 100 years which has resulted in changes to the biophysical and human environment, including cumulative effects to land, water, resources and Indigenous peoples.

The project may have different, including positive and adverse, impacts upon Indigenous women, men and gender diverse persons from a range of groups and communities in a variety of ways including:

- employment opportunities, access to revenues, and compensation or benefits and expanded investment in the local community;
- decision making roles which enable or constrain a person's agency and leadership;
- access to services and programs that account for the perspective, knowledge and experiences of individuals and communities; and
- the Project may reinforce or exacerbate existing inequalities - for example, where men gain employment and withdraw their labour from traditional subsistence activities such as hunting, fishing, gathering or trapping, this can reinforce or exacerbate existing gender inequalities.

Potential effects within federal jurisdiction anticipated from the Project with respect to Indigenous peoples of Canada, include: impacts on physical and cultural heritage, the current use of lands and resources for traditional purposes, any structure, site or thing, that is of historical, archeological, paleontological or architectural significance and any change occurring in Canada to the health, social or economic conditions of the Indigenous peoples of Canada.

Potential effects that could adversely effect the current use of lands and resources for traditional purposes (including harvesting activities and related cultural practices such as language, sacred values, sense of place, spirituality, intergenerational transmission of knowledge and practices) by Indigenous peoples include:

- loss and/or disruption of access and use of lands and resources for current and traditional uses including harvesting of wildlife, fish and plants and berries;
- adverse effects to the quality and quantity of resources including plants and berries, fish and fish habitat, migratory birds and wildlife species of importance and wildlife habitat;
- decreased confidence in the safe use of lands and resources in and around the Project area;
- changes in water and air quality;
- effects of dust, noise and visual disturbance on the quality of the experience;
- land disturbance causing effects on the ability to access sites of ceremonial, cultural, historical and archeological significance; and
- cumulative effects of development and coal mining in the Project area and region.

Potential project related changes that could adversely effect the health, social or economic conditions of Indigenous peoples include:

- the effects identified above;
- changes to local population, employment and income opportunities, worker safety, and pressures on housing, local services and infrastructure;
- the influx of a work force for the Project could reduce access to housing, health care and community services that address people's specific needs, restrict their options and potentially compromise their health;
- changes to the quality and quantity of traditional foods; changes to community and individual social and economic conditions and well-being could effect health;
- loss of cultural and tourism values due to project related activities, including reduced access, changes to plant, fish and wildlife resources, visual quality and noise.

For women and gender diverse people, the Project may bring potential safety risk due to increased traffic and industrial activities, and increased risk of gender-based violence (e.g., sexual harassment, violence against women, human trafficking).

There may be potential effects to physical and cultural heritage and any structure, site or things that is of historical, archeological, paleontological or architectural significance due to land clearing, mining, and waste rock storage areas and the cumulative effects of development and mining in the region of the Project.

B.C. would be able to examine some of the concerns identified through the provincial environmental assessment. However, B.C. does not recognize a legal obligation to consult with Métis people as the province is of the view that no Métis community is capable of successfully asserting site specific section 35 rights in B.C., and the Agency understands that Métis Aboriginal rights or interests may not be assessed without a federal impact assessment. Further, the assessment and mitigation of effects within federal jurisdiction for Indigenous peoples of Alberta, such as the Kainai (Blood Tribe) and Siksika Nations would fall outside of the scope of B.C.'s environmental assessment and regulatory processes.

The Agency considered that all Project activities must be carried out in compliance with applicable federal legislation including the *Fisheries Act*, *Migratory Birds Convention Act* and *Species at Risk Act*. Should a *Fisheries Act* authorization be required, Fisheries and Oceans Canada would conduct consultation with potentially affected Indigenous groups in relation to the Application. However, the scope of consultation would be limited to the permit request, which is narrower than the scope of consultation during a federal impact assessment.

The Agency also considered that the Project is subject to a provincial environmental assessment and regulatory processes that will address impacts to Indigenous peoples. B.C.'s *Environmental Assessment Act* is intended to support reconciliation with Indigenous peoples in B.C. It also requires that the following matters must be assessed in every environmental assessment:

- positive and negative direct effects and indirect effects, including environmental, economic, social, cultural and health effects;
- adverse cumulative effects;
- disproportionate effects on distinct human populations including populations identified by gender; and
- effects on current and future generations.

Other Considerations

Cumulative Effects

As previously noted, coal mining in the Elk Valley has been occurring for over 100 years. To access the coal, mines in the Elk Valley often use cross-valley fill mining techniques where mountains with coal seams are demolished, the valuable coal is removed, then waste rock is dumped into, and eventually fills, nearby valleys. Selenium is then released from waste rock and can enter the watershed in high concentrations for many decades. Selenium is bioaccumulative, meaning that it can build up in biota and move up the food chain resulting in ecotoxicoligical effects. The requesters asked that the Agency consider the effects of the Project in combination with other past, ongoing, and planned coal mines in the Elk Valley that impact water quality and fish, particularly from the release of selenium.

The Project in combination with historic, existing and reasonably foreseeable coal mining in the region may result in adverse cumulative environmental effects on fish, species at risk, Indigenous peoples and their rights, and the transboundary environment. Given the challenges in effectively addressing selenium pollution in the Elk Valley, it is not clear that the application of standard mitigation measures and existing legislative mechanisms would address the concerns.

Management Plans and Initiatives

Several plans and initiatives have been developed to manage regional effects from coal mining and other land uses in the Elk Valley. The following section summarizes the key plans and initiatives that may contribute to the management of effects from the Castle Project. These initiatives contribute to discussions and monitoring of issues related to effects within the Elk Valley and into the U.S., however, the majority lack the legislative authority to implement mitigation to address the effects.

Elk Valley Water Quality Plan

In 2013, B.C.'s Minister of Environment issued Ministerial Order No. M113, compelling Teck to prepare an area-based management plan (later titled the Elk Valley Water Quality Plan) for the Elk River watershed and the Canadian portion of the Koocanusa Reservoir. The purpose was to better manage water quality from current and historical mining activity by creating short and long term targets for selenium, nitrate, cadmium, and sulphate, and the formation of calcite (see the *Fish and Fish Habitat* section for additional information on the Elk Valley Water Quality Plan).

Despite considerable financial investment by the proponent, the effectiveness of the Plan is uncertain. Teck is not in compliance with certain water quality parameters set out in the Plan and has experienced difficulties implementing effective mitigation measures.[16] Consequently, target dates have been delayed and Teck is pursuing a change in methodology from active water treatment to saturated rock fill.

Lake Koocanusa Monitoring and Research Working Group

The Montana Department of Environmental Quality and B.C.'s Ministry of Environment and Climate Change Strategy formed the Lake Koocanusa Monitoring and Research Working Group in 2015 to coordinate on transboundary water quality issues affecting Koocanusa Reservoir. The group comprises various federal, provincial, state, Indigenous, and local governments, but no Canadian federal government departments participate. The group also includes private sector (including Teck Coal Limited) and Non-Governmental Organizations. The group has been working to develop a site-specific selenium water quality objective for Koocanusa Reservoir which is anticipated to be complete in December 2020 and are examining the next steps and future for the working group.

International Joint Commission

The *Boundary Waters Treaty of 1909* between Canada and the U.S. was established to prevent disputes over transboundary waters between the two countries. The International Joint Commission (IJC) is a bi-national organization established by the governments of the U.S. and Canada under the Treaty. U.S. representatives on the IJC have raised concerns that transboundary pollution from selenium in Elk Valley must be addressed and the likelihood of a reference to the commission has increased in recent years.[17]

Transboundary Monitoring Task Group

The Transboundary Monitoring Task Group was formed in 2018 to develop a common understanding of current and future water quality monitoring activities and data, with an emphasis on selenium, in the transboundary waters of Koocanusa Reservoir. Membership includes Montana Department of Environmental Quality, Montana Fish, Wildlife and Parks, the U.S. Environmental Protection Agency,the U.S. Army Corps of Engineers, provincial ministries and Teck Coal Limited.

Westslope Cutthroat Trout Upper Fording River Action Plan

The province along with the Ktunaxa Nation Council is currently developing the Upper Fording River Westslope Cutthroat Trout Action Plan to try and address recent declines in that population. The Plan will outline key actions and legislative tools available to reduce risk to Westslope Cutthroat Trout populations in Upper Fording River.

Elk Valley Cumulative Effects Management Framework

The Elk Valley Cumulative Effects Management Framework was developed from a condition in the provincial Environmental Assessment Certificate for the Line Creek coal operation expansion. Four valued

[16] Teck Resources Limited, 2019 Annual Information Form (2020), online: https://www.teck.com/media/2020-AIF.pdf

[17] Letter from Lana Pollack, Chair of International Joint Commission's U.S. Section and Rick Moy, Commissioner, U.S. Section to Cynthia Kierscht, Director, Office of Canadian Affairs, U.S. State Department" (2018), online: https://www.scribd.com/document/383221661/US-IJC-Commissioners-Letter-to-Dept-of-State-on-Selenium-Report

component technical reports for Grizzly Bear, Riparian and Westslope Cutthroat Trout (Aquatic Ecosystems), Bighorn Sheep, and Old and Mature Forest describe the historical, current, and future assessment of cumulative effects in Elk Valley, as well as management and mitigation recommendations. An overarching Cumulative Effects Assessment and Management Report integrates the assessment results for all the valued components and prioritizes key management actions in the Elk Valley.

Legislative and Regulatory Oversight

The Agency considered that all Project activities must be carried out in compliance with applicable federal and provincial legislation (Annex II).

The Agency considered that, should it not be possible to avoid or mitigate effects that are likely to cause serious harm to fish, the proponent will require an authorization under the *Fisheries Act*. The proponent will be required, if authorized, to abide by the conditions of the authorization. The Agency understands that Fisheries and Oceans Canada would review the Application for Authorization including fish and fish habitat assessments, detailed information on impacts and the proposed plans to offset losses, conduct consultation with potentially affected Indigenous groups in relation to the Application and issue an authorization if deemed appropriate. Fisheries and Oceans Canada must be satisfied that the activities will not jeopardize the survival or recovery of aquatic species at risk prior to issuing a *Species at Risk Act* permit and *Fisheries Act* authorization, among other required considerations. Fisheries and Oceans Canada indicated that it is possible the department may be required to exercise a power or perform a duty or function related to the Project to enable it to proceed.

Natural Resources Canada may issue a licence, under the *Explosives Act*, for explosives manufacturing and/or storage. Issuance of an explosives manufacturing and/or a magazine licence, for the manufacture of explosives, involves consultation with all impacted Indigenous groups. Natural Resources Canada anticipates that with the implementation of standard mitigation measures, there are not likely to be any adverse effects within federal jurisdiction or adverse direct or incidental effects associated with the construction, operation and decommissioning of explosives manufacturing and storage facilities.

The *Species at Risk Act* is part of the Government of Canada strategy for the protection of species at risk. It applies to all federal lands in Canada, all wildlife species listed as being at risk, and their critical habitat. Fisheries and Oceans Canada is responsible for aquatic species at risk, and Environment and Climate Change Canada manages the remaining species.

Environment and Climate Change Canada is also responsible for implementing the *Migratory Birds Convention Act* by developing and implementing policies and regulations to ensure the protection of migratory birds, their eggs and their nests.

Environment and Climate Change Canada is also developing Coal Mining Effluent Regulations under the *Fisheries Act* that would apply to coal mining in Canada, including the Project. Final regulations are targeted for publication in Canada Gazette, Part II in early 2022. Proponents are encouraged to consider the associated consultation documents prepared by Environment and Climate Change Canada when designing new coal mines.

The following section discusses potential adverse environmental effects that could be related to federal approval and permits issued to the Project.

The Ministry of Energy, Mines and Petroleum Resources, the Ministry of Environment and Climate Change Strategy, the Environmental Assessment Office and the Ministry of Forests, Lands, Natural Resources Operations and Rural Development are the provincial ministries collectively responsible for the oversight of mines in B.C. Under B.C.'s statutory framework, the primary provincial acts that manage the environmental effects from mines include:

- The *Environmental Assessment Act* regulates the assessment of major projects in British Columbia for potentially adverse environmental, economic, social, heritage and health effects that may occur during the life cycle of these projects.
- The *Mines Act* permits on-site activities, including management of water quality, waste and metal leaching and acid rock drainage, as well as geotechnical design and reclamation and closure planning.
- The *Environmental Management Act* regulates industrial and municipal waste discharge, pollution, hazardous waste and contaminated site remediation.
- The *Water Sustainability Act* governs the licensing, diversion and use of water by maintaining water quantity, water quality and aquatic ecosystems in and for B.C.

Potential adverse direct or incidental effects

Direct or incidental effects refer to effects that are directly linked or necessarily incidental to a federal authority's exercise of a power or performance of a duty or function under another act of Parliament that could permit the carrying out, in whole or in part, of a project, or to a federal authority's provision of financial assistance to a person for the purpose of enabling a project to be carried out, in whole or in part. The Project, as described in the IPD and in Teck's views provided to the Agency, may require the exercise or performance of the following federal powers, duties, or functions:

- authorization by Fisheries and Oceans Canada under the *Fisheries Act*;
- authorization by Environment and Climate Change Canada under the *Species at Risk Act*;
- permitting by Environment and Climate Change Canada under the *Migratory Birds Convention Act*;
- greenhouse gas emissions reporting through Environment and Climate Change Canada under the *Canadian Environmental Protection Act, 1999*; and
- permitting by Natural Resources Canada under the *Explosives Act*.

Since the Project is at an early stage of design, additional federal approvals or permits may be required. In addition, Environment and Climate Change Canada is leading a proposed regulatory initiative to develop Coal Mining Effluent Regulations (CMER) under the *Fisheries Act.* Were these regulations to come into force, it is expected that they would establish effluent quality standards that would apply to coal mining in Canada, including this Project.

As part of the provincial environmental assessment, Teck plans to develop a Permitting Plan in collaboration with relevant federal agencies. The proponent anticipates that federal permits and approvals will require some level of engagement with Indigenous groups and the public.

There is potential for adverse direct or incidental effects related to the exercise or performance of the above powers, duties, or functions by federal authorities. However, more detailed information on mine design would be required to understand the scope and magnitude of those potential effects.

Public views

The Agency considered in this analysis public comments related to the Project from the following sources:

- emails sent to the Minister and the Agency;
- posts made to the Project's homepage on the Registry;
- the proponent's Initial Project Description;
- views submitted by B.C.'s EAO to the Agency on the designation request;
- the public comment period held as part of the provincial environmental assessment process; and
- two virtual open houses hosted by B.C.'s EAO.

Between May 21 and July 24, 2020, approximately 655 emails were received and 138 public comments were posted to the Registry from members of the public (see Annex 1 and the Registry for details). Approximately 85 percent of all comments received by email and posted to the Registry requested that the Minister designate the Project; 35 comments objected to designation and 74 supported the Project.

Members of the public expressed the following concerns that the Project might cause adverse effects including to areas of federal jurisdiction or adverse direct or incidental effects:

- threats to downstream endangered fish populations, including Westslope Cutthroat Trout and White Sturgeon;
- threats to species listed in the *Species at Risk Act* (SARA) and their habitat, including Whitebark Pine, Grizzly Bear and Wolverine;
- effects of elevated selenium on fish and fish habitat and the environment;
- noncompliance with water quality objectives in the Elk Valley Water Quality Plan;
- upstream and downstream greenhouse gas emissions (GHG) and loss of carbon sinks from deforestation, the implications to Canada's GHG emissions reduction and clean growth and climate change commitments;
- loss of biodiversity and wilderness areas including important Bighorn Sheep wintering habitat and migration corridors;
- cumulative effects of mining projects in the Elk Valley and the long-term impacts on generations to come;
- lack of long-term economic sustainability of the coal industry from market demand decreases and the need for development of green alternatives and green jobs;
- a lack of government transparency, oversight and enforcement of water quality standards at Elk Valley mines;
- effects to air quality and health impacts to local residents;

- inadequate reclamation at the Fording River Operations sites relative to the area of mining operations;
- a lack of science-based decision-making in the development of mines in the Elk Valley;
- loss of access to areas used for recreational purposes and effects of declining fish populations to the local tourism industry, including fly fishing tourism;
- B.C. provincial environmental assessment does not cover all factors that should be assessed;
- effects of the size of the area of mining operations to the biophysical environment; and
- a lack of evidence-based water treatment measures for effective water treatment.

Requesters, including the 17 U.S. Conservation Groups and 15 Non-Governmental Organizations in addition to many public submissions, requested the Project be subject to assessment by a federal review panel. Should the Project be designated, the Agency will conduct the appropriate analysis during the planning phase to determine whether a recommendation for the Minister to refer the Project to review panel is warranted.

Many public comments provided to the Agency and to B.C.'s EAO during the provincial comment period as well as submissions made by business interest groups including the B.C. Chamber of Commerce, the Fernie Chamber of Commerce, and the Elkford Chamber of Commerce noted support for the Project's development, expressing the importance of mining on the local and national economy, local employment and quality of life. Many noted the community resources and infrastructure funded by Teck that improve economic, social, cultural, and health conditions in the Elk Valley. Residents of the Elk Valley expressed concerns that a federal Impact Assessment would delay the project's timeline, thus impacting employment income and economic stability that residents and their families rely upon. Other reasons provided in support of the Project include:

- Teck's ongoing environmental stewardship and reclamation commitments and initiatives, including the Elk Valley Water Quality Plan and investments in water quality research and development;
- the need for environmentally sustainable and socially responsible mining projects to meet ongoing global demand for steel and the development of sustainable infrastructure, such as renewable energy infrastructure;
- the risks of coal being mined irresponsibly and with greater impacts in other jurisdictions with less stringent regulations, should the Project not be approved;
- Teck's engagement with Indigenous communities, experts, the public, and other stakeholders to seek input on its operations;
- Teck's record of transparency, and compliance with environmental regulations; and

  existing regulatory processes and the B.C. EAO's environmental assessment could meet and address concerns over the impacts of the Project.

Potential adverse impacts on the rights of Indigenous peoples

The Agency is of the view that the Project may cause adverse impacts on the Aboriginal and Treaty rights of the Indigenous peoples of Canada, including those of Indigenous women, that are recognized and

affirmed by section 35 of the *Constitution Act, 1982* including the potential for adverse effects within federal jurisdiction that could impact those rights and related interests. The Project is located within the territory of the Ktunaxa Nation and where other Indigenous peoples exercise their Aboriginal and Treaty rights. As noted previously, the Project may have different impacts upon women, men and gender diverse persons from a range of groups and communities in a variety of ways which may reinforce or exacerbate existing inequalities and are described in the above section on potential adverse effects within federal jurisdiction on Indigenous peoples of Canada.

Indigenous groups identified the following potential impacts on Aboriginal and Treaty rights:

- the Project is located within lands and waters actively used, occupied and cared for by the Ktunaxa nation and is in an area of central importance to the Ktunaxa Nation, where the Nation has Indigenous title, rights and interests, and Ktunaxa Citizens are engaged in the on-going practice of Ktunaxa rights;
- loss of opportunity to carry out cultural practices, including teaching, traditional use and harvesting activities, including fishing, hunting and gathering, in both the Project area and the surrounding area where Project effects may occur, including impacts to water quality;
- loss of access to and sensory disturbance impacting preferred places, preferred species and resources, and preferred practices central to Ktunaxa use, language and identity in the Elk Valley;
- loss of Ktunaxa cultural, historical and archeological sites;
- due to the location, size and lifespan of the Project, the Ktunaxa Nation Council considers that it will have serious adverse impacts on the Ktunaxa Nation's Indigenous title, rights and interests;
- the Project has the potential to significantly impact Kainai (Blood Tribe) and Siksika Aboriginal and Treaty rights;
- significant and unsustainable cumulative impact of coal mining and resource extraction, logging and development taking of lands and subsequently altering the landscape, diminishing the ability to exercise Aboriginal and Treaty rights and intergenerational transfer of culture, knowledge, practices and language; and
- adverse effects to wildlife habitat, migratory birds, and fish and fish habitat and environmentally sensitive habitats including Bighorn Sheep winter range and Westslope Cutthroat Trout habitat, endangered ecological communities, mature and old growth forests, and wetlands could impact the ability to exercise Aboriginal and Treaty rights and related cultural practices.

Ktunaxa Nation Council and the Kainai (Blood Tribe) and Siksika Nations have requested a federal assessment of potential adverse effects within federal jurisdiction, including impacts on Aboriginal and Treaty rights. As previously noted, federal departments have been invited to participate in the provincial environmental assessment process. Further, B.C.'s *Environmental Assessment Act* requires that the effects of a Project on Indigenous nations and rights recognized and affirmed by section 35 of the *Constitution Act, 1982* must be assessed. However, B.C. does not recognize Métis site specific section 35 rights in B.C., and the assessment and mitigation of adverse impacts on Aboriginal and Treaty rights related to effects within federal jurisdiction for Indigenous peoples in Alberta may fall outside of the scope of B.C.'s environmental assessment and regulatory processes.

Regional and strategic assessments

There are no regional or strategic assessments pursuant to sections 92, 93 or 95 of IAA that are relevant to the Project.

Conclusion

The Agency is of the view that the Project warrants designation pursuant to subsection 9(1) of IAA. The potential for adverse effects, as described in subsection 9(1) of IAA, may not be mitigated through project design, the application of standard mitigation measures, or through existing legislative mechanisms (Annex I).

The *Impact Assessment Cooperation Agreement Between Canada and British Columbia* (2019) provides a framework for the Agency and B.C.'s EAO to work together on impact assessments of projects that require an assessment by both levels of government. The Agreement helps ensure a more predictable and timely process, increased efficiency and certainty, and quality assessments that draw on the best available expertise, supporting the shared principle of "one project-one assessment". Should the Minister designate the project, in accordance with the Cooperation Agreement, the Agency would work closely with B.C.'s EAO to integrate with the ongoing provincial assessment in order to reduce administrative burden and avoid duplication. This would include, where possible, issuing joint documents such as information requirements for the assessment, enabling the Agency to build upon the provincial requirements with a focus on key areas of federal jurisdiction.

The Agency recognizes that the substitution of a federal impact assessment to the provincial process completed under B.C.'s *Environmental Assessment Act* is appropriate in certain cases. However, the concerns expressed by the requesters, Indigenous groups, federal authorities, other jurisdictions, members of the public, and those that are known to the Agency that relate to adverse effects within federal jurisdiction or adverse direct or incidental effects, may not be fully addressed by the provincial environmental assessment process or through permitting for this Project. Of particular concern, the Project has the potential to cause adverse direct and cumulative effects to fish and fish habitat and the potential to cause adverse effects across provincial and international borders.

The Project also warrants designation due to its exceptional nature. The Project would be the largest coal mine in B.C. and one of the largest in Canada. Despite the increase in area of mining operations not meeting the expansion criterion in the Regulations, the Project is extremely large (over five times the production capacity threshold in the Regulations) and has a high likelihood to cause direct and cumulative effects to areas of federal jurisdiction.

The Agency is of the view that the Project has the potential to cause adverse impacts on Aboriginal and Treaty rights recognized and affirmed by section 35 of the *Constitution Act, 1982* and matters related to Indigenous peoples within federal jurisdiction that cannot be addressed through existing legislative and regulatory mechanisms.

ANNEX I

Annex I: Summary of Adverse Effects and Mitigations, Input from Federal and Provincial Experts, Indigenous Groups, Requesters, Interested Parties, and the Public; and Relevant Legislative or Regulatory Mechanisms

Adverse Effect or Public Concern in Relation to Subsection 9(1) of the *Impact Assessment Act*	Potential Project Effects and Mitigations as Proposed by the Proponent	Input from Federal and Provincial Experts, Indigenous Groups, Requester, Interested Parties, and the Public	Potential Relevant Legislative or Regulatory Mechanisms NOTE: See Annex II for more detail
A change to fish and fish habitat, as defined in subsection 2(1) of the *Fisheries Act*	**Potential Project Effects** Direct loss or change in quantity or quality of aquatic habitat resulting from pit development, placement of waste rock and other mine infrastructure. Change in quantity and quality of aquatic habitat resulting from alteration of stream flows. Change in quality of aquatic habitat resulting from deposition of calcite and sediment loading. Health effects to aquatic resources and aquatic dependant species (e.g., fish, benthic invertebrates, amphibians, birds) due to changes in water quality. Direct loss of riparian and wetland habitats affecting quality of fish habitat. Changes in water quality in streams and rivers resulting from release of selenium and other water quality constituents from waste rock and CCFR storage areas. **Proposed Mitigations** Avoid and/or minimize Project direct loss of aquatic habitat through selection of mine pit and waste rock storage locations that do not directly interact with fish bearing waterbodies. Implement appropriate management practices and environmental management plans. Minimize mine footprint through phased operation and maximize backfill waste deposition. Implement appropriate management practices (e.g., Standards and Practices for Instream Works) and environmental management plans (e.g., Erosion and Sediment Control Plan). This includes monitoring water quality per current plans and adapting to findings. Implement a habitat offset plan to compensate for unavoidable harmful alteration, disruption or destruction of fish habitat. Implement surface water management plans during construction and operation, and integrate water management into reclamation and closure planning.	**Fisheries and Oceans Canada** (DFO): The Project has the potential to result in death of fish by means other than fishing or harmful alteration, disruption or destruction of fish habitat. These are prohibited under the fish and fish habitat protection provisions of the *Fisheries Act*. If these effects are unavoidable, through implementation of avoidance and mitigation measures, then authorization under the *Fisheries Act* would be required. If an authorization was issued it would include conditions requiring avoidance and mitigation, offsetting, contingency and monitoring measures. **Environment and Climate Change Canada** (ECCC): Potential effects to fish and fish habitat due to Project-related changes in water quality (e.g. increases in selenium, nitrate, sulphate and cadmium concentrations and calcite deposits) that may adversely affect fish and aquatic species listed under the *Species at Risk Act* (SARA), including Westslope Cutthroat Trout (aquatic species of special concern listed in Schedule 1 of SARA). **B.C.'s Environmental Assessment Office** (EAO), **Ministry of Environment and Climate Change Strategy** (ENV)**, Ministry of Forests, Lands, Natural Resources Operations and Rural Development** (FLNRORD) and **Ministry of Energy, Mines and Petroleum Resources** (EMPR)**:** In relation to fish and fish habitat, including water quality, EAO and the three ministries indicated that the Project does not require designation and identified the following provincially-led or mandated mechanisms in place to support this assertion: the Elk Valley Water Quality Plan (an area-based management plan required by Ministerial Order); the Upper Fording River Westslope Cutthroat Trout Action Plan (in development) and the Elk Valley Westslope Cutthroat Trout Recovery Plan; Lake Koocanusa Monitoring and Research Working Group and the Transboundary Monitoring Task Group Collaboration commitments with the State of Montana, Montana Department of Environmental Quality, the U.S. Environmental Protection Agency, the Ktunaxa Nation Council and US Tribes; and additional management strategies for addressing cumulative effects in the Elk Valley through the development of a Cumulative Effects Management Framework with the Ktunaxa Nation Council. **United States Environmental Protection Agency** (U.S. EPA): The U.S. EPA is concerned about impacts to aquatic resources in B.C. that are under federal jurisdiction that could extend to downstream Lake Koocanusa resources, including the recent declines in Westslope Cutthroat Trout populations in the Fording River near the proposed mine site, previous fish kills in Line Creek and ongoing Canadian federal investigations related to impacts to aquatic life in the Elk Valley. **State of Montana:** The Project has the potential to cause downstream water quality impacts in Montana watersheds due to elevated and increased levels of selenium from mining operations in the Elk Valley. Water quality standards, including selenium standards, are needed for the protection of aquatic life in Lake Koocanusa and the Kootenai River. **Ktunaxa Nation Council:** There are impacts to fish and fish habitat due to impacts on water quality, significant and unsustainable cumulative effects to fish and fish habitat and degradation or loss of fish	**DFO:** An authorization under the *Fisheries Act* may be required if the Project will result in death of fish by means other than fishing or harmful alteration, disruption or destruction of fish habitat. **ECCC:** Subsection 36(3) of the *Fisheries Act* prohibits any person from depositing or permitting the deposit of a deleterious substance of any type in water frequented by fish, unless authorized by a regulation. The deposit of a deleterious substance to water frequented by fish constitutes a violation of the *Fisheries Act* except where federal regulations under subsection 36(5) of the Act, or other Governor in Council regulations, authorize the deposit of the deleterious substance to levels set out in the regulations. **ECCC:** Coal Mining Effluent Regulations under the *Fisheries Act* are currently being developed by ECCC that would apply to coal mining in Canada, including this proposed Project. Final regulations are targeted for publication in Canada Gazette, Part II in early 2022. Proponents are encouraged to consider the consultation documents prepared by ECCC when designing new coal mines. **B.C.'s Environmental Assessment Office** (EAO): An environmental assessment certificate under the *Environmental Assessment Act* would assess effects to fish and fish habitat. **ENV:** An update to the Elk Valley Water Quality Plan and an amendment to Waste Discharge permit 107517 to include the Project (issued under the *Environmental Management Act*) would be required. **FLNRORD:** Updates to the existing upper Fording River authorizations and

Adverse Effect or Public Concern in Relation to Subsection 9(1) of the *Impact Assessment Act*	Potential Project Effects and Mitigations as Proposed by the Proponent	Input from Federal and Provincial Experts, Indigenous Groups, Requester, Interested Parties, and the Public	Potential Relevant Legislative or Regulatory Mechanisms NOTE: See Annex II for more detail
	Integrate the commitments in the EVWQP and incorporate the Project into the implementation plan. This may include Project-specific water quality treatment initiatives such as using existing and/or proposed infrastructure (e.g., Fording River Active Water Treatment Facility South), to treat contact water and/or implementation of other technologies (e.g., SRFs or new water treatment facilities). Follow recommendations of the Westslope Cutthroat Trout Working Group that includes the proponent, provincial ministries, and the Ktunaxa Nation Council.	habitat to Chauncey Creek and its tributary streams due to clearing of vegetation during construction. The Ktunaxa Nation Council is extremely concerned regarding the future of fish populations in the Fording and Elk Rivers. Ktunaxa Nation Council sent a “Call to Action” letter to DFO in 2020 based on the significant decline of the population of genetically pure Westslope Cutthroat Trout population in the Fording River, which is adjacent to the Project. Currently, the Fording River Operations has reported exceedances in Fording River of selenium, sulphate and nitrate limits set in the B.C.’s valley wide permit. Water quality issues have also been noted in the larger Elk River, downstream of the proposed mine site, which is already significantly impacted by contaminants from five coal mines operated by the proponent. Special attention is warranted to ensure that the Project does not make the existing selenium and water quality situation worse. **Tribal Councils of the Confederated Salish and Kootenai Tribes and the Kootenai Tribe of Idaho**: The Tribal Councils asserted that the Project has the potential to cause adverse effects to fish and fish habitat, specifically on the Westslope Cutthroat Trout downstream of the existing Fording River Operations. ECCC has ongoing investigations into the mortality of the Westslope Cutthroat Trout at a treatment facility operated by the proponent. The Tribal Councils indicated the lack of demonstrated, successful technology to mitigate mining contamination at an appropriate scale and reduce risks to water quality and aquatic life. The Tribal Councils also indicated the failure to coordinate efforts to improve water quality in the Elk Valley from B.C., State of Montana, and the proponent. The Elk Valley Water Quality Plan has not been fully implemented and there is little improvement to water quality and fish populations. **Kainai (Blood Tribe) and Siksika Nations:** The Project has the potential to cause adverse effects to aquatic species, specifically reductions in the abundance of certain species (e.g. mayflies), and increased tissue selenium concentrations. **Ecojustice on behalf of Wildsight Society:** Effects on fish and fish habitat from the Project are likely to be significant. Additionally, there are or could be significant cumulative effects from the existing and proposed coal mines in the Elk Valley on fish populations in the Elk River, including Westslope Cutthroat Trout, Bull Trout, Mountain Whitefish and smaller species. Selenium pollution levels in the Fording River, Elk River, Koocanusa Reservoir and Kootenai/Kootenay River continue to increase, despite Teck’s commitments to reduce these pollution levels under the 2014 Elk Valley Water Quality Plan and the associated provincial permits. Selenium pollution has already had significant adverse effects on fish, including Westslope Cutthroat Trout and Bull Trout, and the pollution is expected to continue for a very long time. Nitrate pollution is also a significant threat to fish and other aquatic life downstream of the Project, and while nitrate pollution only flows from waste rock dumps over a timescale of decades after mining ends, nitrate levels are expected to be above provincial and federal guidelines for decades. Destruction of fish habitat is a significant concern with the Castle Project, as it will cover a significant portion of Kilmarnock Creek with waste rock and while Kilmarnock Creek cannot be reached by Westslope Cutthroat Trout from the upper Fording River, there remains a population in Kilmarnock Creek just above the mine. Ecojustice asserts that it is critical that the Castle Project be assessed to investigate adverse effects due to these pollutants, but also the inevitable cumulative effects from multiple pollutants affecting vulnerable fish populations and fish habitat in the area. **17 U.S. Conservation Groups:** The Project has the potential for significant impacts on water pollution in Lake Koocanusa, including cumulative impacts of multiple pollutants, including nitrate, sulphate and nickel. Recent United States Geological Survey/Kootenai Tribe of Idaho research demonstrated	potentially new authorizations would be required under the *Water Sustainability Act*. The *Land Act* will apply to activities within Crown land. Under the *Wildlife Act* the Project will require Scientific Fish Collection Permits for managing/conserving fish, including Westslope Cutthroat Trout, associated with authorizations for works in and about a stream.

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		elevated selenium in water and fish tissue throughout the U.S. Kootenai; the impacts on the Kootenai River run all the way from Koocanusa back to the Canadian border at Creston, B.C. The U.S. Conservation Groups believe that: the B.C.-Montana process to establish a selenium standard at the border will not be successful (i.e. development of a shared selenium water standard) or that B.C. will not be able or willing to enforce the shared water standard; and B.C.'s regulatory system has not worked to protect our river and fish to date or in the future. The U.S. Conservation Groups expressed concerns with the proponent's use of unproven Saturated Rock Fill (SRF) technology with little public information available on its functionality and reliability. Teck's permit application for their Elkview SRF is more than double the selenium and nitrate limits used for the Active Water Treatment Facility (AWTF). Issues with the Line Creek AWTF and permit amendments for the Fording River Operations South AWTF also raise concerns. **Yellowstone to Yukon Conservation Initiative:** While the Yellowstone to Yukon Conservation Initiative believes that Teck is making efforts in good faith to address the selenium issue with water treatment technologies, those systems are unproven and have thus far not worked. Mining pollution will endure for centuries, and a federal assessment can evaluate these impacts in the appropriate time scale, which has not occurred in previous provincial environmental assessments of mine expansions in the Elk Valley. **15 Canadian Non-Governmental Organizations (NGOs):** The Project has the potential to cause long-term, cumulative adverse effects to fish and fish habitat due to pollutants, leaching from waste rock into an environmentally sensitive area. The pollutants include selenium, nitrate, sulphate, nickel, and calcite. Selenium levels downstream from Fording River Operations are at 100 times the B.C. Water Quality Guideline for the Protection of Aquatic Life, which is of particular concern for the SARA-listed Westslope Cutthroat Trout population in the upper Fording River and its tributaries. The 15 Canadian NGOs also raised concerns over increased water pollution and lack of action taken by the province to effectively enforce water quality standards, despite: • Teck's non-compliance with pollution limits set in the Elk Valley Water Quality Plan (EVWQP); • the B.C. Auditor General's 2016 Audit of Compliance and Enforcement that pointed out major environmental isses with mine permitting in the Elk Valley; • B.C. and Montana's collaborative efforts to establish a shared pollution limit in Lake Koocanusa; • regulations in the *Fisheries Act* intended to protect fish; and • a report from an expert witness hired by ECCC in 2014. Further, the Project design includes the use of Saturated Rock Fill (SRF) technology, for which there is little public information available on its effectiveness and has not been evaluated by a third party. Teck's SRF and Active Water Treatment Facility (AWTF) have not proven effective in meeting the EVWQP limits. The AWTF failure in 2014 resulted in fish mortality and released highly bio-available forms of selenium, and was subsequently shut down. Teck's permit applications for SRF and AWTF development and expansion have requested limits exceeding the EVWQP limits for selenium and nitrate by 2 and 2.5 times, respectively. As well, SRF and AWTF technologies are not a viable solution for long-term, cumulative water pollution enduring for centuries. As such, the 15 Canadian NGOs assert that a federal assessment would ensure that potential pollution from the Project is compliant with the	

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		upcoming federal *Coal Mining Effluent Regulations* and that long-term impacts are assessed. Additionally, destruction of fish habitat is a significant concern. **Interested Parties:** The Mining Association of Canada indicated that the Project does not require designation and noted that the federal government has other instruments, such as the *Fisheries Act*, to address any residual impacts on areas of federal jurisdiction. **Public Views:** Selenium pollution downstream from effluent discharge points and seepage from tailings storage and waste rock impoundments in the Fording River and its tributaries; Adverse effects of elevated selenium levels downstream from Fording River Operations on the developmental and reproductive health of Westslope Cutthroat Trout; A decline in the upper Fording River's adult Westslope Cutthroat Trout population by 93 percent, and juvenile Westslope Cutthroat Trout population by 74 percent, from 2017 to 2019; Fish habitat degradation as a result of erosion and sedimentation; Adverse effects to water quality in the Elk River, Koocanusa Reservoir, Chauncey Creek and the Kilmarnock headwaters; and Cumulative effects of historical and current mining on water quality in the Elk Valley.	
A change to aquatic species, as defined in subsection 2(1) of the *Species at Risk Act*	For Westslope Cutthroat Trout (Special Concern under Schedule 1 of SARA), see potential project effects and proposed mitigations as listed above for 'a change to fish and fish habitat'. No adverse effects to marine plants are anticipated, as there is no interaction between the Project and the marine environment.	**DFO, EAO, ENV, FLNRORD** and **EMPR**: see response provided above for 'a change to fish and fish habitat'. **Environment and Climate Change Canada** (ECCC): ECCC is concerned about potential effects to fish and fish habitat due to Project-related changes in water quality (e.g. increases in selenium, nitrate, sulphate and cadmium concentrations and calcite deposits) that may adversely affect fish and aquatic species listed under the *Species at Risk Act* (SARA) including Westslope Cutthroat Trout (aquatic species of special concern listed in Schedule 1 of SARA). **United States Environmental Protection Agency** (U.S. EPA): The U.S. EPA is concerned about impacts to aquatic resources in B.C. that are under federal jurisdiction that could extend to downstream Lake Koocanusa resources, including the recent declines in Westslope Cutthroat Trout populations in the Fording River near the proposed mine site. **Ktunaxa Nation Council:** In the section of the Fording River where the Project is planned, the Westslope Cutthroat Trout population is considered to be of high conservation value due to being isolated, genetically pure and extremely vulnerable to additional impacts because of significant cumulative impacts in the watershed. **Kainai (Blood Tribe) and Siksika Nations:** The Project has the potential to cause adverse effects to fish and fish habitat, specifically on high-value habitat of the Westslope Cutthroat Trout. **Ecojustice on behalf of Wildsight Society:** The Project is located adjacent to the heavily-polluted upper Fording River, where a recent population crash saw adult Westslope Cutthroat Trout reduced by 93 percent. Polluted water from waste rock storage at the Project would flow primarily into the upper Fording River. Also see response provided above for 'a change to fish and fish habitat'. **17 U.S. Conservation Groups:** Long-term pollution from the Elk Valley may adversely effect White Sturgeon (a U.S. protected species under the *Endangered Species Act*) in the Kootenai River, a	**DFO** – see response provided above for 'a change to fish and fish habitat'. **ECCC** – see response provided above for 'a change to fish and fish habitat'. **EAO, ENV** and **FLNRORD** – see response provided above for 'a change to fish and fish habitat'

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		population which is shared between B.C., Idaho, and Montana; the impacts on the Kootenai River run all the way from Koocanusa back to the Canadian border at Creston, B.C. **15 Canadian NGOs:** The Westslope Cutthroat Trout population that inhabits the Fording River directly downstream from Fording River Operations is an isolated population that has experienced a population decline of 93 percent of adult fish in two years. The Project has the potential to cause adverse effects to this isolated population as a result of cumulative effects to the Fording River watershed. **Interested Parties:** see response provided by the Mining Association of Canada above for 'a change to fish and fish habitat'. **Public Views:** Adverse effects to the Westslope Cutthroat Trout population; and Adverse effects to the White Sturgeon population, an endangered aquatic species listed in Schedule 1 of SARA, in the Kootenay River.	
A change to migratory birds, as defined in subsection 2(1) of the *Migratory Birds Convention Act*, *1994*	**Potential Project Effects** Direct loss, temporal loss, or change in quality, quantity of vegetation and wildlife habitat. Sensory disturbance to wildlife. Accidental direct mortality to wildlife due construction, operations, traffic. Displacement of wildlife. Health effects on vegetation and wildlife due to changes in air, water and soil quality. Health effects to aquatic resources due to changes in water quality. **Proposed Mitigations** Implement appropriate management practices and ecosystem/species management plans. Avoid and/or minimize Project interaction with sensitive and at risk ecosystem and biodiversity elements (reduce the size and timing of impacts). Minimize mine footprint through phased operation, maximized backfill waste deposition and progressive and interim reclamation. Implement a reclamation and closure plan integrating the proponent's Biodiversity Program and vision of working to achieve net positive impact on biodiversity in areas affected by Project activities. Devise an offset strategy targeting the improvement and/or protection of sensitive ecosystem and biodiversity elements in the Elk Valley (e.g., the proponent's conservation lands	**ECCC:** Potential effects to migratory birds include the following: Project activities may lead to destruction, disturbance and fragmentation of habitat (e.g., foraging, nesting), habitat avoidance, sensory disturbance and the inadvertent disturbance and destruction of individuals, nests and eggs of migratory birds protected under the *Migratory Birds Convention Act*; Project activities may lead to changes in water quality (e.g. increase in selenium concentrations) may adversely impact migratory birds such as Spotted Sandpipers and American Dippers. Elevated selenium concentrations in the diet of water birds can lead to embryotoxicity and reproductive deformities; and the Project may also affect wetlands through construction of terrestrial components, as well as changes to water quality. Effects on wetlands may include wetland loss, reduction, alteration and change in wetland function. The Proponent has identified wetlands along the Fording River and Kilmarnock Creek. The Project has the potential to adversely affect these wetland communities and ecological functions, thereby also affecting the availability and/or quality of wetland habitat for migratory birds and other wildlife. **Ktunaxa Nation Council:** Many of the estimated 60 forest and grassland bird species that would be expected to breed locally, including raptors, Black-backed and Three-toed Woodpeckers, Brown Creeper, Northern Flicker and Pacific Wren are protected under the *Species at Rick Act*. The Project is located within the internationally important Rocky Mountain Flyway. The Ktunaxa Nation Council believes that a federal assessment would help focus attention on identifying and assessing potential effects on migratory birds and their habitat, as well as methods for managing such effects. **Kainai (Blood Tribe) and Siksika Nations:** The Project has the potential to cause adverse effects to migratory birds, including the Spotted Sandpiper and the Harlequin Duck, as well as adverse effects to their habitat (e.g., streams). **Ecojustice on behalf of Wildsight Society:** There are many migratory birds that use the area that may be impacted by the Project, including waterways in Canada and the U.S. Of particular concern are species that use aquatic environments in rivers and lakes downstream of the Project, where the cumulative effects of mining in the Elk and Kootenay/Kootenai watersheds are significant. Specifically, species that feed on fish, fish eggs and aquatic invertebrates, where significant levels of selenium and other pollutants are found, are at the greatest risk.	**ECCC:** A Species at Risk permit may be required if a SARA-listed migratory bird (individual or residence) is affected by the Project. The Agency understands that a permit under the *Migratory Birds Convention Act* may be required if Project activities affect migratory birds.

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	in the Elk Valley likely provide opportunities to apply habitat enhancement actions). Identify offsetting opportunities as quantified through loss-gain accounting and through engagement with government and Indigenous peoples.	Two examples of these species include Spotted Sandpiper and American Dipper. Previous studies have raised concerns about both these species and ongoing work by ECCC on American Dipper has found elevated levels of selenium in individuals and their eggs, though the impact of these selenium levels is still under study and little is known about the long-term implications on populations. Other potential migratory species of concern due to their aquatic diet include, but are not limited to, Northern Waterthrush, Varied Thrush, Harlequin Duck and Canada Goose.	
A change to the environment that would occur on federal lands	**Potential Project Effects** The proponent provided additional information in response to an Information Request from the Agency and noted that there will be no direct Project impacts to federal lands and that although Dominion Coal Black Parcel 73 is located approximately 70 kilometres from the Project area, adverse effects to the Dominion Coal Block are not anticipated.	**Ecojustice on behalf of Wildsight Society:** While the closest national park (Kootenay National Park) is located approximately 70 kilometres from the Project, this distance is along the Rocky Mountains, an important connectivity corridor from Waterton-Glacier International Peace Park in Alberta and Montana and the Rocky Mountain parks complex for wide-ranging wildlife, including Grizzly Bears and Wolverines. Further damage to this connectivity link could have long-term implications for wildlife populations within the Rocky Mountain National Parks. **17 U.S. Conservation Groups:** The Project would have potential long term, cumulative impacts on wildlife that use the Crown of the Continent eco-region in Montana and B.C.; this includes the crucial connectivity corridor from Glacier-Waterton International Peace Park (and points south) to Canada's Rock Mountain National Parks complex. Of particular concern are wide-ranging species including Grizzly Bears and Wolverine. The location of the Project, adjacent to the Continental Divide, could significantly impair connectivity for these species to travel north-south, further isolating the populations in the US from Canadian populations, with potentially significant impacts. **Yellowstone to Yukon Conservation Initiative:** The Project would have the potential for long-term, cumulative impacts on wildlife, including the connectivity corridor from Glacier-Waterton International Peace Park to Canada's Rocky Mountain National Parks complex. The Yellowstone to Yukon Conservation Initiative are particularly concerned about wide-ranging species including Grizzly bears and Wolverines; connectivity in the region is already compromised by historic industrial impacts and fragmented by Highway 3 and the Canadian Pacific Railway. **15 Canadian NGOs:** The Project would have the potential for adverse effects to wildlife that inhabit Canada's Rocky Mountain National Parks. Disruptions to the Crown of the Continent connectivity corridor could impact large species like Grizzly Bear that use the corridor to travel north-south among National Parks and over the divide into Alberta.	A determination under section 82 of IAA would be required for projects on federal lands, but is not applicable to the Project. Compliance with the *Species at Risk Act* is required.
A change to the environment that would occur in a province other than the one in which the project is being carried out or outside Canada (transboundary effects)	**Potential Project Effects** The proponent provided additional information in response to an Information Request from the Agency and clarified that as the Project will be designed to meet the intent of the Elk Valley Water Quality Management Plan (below), the geographic extent of potential impacts to water quality will be limited and will not extend beyond the boundaries of B.C. Increases in greenhouse gas emissions have the potential to affect climate change. The proponent did not provide information on potential transboundary effects on wildlife and air quality but indicated that they will be evaluated at appropriate scales (local and regional, and geographic and temporal	**Global Affairs Canada** (GAC): The Project has the potential to cause adverse effects outside of Canada. The Project is within a transboundary watershed and may result in negative impacts on downstream water quality in Koocanusa Reservoir and Kootenai River, in the U.S. **ECCC:** Project activities may result in the potential for the following effects outside of the province of British Columbia: transboundary water quality effects in Koocanusa Reservoir, and the Kootenai watershed in the U.S.; and air quality effects outside of B.C. based on proximity to the B.C.-Alberta border (<10 kilometres). Furthermore, the construction, operation, and decommissioning of the Project may result in greenhouse gas emissions (GHG), and the Project has the potential to be affected by future climate change, possibly resulting in impacts to the environment. In the Initial Project Description submitted to the province, the proponent anticipates the change to emissions and GHGs to be minor compared to existing activities (either a very small increase or a very small decrease), but ECCC has not verified this conclusion. Should the Project be designated, the draft Strategic Assessment of Climate Change	**GAC:** GAC does not have a legislative or regulatory mechanisms to administer or manage the potential adverse effects within federal jurisdiction or adverse direct or incidental effects of the Project. However, as the Project is within transboundary watersheds, GAC may be required to address the concerns of U.S. officials under *the Boundary Waters Treaty of 1909*. **ECCC:** Federal regulatory mechanisms to manage potential environmental effects related to GHG emissions include the proposed Clean Fuel Standard

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	respectively) in the Environmental Assessment under the B.C. EAA. **Proposed Mitigations** <u>Water Quality</u> Elk Valley Water Quality Management Plan: The proponent has developed an area-based management plan for the Elk River watershed and the Canadian portion of the Koocanusa Reservoir to identify the actions it will take to manage water quality downstream of its five mines. Elk Valley Permit (Permit 107517): This permit includes actions and commitments defined in the Elk Valley Water Quality Management Plan, including target concentrations for water quality at sites throughout the Elk Valley and Koocanusa Reservoir. Memorandum of Understanding (MOU) and Cooperation on Environmental Protection, Climate Action and Energy between the Province of British Columbia and the State of Montana (2010): The Ktunaxa Nation and other U.S. Indigenous groups are named partners on the MOU. Through this agreement, the province will, where appropriate, invite Montana to participate in working groups established for environmental assessment or projects with potential transboundary effects on water quality or land resources. Through this MOU, the EAO will, if appropriate, invite participation in the Project environmental assessment. <u>Greenhouse Gas Emissions</u> Efficient operation of the vehicle fleet, and equipment/coal dryer to minimize greenhouse gas emissions. Investigation of other options to reduce air emissions/consideration of alternative technologies (e.g., electric vehicles).	(SACC)[18] provides interim guidance related to climate change throughout the impact assessment process. The SACC outlines information that the Proponent should provide, including but not limited to GHG emissions, GHG mitigation measures and climate change resilience. **EAO, ENV, FLNRORD** and **EMPR:** EAO and the three ministries identified the following provincially-led or mandated mechanisms to address transboundary issues: Lake Koocanusa Monitoring and Research Working Group and the Transboundary Monitoring Task Group; and collaboration commitments with the State of Montana, Montana Department of Environmental Quality, the U.S. Environmental Protection Agency, the Ktunaxa Nation Council and US Tribes. **U.S. EPA**: The U.S. EPA asserted that the Project has the potential to cause adverse effects, including impacts to the environment both inside and outside of Canada. The U.S. EPA noted that direct and cumulative impacts from coal mining in the Elk Valley have resulted in documented impacts to Lake Koocanusa and the Kootenai River water quality, fish and fish habitat in the U.S. and that they are concerned that new projects will increase pollutant loading to Lake Koocanusa and the Kootenai River. **State of Montana:** The Project has the potential to cause downstream water quality impacts in Montana watersheds due to elevated and increased levels of selenium from mining operations in the Elk Valley. Water quality standards, including selenium standards, are needed for the protection of aquatic life in Lake Koocanusa and the Kootenai River. **Ktunaxa Nation Council:** Potential project effects include effects to water quality and fish across the international border. Ktunaxa Nation Council indicated concern regarding water quality impairment caused by the accumulation of mine-related contaminants in the waters and fish of the Koocanusa Reservoir. An increasing selenium trend can be detected further downstream via the Kootenay River through Montana and Idaho and back up to the Yaqan Nukiy area. As well, the Fording River Operations stood at number 7 of 191 top greenhouse gas emitters in B.C. in 2017. **Tribal Councils of the Confederated Salish and Kootenai Tribes and the Kootenai Tribe of Idaho:** The Project has the potential to cause adverse transboundary effects in the U.S. and traditional Tribal territory on water quality, fish, wildlife and traditional cultural uses by the Nations. Recent studies document elevated levels of selenium and nitrates in the transboundary Koocanusa Reservoir and the Kootenai River within the U.S. that exceed U.S. EPA thresholds. The Project has the potential to cause cumulative effects to the transboundary Kootenai watershed, and the cumulative effects assessment needs to accurately and robustly evaluate cumulative environmental impacts at the appropriate geographic scale, considering all mines in the Elk Valley. **Kainai (Blood Tribe) and Siksika Nations**: The Project has the potential to cause adverse effects across the provincial border into Alberta. The Project may impact wildlife habitat of Bighorn Sheep that spans B.C. and Alberta. Kainai (Blood Tribe) and Siksika Nations also indicated that the Project has the potential to cause adverse effects across international borders, including the pollution of rivers that cross international borders. Kainai (Blood Tribe) and Siksika Nations pointed out the elevated selenium levels and the growing concern of the U.S. EPA and the Tribal Councils of the Confederated Salish and Kootenai Tribes and the Kootenai Tribe of Idaho regarding this issue.	Regulations, which would reduce the lifecycle carbon intensity of fuels used in mobile and stationary equipment and could incent the use of electric or zero emissions technologies in lieu of those equipment. **ECCC:** A license under the *International River Improvements Act* may be required from ECCC to construct, operate or maintain an international river improvement, such as a dam or water diversion. **ECCC:** The Project would be subject to federal greenhouse gas emissions reporting, pursuant to the Canadian *Environmental Protection Act, 1999*, in addition to reporting required from the SACC.

[18] Government of Canada. 2020. Strategic Assessment of Climate Change. Environment and Climate Change Canada, Ottawa. 25 pp. online; https://www.canada.ca/content/dam/eccc/documents/pdf/sacc/Draft_Strategic_Assessment_of_Climate_Change.pdf

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		Ecojustice on behalf of Wildsight Society: The Castle Project would send water pollution downstream from the upper Fording River into the Elk River, which then flows into the international Koocanusa Reservoir and into the U.S. Kootenai River, which returns to Canada as the Kootenay River in Creston. This cumulative water pollution would impact fish populations in the Koocanusa Reservoir, including in the U.S. part of the reservoir, a subject under investigation in the B.C.-Montana Koocanusa process. It also has the potential to impact fish downstream in the Kootenai River, including endangered White Sturgeon, the subject of significant recovery efforts by U.S. First Nations. In recent years, there has been concern from both sides of the border about possible violation of the *Boundary Water Treaty of 1909*, which prohibits pollution of shared waterways and the need for an International Joint Commission reference to resolve the cumulative transboundary water pollution issue due to the Elk Valley coal mines. The Castle Project is also located approximately five kilometres from the B.C.-Alberta border. Effects on terrestrial wildlife would be geographically broad and would include impacts on species that travel widely along the important Rocky Mountain wildlife corridor, especially Grizzly Bears and Wolverines. For these species, this area of the Rocky Mountains is an important connectivity link for wildlife travelling from Glacier National Park in Montana and even Yellowstone National Park to the Canadian Rocky Mountain parks complex and beyond. B.C. environmental assessments for past mine expansions have not and cannot properly consider impacts downstream of the U.S. border, which includes not only the U.S. portion of the Koocanusa Reservoir and the U.S. Kootenai River, but also the Canadian Kootenay River around Creston. A federal assessment is needed to evaluate these transboundary impacts. Additionally, federal assessment is required to ensure Canada does not violate (or further violate) the longstanding *Boundary Waters Treaty*. **17 U.S. Conservation Groups:** The Project has the potential for significant impacts on water pollution in Lake Koocanusa, including cumulative impacts of multiple pollutants, including nitrate, sulphate and nickel; and long-term pollution from the Elk Valley adversely effecting White Sturgeon (a U.S. protected species under the *Endangered Species Act*) in the Kootenai River, a population which is shared between B.C., Idaho, and Montana. The impacts on the Kootenai River run all the way from Koocanusa back to the Canadian border at Creston, B.C. Recent United States Geological Survey/Kootenai Tribe of Idaho research demonstrated elevated selenium in water and fish tissue throughout the US Kootenai. Canada may violate the *Boundary Waters Treaty* in such a way that long-term damage occurs before any changes can be made, given the long-term nature of pollutant leaching. The 17 U.S. Conservation Groups believe that: the B.C.-Montana process to establish a selenium standard at the border will not be successful (i.e. development of a shared selenium water standard) or that B.C. will not be able or willing to enforce the shared water standard; and the scientific studies carried out by Teck Coal Limited are not sufficient in Lake Koocanusa or downstream. The Project would have potential long term, cumulative impacts on wildlife that use the Crown of the Continent eco-region in Montana and B.C. This includes the crucial connectivity corridor from Glacier-Waterton International Peace Park (and points south) to Canada's Rock Mountain National Parks complex. Of particular concern are wide-ranging species including Grizzly Bears and Wolverine. The location of the Project, adjacent to the Continental Divide, could significantly impair connectivity for	

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		these species to travel north-south, further isolating the populations in the US from Canadian populations, with potentially significant impacts. **Yellowstone to Yukon Conservation Initiative:** The impacts of the Castle Project would be transboundary, and a provincial assessment would likely not assess impacts in Montana and Idaho. The Yellowstone to Yukon Conservation Initiative has recently seen concerns about the downstream water pollution from existing mines being voiced by International Joint Commission Commissioners, the U.S. EPA, the States of Montana and Idaho, U.S. Tribes, and U.S. citizens and organisations. B.C.'s environmental assessments of all previous mine expansions and of current new mine proposals have not considered impacts in the U.S. The Project would have the potential for long-term, cumulative impacts on wildlife, including the connectivity corridor from Glacier-Waterton International Peace Park to Canada's Rocky Mountain National Parks complex. The Yellowstone to Yukon Conservation Initiative are particularly concerned about wide-ranging species including Grizzly bears and Wolverines; connectivity in the region is already compromised by historic industrial impacts and fragmented by Highway 3 and the Canadian Pacific Railway. A federal assessment is appropriate because of the potential impacts to Canada's ability to meet their national climate goals, due to the greenhouse gas emissions associated both with coal mining operations and the burning of that coal. **15 Canadian NGOs:** The Project has the potential for long-term, cumulative adverse effects to fish species downstream in the U.S. in Lake Koocanusa and the Kootenai River. The 15 Canadian NGOs indicated that studies conducted by the U.S. Geological Survey have found elevated levels of selenium in muscle tissue and ovaries of fish inhabiting the Kootenai River watershed. There is potential for adverse effects to the endangered White Sturgeon population, listed under the U.S. Endangered Species Act, which is a species of high conservation value due to the isolated nature of its population. The 15 Canadian NGOs asserted that despite concerns raised over the years by numerous interested parties in the U.S., including the International Joint Commission, the U.S. EPA, the States of Montana and Idaho, U.S. Tribes, and U.S. citizens and organizations, B.C. provincial assessments for proposed mine projects have not considered transboundary impacts to the U.S. As such, a federal assessment is necessary for the Project to ensure that these effects are assessed. Additionally, mined coal from the Project would be exported globally and used for steelmaking, which would produce carbon emissions that would contribute to climate change. As well, disruptions to Grizzly Bear connectivity corridors have the potential for adverse effects to Grizzly Bears in Alberta and the U.S. **Public Views:** Selenium and nitrate water pollution flowing from the upper Fording River into the Kootenai River Basin in Montana, and the associated impacts on fish and wildlife; Effects to White Sturgeon, a federally listed species in the U.S., in the Kootenai River in Montana; and Climate change impacts and the effects of upstream GHG emissions, and downstream GHG emissions associated with the combustion of coal produced from the Project.	
With respect to the Indigenous peoples of Canada, an impact - occurring in Canada and	**Potential Project Effects** Effects to cultural heritage, such as language, knowledge, sacred values, sense of place, intergenerational	**Ktunaxa Nation Council:** Potential project effects include loss of Ktunaxa cultural, historical and archeological sites due to land disturbance associated with the Project and loss of access to, and sensory disturbance impacting preferred places, preferred species and resources, and preferred practices central to Ktunaxa use, language and identity in the Elk Valley.	The Agency understands that authorizations or permits are required under the *Heritage Conservation Act* (regulated by FLNRORD) which would

Adverse Effect or Public Concern in Relation to Subsection 9(1) of the *Impact Assessment Act*	Potential Project Effects and Mitigations as Proposed by the Proponent	Input from Federal and Provincial Experts, Indigenous Groups, Requester, Interested Parties, and the Public	Potential Relevant Legislative or Regulatory Mechanisms NOTE: See Annex II for more detail
resulting from any change to the environment - on physical and cultural heritage and any structure, site, or thing that is of historical, archaeological, paleontological or architectural significance	transmission of knowledge and practices and other values of importance. Effects to archaeological resources due to land clearing, mining, logging and waste rock storage areas. **Proposed Mitigations** The proponent did not propose any mitigation measures related to physical and cultural heritage. Implement appropriate management plans, such as chance find procedures.	**Kainai (Blood Tribe) and Siksika Nations**: The Project has potential impacts to the Blackfoot culture, spirituality and traditional knowledge. Cultural transmission is integral to their ability to pass down their ways of life. Kainai (Blood Tribe) and Siksika Nations use the Project area for seasonal pilgrimages and gathering expeditions to sacred sites.	require the proponent to identify protected archeological sites that will be directly or indirectly disturbed and to follow protocols to protect any discovered archeological artifact or human remains.
With respect to the Indigenous peoples of Canada, an impact - occurring in Canada and resulting from any change to the environment - on current use of lands and resources for traditional purposes	**Potential Project Effects** Loss and/or disruption of use due to mining activity and reduced access. Impacts to wildlife harvesting activities due to effects to wildlife and fish habitat and abundance. Changes to water quality and groundwater quality from current and future projects. Effects to the quality of experience during use from effects of dust, noise and visual disturbance. Cumulative terrestrial effects. **Proposed Mitigations** Continued implementation of the Elk Valley Water Quality Plan. Continued implementation of the Tributary Management Plan. Continued implementation of the Elk Valley Permit. Continued implementation of the Elk Valley Cumulative Effects Management Framework. Continue to support the Elk Valley Fish and Fish Habitat Committee. Incorporate source control procedures (e.g., blast procedures). Access and Use agreements. Changes in design of the Project. Management practices and environmental management plans for Ecosystems, Species, Aquatic Health, Cumulative Terrestrial Effects, Air Quality, Noise and Visual Quality. Progressive and interim reclamation. Consideration of offsets.	**Ktunaxa Nation Council:** The proposed Project is in area of central importance to the Ktunaxa Nation, where Ktunaxa citizens are engaged in the ongoing practice of Ktunaxa rights through the use of lands and resources**.** The Project may result in loss of access to, and sensory disturbance impacting preferred places, preferred species and resources, and preferred practices central to Ktunaxa use, language and identity in the Elk Valley. The Project would also potentially result in the loss of opportunity to carry out cultural practices, including teaching, traditional use and harvesting activities (such as fishing, hunting and gathering), in both the Project area and the surrounding area and impacts to water quality. Cumulative effects are already at or beyond significant and sustainable thresholds. The Ktunaxa Nation Council is deeply concerned about habitat fragmentation and high road and stream crossing density in a valley already so impacted by development. The cumulative impact of the discharge of selenium and other contaminants on water quality is of particular concern to the Ktunaxa Nation Council. **Kainai (Blood Tribe) and Siksika Nations:** The Project has potential impacts to the Kainai (Blood Tribe) and Siksika Nations' hunting and fishing rights and practices within their Blackfoot traditional territory that will be adversely affected by the Project's impacts on wildlife habitat, migratory birds and fish and fish habitat. The Project would also potentially impact Kainai (Blood Tribe) and Siksika people's ability to carry out important religious, legal and cultural practices within Crowsnest Pass, Elk Valley and upper Old Man River. Kainai (Blood Tribe) and Siksika Nations also highlight the cumulative impact of all projects in the area on their ability to practice their rights now and in the future. **Health Canada:** The Project may cause effects to the health of Indigenous peoples who practise traditional activities, such as habitation, hunting, fishing, plant and animal harvesting, in the Project area. **ECCC:** The following potential adverse effects are within ECCC's mandate: aerial deposition of contaminants may adversely affect the quality of traditional foods, including plants, berries, and wild game; changes to water quality may adversely affect the health and quality of fish; and potential cumulative effects in the region including water quality, air quality, and impacts to wildlife and their habitat, due to the high density of existing and proposed coal mining operations in the Elk Valley. **Public View:** Effects to Indigenous communities in Alberta.	The Agency understands that a *Fisheries Act* authorization (regulated by DFO) might be required, which would require further consultation with Indigenous groups. The Agency understands that the *Forest and Range Practices Act* (regulated by FLNRORD) and *Environmental Management Act* (regulated by ENV) may apply. The Agency understands that the *Explosives Act* (regulated by Natural Resources Canada) permits might be required for temporary storage explosives magazines as part of the Project.

Adverse Effect or Public Concern in Relation to Subsection 9(1) of the *Impact Assessment Act*	Potential Project Effects and Mitigations as Proposed by the Proponent	Input from Federal and Provincial Experts, Indigenous Groups, Requester, Interested Parties, and the Public	Potential Relevant Legislative or Regulatory Mechanisms NOTE: See Annex II for more detail
Any change occurring in Canada to the health, social or economic conditions of the Indigenous peoples of Canada	**Potential Project Effects** *Health* Air Quality - increased particulate matter concentrations (PM2.5 and PM10) may cause heath risk. Quality of Traditional Foods. Uptake by people and wildlife of metals, metalloids and polycyclic aromatic hydrocarbon deposited from coal dust on plants and soil. Effects to health of people, fish and wildlife due to changes in water quality. Effects to economic conditions of Indigenous businesses (e.g., guide outfitters) due to effects of dust, noise and visual disturbance on the environmental setting. Effects to the quality of experience during use from effects of dust, noise and visual disturbance. *Social or economic* Changes to population in local communities. Changes to employment, income, local revenue and gross domestic products. Changes to housing demand in local communities. Worker and public health and safety. Changes to demand for local services and infrastructure. Changes to community and individual health and well-being. Loss of cultural and tourism values due to Project-related activities, reduced access, changes to plant, fish and wildlife resources, visual quality and noise. **Proposed Mitigations** Implement an air quality and dust control plan. Implement a Site Water Management Plan and the Elk Valley Water Quality Management Plan. Implement and plan for employment policies, local procurement of goods and services, local skills development programs. Environment, Health, Safety and Community plans. Support local initiatives to address demand for housing and local services. Targeted initiatives to address economic and social effects to Indigenous people.	**Ktunaxa Nation Council:** The Project may cause effects to the health social and economic conditions of Ktunaxa people through: impacts to traditional use and harvesting activities, including fishing, hunting and gathering; effects to lands and waters which are actively used and occupied; effects to water quality; impacts to an area of central importance where Ktunaxa people are engaged in the ongoing practice of Ktunaxa rights; loss of Ktunaxa cultural, historical and archaeological sites; greenhouse gas impacts; loss of opportunity to carry out cultural practices; loss of access to, and sensory disturbance impacting, preferred places, preferred species and resources, and preferred practices central to Ktunaxa use, language and identify; and cumulative effects. **Kainai (Blood Tribe) and Siksika Nations:** The Project may cause effects to the health, social and economic conditions of the Blackfoot people through impacts on: resources; the practice of Aboriginal and treaty rights and interests including hunting and fishing; cultural, legal, and religious practices including gathering, trapping, camping, and the harvesting of resources; seasonal pilgrimages and gathering expeditions, cultural transmission of Blackfoot culture, spirituality and traditional knowledge; water and air quality; decreased confidence in the resources; and cumulative effects. **Women and Gender Equality** (WAGE): The coal extraction projects have different impacts upon women, men and gender diverse persons from a range of groups (e.g. disability, income) and communities (e.g. different nations) in a variety of ways including: employment opportunities; access to revenues; compensation or benefits and expanded investment in the local community; decision making roles for new innovation and technologies; access to services and programs that account for the perspective, knowledge and experiences of individuals and communities; the Project may reinforce existing inequalities; and where men gain employment and withdraw their labour from traditional subsistence activities such as hunting, fishing, gathering or trapping, this can create and exacerbate existing gender inequalities. **Health Canada**: Increases to air emissions from the Project construction and operations phases could impact Indigenous peoples and local communities' health. Project activities could also cause	**B.C.'s Environmental Assessment Office** (EAO): An environmental assessment certificate under the *Environmental Assessment Act* would assess effects to the health, social or economic conditions of the Indigenous peoples of Canada. The Agency also understands that the following provincial permits may be required: *Environmental Management Act* (regulated by ENV) permits for land disturbance, tailings storage, effluent discharge to land and water, disposal of office and shop waste and air emissions; *Water Sustainability Act* (regulated by ENV) permits for beneficial use of water from multiple sources; *Mines Act* (regulated by EMPR) permits for facilities and infrastructure; and *Coal Act* (regulated by EMPR) lease for long term coal production.

Adverse Effect or Public Concern in Relation to Subsection 9(1) of the *Impact Assessment Act*	Potential Project Effects and Mitigations as Proposed by the Proponent	Input from Federal and Provincial Experts, Indigenous Groups, Requester, Interested Parties, and the Public	Potential Relevant Legislative or Regulatory Mechanisms NOTE: See Annex II for more detail
		changes to the environment, such as air and fugitive dust emissions and potential runoffs from mine tailings in waterbodies and vegetation, which could result in higher levels of contaminants in traditional foods. **ECCC**: The following potential adverse effects within ECCC's mandate: aerial deposition of contaminants may adversely affect the quality of traditional foods, including plants, berries, and wild game; changes to water quality may adversely affect the health and quality of fish; and potential cumulative effects in the region including water quality, air quality, and impacts to wildlife and their habitat, due to the high density of existing and proposed coal mining operations in the Elk Valley. **Public Views:** Effects to employment and training opportunities for Indigenous peoples; and Effects of selenium water pollution on the health of Indigenous peoples.	
Adverse direct or incidental effects	The Project is at an early stage of design, so the exact list of federal approvals and permits is unclear. The proponent identified the following federal approvals and permits that it expects it will need: Fisheries and Oceans Canada - Authorization under the *Fisheries Act*; and Natural Resources Canada - Permitting under the *Explosives Act*. No information is available at this stage on mitigation measures associated with these authorizations or permits. No federal authority is expected to provide financial assistance to enable the Project to be carried out, in whole or in part.	In addition to those identified by the proponent, the following federal authorities are expected to exercise a power, or perform a duty or function under another Act of Parliament that would permit the carrying out of the Project: Fisheries and Oceans Canada or Environment and Climate Change Canada - Authorization under the *Species at Risk Act*; Environment and Climate Change Canada - Permitting under the *Migratory Birds Convention Act*; and Environment and Climate Change Canada - Greenhouse gas emissions reporting under the *Canadian Environmental Protection Act.*	Not applicable.
Effects on Species at Risk and their habitats	**Potential Project Effects** Direct loss, temporal loss, or change in quality, quantity of vegetation and wildlife habitat. Sensory disturbance to wildlife. Disruption of wildlife movement patterns in regional landscape. Accidental direct mortality to wildlife due construction, operations, and traffic. Displacement of wildlife. Health effects to vegetation and wildlife due to changes in air, water and soil quality. Health effects to aquatic resources (e.g., water birds and amphibians) due to changes in water quality. **Proposed Mitigations**	**ECCC**: The Project may affect species at risk and their habitat during construction, operations and closure activities. These activities can result in habitat loss, alteration and fragmentation, direct and indirect mortality, sensory disturbance and functional habitat loss and introduction of invasive species. The Proponent has identified federally listed species within the Project area including: Grizzly Bear (special concern), American Badger (endangered), Olive-sided Flycatcher (threatened), Barn Swallow (threatened), Bank Swallow (threatened), Western Toad (special concern) and Whitebark Pine (endangered). **Ktunaxa Nation Council:** Potential project impacts to American Badger, Olive-sided Flycatcher, and Western Toad and their habitats would benefit from federal assessment and oversight, as would other species and ecosystems that are also at risk and likely to be impacted by the Project. **Kainai (Blood Tribe) and Siksika Nations**: The Project would have potential impacts on their ability to exercise Treaty rights and cultural practices in relation to endangered species and environmentally sensitive habitats. The Project may have impacts on Whitebark Pine, Grizzly Bear and American Badger, as well as on mature and old growth forest and wetlands. **Ecojustice on behalf of Wildsight Society:** In general, the proponent's efforts to date in the Elk Valley have not demonstrated, at least in a publicly available form, that full reclamation of waste rock dumps, mine pits or other areas is feasible. The potential significant impacts on SARA-protected	The Agency understands that effects to species at risk may require a permit under the provincial *Wildlife Act,* and that effects to migratory birds as defined by the *Migratory Birds Convention Act* and aquatic species as defined by the *Species at Risk Act* may require a permit.

Adverse Effect or Public Concern in Relation to Subsection 9(1) of the *Impact Assessment Act*	Potential Project Effects and Mitigations as Proposed by the Proponent	Input from Federal and Provincial Experts, Indigenous Groups, Requester, Interested Parties, and the Public	Potential Relevant Legislative or Regulatory Mechanisms NOTE: See Annex II for more detail
	Implement appropriate management practices and ecosystem/species management plans. Avoid and/or minimize Project interaction with sensitive and at risk ecosystem and biodiversity elements (reduce the size and timing of impacts). Minimize mine footprint through phased operation, maximized backfill waste deposition and progressive and interim reclamation. Implement a reclamation and closure plan integrating the proponent's Biodiversity Program and vision of working to achieve net positive impact on biodiversity in areas affected by Project activities. Devise an offset strategy targeting the improvement and/or protection of sensitive ecosystem and biodiversity elements in the Elk Valley (e.g., the proponent's conservation lands in the Elk Valley likely provide opportunities to apply habitat enhancement actions). Identify offsetting opportunities as quantified through loss-gain accounting and through engagement with government and Indigenous Peoples. Continued implementation of the Whitebark Pine Management Plan and incorporate plan into design considerations for the Project, and germination and planting in currently reclaimed areas. Biodiversity Management Technical Advisory Group (TAG): The primary function of the TAG is to share scientific, technical and Ktunaxa Nation knowledge and to provide input on the proponent's Biodiversity Program, including input to operation-specific biodiversity management plans and the regionally focused Terrestrial Cumulative Effects Management Framework.	species both during mining and post-closure alone warrant federal assessment. A federal assessment should review reclamation efforts and plans to date for the Project, both in general and with a focus on critical habitat. The Project area includes more than three square kilometres of rare high-elevation grasslands that may be used by American Badgers, a SARA-listed endangered species. This grassland ecosystem could likely not be re-created at the end of mine life, not only because of the difficulties inherent in establishing a rare and sensitive grassland ecosystem, but also because the Project area may no longer include these high-elevation areas. Additionally, the high-elevation mountain slopes of the Project area are the critical habitat of the Whitebark Pine, a SARA-listed endangered species. Within the Project footprint, the species may never recover due to vegetation removal and the reduction in elevation due to mining. The Project will also result in significant potential adverse effects on terrestrial wildlife. Several of these terrestrial species are federal species of special concern under SARA, including wide-ranging species Grizzly Bears and Wolverines. With three existing coal mines in the immediate area (Fording River Operations, Greenhills, Line Creek) and other existing and proposed mines along the important Rocky Mountain connectivity corridor, there is significant concern that connectivity for these species could be impaired through the addition of the Project to an area where significant largescale destruction of habitat has already taken place. Additional endangered SARA-listed species may be found in the project area including Williamson's Sapsucker, Little Brown Myotis and Northern Myotis [the Agency has reviewed the IPD and the Northern Myotis is not listed as a species within the Project area], as well as a number of threatened bird and amphibian species. It is unknown if any planned reclamation or other mitigation efforts would address impacts on these species. The Project also has the potential to impact fish downstream in the Kootenai River, including White Sturgeon, the subject of significant recovery efforts by U.S. First Nations. **17 U.S. Conservation Groups:** The Project would have potential long term, cumulative impacts on wildlife that use the Crown of the Continent eco-region in Montana and B.C. This includes the crucial connectivity corridor from Glacier-Waterton International Peace Park (and points south) to Canada's Rock Mountain National Parks complex. Of particular concern are wide-ranging species including Grizzly Bears and Wolverine. The location of the Project, adjacent to the Continental Divide, could significantly impair connectivity for these species to travel north-south, further isolating the populations in the US from Canadian populations, with potentially significant impacts. **Yellowstone to Yukon Conservation Initiative:** The Project would have the potential for long-term, cumulative impacts on wildlife, including the connectivity corridor from Glacier-Waterton International Peace Park to Canada's Rocky Mountain National Parks complex. The Yellowstone to Yukon Conservation Initiative are particularly concerned about wide-ranging species including Grizzly bears and Wolverines; connectivity in the region is already compromised by historic industrial impacts and fragmented by Highway 3 and the Canadian Pacific Railway. **15 Canadian NGOs:** The Project would have the potential to impact Grizzly Bear (special concern) connectivity corridor in the Crown of the Continent area. This corridor allows Grizzly Bears to travel along the continental divide among Canadian and U.S. protected areas. Additionally, deforestation of Whitebark Pine (endangered) would be required for the Project. **Public Views:** Effects of habitat loss on Wolverine (special concern) and Grizzly Bear (special concern); Deforestation of Whitebark Pine (endangered);	

Adverse Effect or Public Concern in Relation to Subsection 9(1) of the *Impact Assessment Act*	Potential Project Effects and Mitigations as Proposed by the Proponent	Input from Federal and Provincial Experts, Indigenous Groups, Requester, Interested Parties, and the Public	Potential Relevant Legislative or Regulatory Mechanisms NOTE: See Annex II for more detail
		Improved wildlife habitat as a result of reclamation and restoration activities; and Protection of wildlife populations due to hunting restrictions within the mine property.	

ANNEX II

Annex II: Potential Federal, Provincial and International Legislative or Regulatory Mechanisms Relevant to the Project

Legislative or Regulatory Mechanism	Description
Federal	
Fisheries Act	Authorization under paragraph 35(2)(b) of the *Fisheries Act* is required when any activity that is not fishing results in the death of fish. Authorization under paragraph 34.4(2)(b) of the *Fisheries Act* is required when any activity that is not fishing results in the harmful alteration, disruption or destruction to fish habitat. Prior to issuing such authorizations, consultations with potentially impacted Indigenous groups would be undertaken. The *Fisheries Act* prohibits the deposit of deleterious substances into waters frequented by fish, unless authorized by regulations or other federal legislation.
Species at Risk Act	Authorization may be required if there are impacts to a species at risk, any part of their critical habitat or the residences of their individuals in a manner which is prohibited under sections 32, 33 and subsection 58(1) of the *Species at Risk Act*. Prior to authorization, the Competent Minister under this Act must be satisfied that the activities will not jeopardize survival or recovery of the species at risk.
Migratory Birds Convention Act	A permit is required for all activities affecting migratory birds, with some exceptions detailed in the Regulations. The *Migratory Birds Convention Act* prohibits killing, harming or collecting adults, young and eggs of migratory birds and screens and provides regulatory responses for effects to migratory birds.
Canadian Environmental Protection Act, 1999	A project may require greenhouse gas emissions reporting, if ten kilotonnes or more of greenhouse gas emissions are emitted in carbon dioxide equivalent units per year. This would be in addition to reporting required from the Strategic Assessment of Climate Change as part of an impact assessment review.
Explosives Act	A permit is required for temporary storage of explosives magazines.
Coal Mining Effluent Regulations (pending)	The Coal Mining Effluent Regulations (CMER; proposed under the *Fisheries Act*) are currently being developed by Environment and Climate Change Canada and would provide effluent quality standards to deposit deleterious substances (selenium, nitrate and suspended solids). As currently proposed, the CMER includes an alternative approach for existing mines in the Elk Valley. The target to pre-publish proposed regulations in Canada Gazette, Part I is early 2021 (followed by a 60-day comment period). Final regulations are targeted for early 2022, at which time they would be law.
Clean Fuel Standard Regulations (pending)	The proposed Clean Fuel Standard (CFS) Regulations will reduce the lifecycle carbon intensity of fossil fuels used in mobile and stationary equipment in the construction and operational phases of projects. In addition to the use of lower carbon fossil fuels that would be supplied, the CFS would incent some GHG reduction measures (such as the use of electric or zero emission technologies in lieu of fossil fuel equipment) that would enable the proponent to generate credits for trade. The regulations for the liquid fossil fuel class are being developed first, with draft regulations planned for publication in Canada Gazette, Part I, in Fall 2020 and final regulations in 2021.
Provincial (British Columbia)	
Environmental Assessment Act	The Act regulates the assessment of major projects in British Columbia for potentially adverse environmental, economic, social, heritage and health effects that may occur during the life cycle of these projects. Issuance of a certificate is required for reviewable projects to proceed. Section 3(2), Section 10(1) and Table 6 of the *Reviewable Projects Regulation* require an assessment under the EAA for mine expansion when: a) the existing project that is subject to the modification has a production capacity in excess of 250,000 tonnes per year of clean coal or raw coal or both; or b) the clearance of 600 hectares or more of land, unless the clearance has been authorized by the minister, or delegate, under the *Resort Timber Administration Act*.
Mines Act	Permits are required for on-site activities, including management of water quality, waste and metal leaching and acid rock drainage, as well as geotechnical design and reclamation and closure planning.
Coal Act	The Act authorizes the registration of coal titles.
Environmental Management Act	The Act regulates industrial and municipal waste discharge, pollution, hazardous waste and contaminated site remediation. The Environmental Management Act provides the authority for introducing wastes into the environment, while protecting public health and the environment. Each mine in B.C. is required to apply for, obtain and comply with conditions in a Waste Discharge permit issued under the Act and includes requirements related to discharge quality and quantity, development and implementation of management plans, monitoring programs and reporting.
Land Act	The *Land Act* governs the disposition, administration and management of Crown land in the province.

Legislative or Regulatory Mechanism	Description
Water Sustainability Act	*Water Sustainability Act* governs the licensing, diversion and use of water by maintaining water quantity, water quality and aquatic ecosystems in and for B.C. Authorizations may be issued for long-term diversion and storage of specific quantities of water for one or more water use purposes, short-term use approvals authorize holders to use water for a period up to 24 months and change approvals and notifications authorizing work, in and about a stream, and can include conditions and require public and Indigenous consultation.
Wildlife Act	This Act may require permits for Scientific Fish Collection Permits, and the removal of bird nests, amphibian species and beavers. Conservation measures include setting individual species population objectives as well as establishment of habitat protection measures, using a variety of legislative tools.
Forest and Range Practices Act	The *Forest and Range Practices Act* outlines how all forest and range practices and resource-based activities are to be conducted on Crown land in B.C., while ensuring protection of everything in and on them, such as plants, animals and ecosystems.
Forest Act	Governs the issuance of timber harvesting permits and forest service road use permits. Permission under this Act is required for activities it governs, on provincial Crown land.
Heritage Conservation Act	This Act requires an Archaeological Impact Assessment prior to clearing and ground disturbance. Permits may be required for disturbances or alteration of sites.
Public Health Act	The Act is the primary article of legislation that is used by the government to convey land to the public for community, industrial and business use. The Act allows the granting of land, and the issuance of Crown land tenure in the form of leases, licences, permits and rights of way.
International	
International Joint Commission established under the *Boundary Waters Treaty of 1909*	The International Joint Commission (IJC) is a bi-national organization established by the governments of the U.S. and Canada under the *Boundary Waters Treaty of 1909,* which is implemented in Canada by the *International Boundary Waters Treaty Act*. The treaty provides general principles, rather than detailed prescriptions, for preventing and resolving disputes over waters shared between the two countries and for settling other transboundary issues. The specific application of these principles is decided on a case-by-case basis. The IJC has two main responsibilities: approving projects that affect water levels and flows across the boundary, and investigating transboundary issues and recommending solutions. The IJC's recommendations and decisions take into account the needs of a wide range of water uses, including drinking water, commercial shipping, hydroelectric power generation, agriculture, ecosystem health, industry, fishing, recreational boating and shoreline property. The IJC, if provided with a Reference from the governments, can be asked to engage with all interested and affected parties to evaluate the transboundary effects of mining activity within the Elk Valley region. References have historically been provided jointly by the Governments of Canada and the U.S.; however, the IJC could operate under a unilateral Reference from one of the two Governments.
International River Improvements Act	A license under the *International River Improvements Act* is required from Environment Climate Change Canada to construct, operate or maintain an international river improvement, such as a dam or water diversion.