# FORDING RIVER OPERATIONS SWIFT PROJECT

# ASSESSMENT REPORT

With Respect to

the Application by Teck Coal Limited for an Environmental Assessment Certificate pursuant to the *Environmental Assessment Act,* S.B.C. 2002, c.43

Prepared by: Environmental

Assessment Office July 27, 2015

### **1** Introduction

This Assessment Report provides an overview of the environmental assessment (EA) of the proposed Fording River Operations Swift Project conducted by the Environmental Assessment Office (EAO). It discusses the key findings and conclusions of the EA, and cross-references relevant sections of the Technical Report chapters, where more in-depth analysis and discussion can be found.

### 2 **Project Description**

Teck Coal Limited (Teck) is proposing to develop the Fording River Operations Swift Project (Swift Project), located in southeast British Columbia (BC) in the Regional District of East Kootenay, approximately 20 kilometres northeast of the town of Elkford. Teck is Canada's largest producer and exporter of metallurgical coal, primarily used in steel-making, and operates five coal mines in the Elk Valley.

The Swift Project is an extension of the currently operating Fording River Operations open pit coal mine. The Project is on the east-facing slopes of the Greenhills range, adjacent to the Fording River which is a tributary to the Elk River. About half of the 3,200 hectare operating boundary of the Swift Project is located in an area that was mined about 30 years ago and remains currently permitted for mining. The balance of the Swift Project footprint is located on Crown land, some of which has been disturbed by timber harvesting, coal bed methane exploration, and site access construction. Figure 1 shows the Swift Project footprint in relation to the existing Fording River Operations.

Fording River Operations (FRO) has extracted approximately 230 million metric tonnes of coal since the early 1970s, and Teck proposes to mine an additional 170 million metric tonnes of coal over 25 years with the Swift Project.

As it is an extension of existing operations, the Swift Project will use existing FRO mine facilities, such as the coal processing plant and rail load out loop, coal rejects and tailings storage facilities, haul roads, explosives systems, stockpile areas, transmission lines, water and waste management facilities, and office and maintenance buildings. These components were not included in the scope of EA project components and activities, although the EA did consider any incremental use of those components in the assessment of the Swift Project's effects.



#### Figure 1: Project Footprint and Existing Fording River Operations

The EA of the Swift Project included the following components and activities, and covered all phases from construction, operations, closure and post-closure:

During construction:

- new and updated roads in the Swift Project area;
- site preparation, including timber extraction and land clearing;
- salvage of overburden and soils to be used in reclamation;
- soil stripping in the footprint of planned waste rock dumps (spoils), and construction of berms;
- development of surface water management and erosion control structures, such as settling ponds, piping and ditches;
- development of mine infrastructure and facilities, such as laydown and coal stockpiling sorting areas and monitoring devices;
- construction of alternate public access route and preparation of right-of-way for rerouting of main site power line feed at the north end of the Swift Project; and
- installation of site services, including power lines and systems, marshalling areas, and fuel and lube stations.

During operations:

- development and extraction from the open pit;
- placement of waste rock (spoils);
- storage of combined coal rejects and tailings;
- coal transportation to the FRO mill;
- solid and liquid waste management;
- fuel storage and hazardous materials handling;
- maintenance of mine infrastructure, facilities and services;
- explosives supply and management; and
- progressive reclamation activities.

Provided an Environmental Assessment Certificate (EAC) is issued and once they receive additional necessary permits and approvals, Teck plans to commence construction of the Swift Project as soon as late 2015. The operations stage would begin in Year 1 (2016), overlapping to some extent with the construction stage, and would end in approximately Year 25 (anticipated in 2040). The Swift Project does not require additional plant capacity beyond the 10 million metric tonnes of clean coal annual production of the current FRO design and approved operating conditions, and would not result in an increase to FRO's operational productive capacity.

Progressive reclamation will commence during operations. Following the operations stage (Year 25), the Swift Project will include reclamation and closure activities. Active reclamation will continue for approximately five years after mining is completed. Teck will conduct reclamation monitoring as required by the Ministry of Energy and Mines (MEM), and water quality management as required by Ministry of Environment (MOE). During post-closure when pit de-watering ceases, the pit will fill with water and is predicted to reach spill/overflow elevation in approximately 80 years, at which point

discharge will be considered. Teck will continue to operate infrastructure required for ongoing water quality management (e.g. active water treatment facilities, water diversion channels, settling ponds) in the post-closure period of the closure stage for as long as required by permits and regulation.

The Swift Project is in the asserted traditional territory of the Ktunaxa Nation (Ktunaxa), and in the consultative boundaries for the Shuswap Indian Band. Section 6 below discusses Aboriginal Consultation.

### **3 Environmental Assessment Process**

On September 6, 2011, EAO determined that the Swift Project was reviewable pursuant to the Reviewable Projects Regulation for the following reasons, and issued a legal Order under Section 10 of the Act:

- It would have a production capacity of greater than or equal to 250,000 tonnes per year of clean or raw coal, or a combination of clean and raw coal; and
- result in the disturbance of at least 750 hectares of land that was not previously permitted for disturbance.

Given changes to the *Canadian Environmental Assessment Act* in 2012, the Swift Project no longer required a federal EA.

On June 25, 2012, EAO issued a legal Order under Section 11 of the Act, which set out the scope, procedures and methods for the EA. EAO considered the potential environmental, economic, social, heritage and health effects, including cumulative effects, of the Swift Project under the *Environmental Assessment Act* (the Act).

EAO conducted this EA in consultation with an advisory Working Group made up of federal, provincial and local government representatives, with the mandates and skill sets relevant to the review of the Swift Project, as well as representatives from Ktunaxa Nation Council (KNC). Following a review and comment on the draft Application Information Requirements (AIR) by the Working Group and the public, on November 7, 2014, EAO issued the final AIR for the Swift Project. The AIR establishes the information that must be collected, analysed and presented by the Proponent in their Application for an EAC (Application).

The Application Review stage of the EA started on January 28, 2015, following a 57-day screening evaluation of the Application against the AIR by EAO and the Working Group (extended at the request of Teck to complete additional work with KNC). The Working Group, KNC, and public provided additional review and comment on the Application and supplementary material during the Application Review stage. The Working Group and KNC provided review and comment on documents and assessments that EAO prepared for Ministers.

EAO completed the EA of the Swift Project and referred the decision to Ministers on July 27, 2015.

#### **Other Required Authorizations**

The Swift Project would require various permits from federal, provincial and local government jurisdictions. The majority of provincial permits are provided through MEM, MOE, and the Ministry of Forests, Lands and Natural Resource Operations (FLNR). Teck applied for concurrent review of three major permits:

- amendment to the existing Permit Approving Work System and Reclamation Program issued pursuant to the BC *Mines Act* (Permit No. C-3);
- amendment to the existing effluent discharge permit issued pursuant to the BC Environmental Management Act (EMA) (Permit No. PE-00424) for discharge from the Project works; and
- creation of a new water licence which will supersede two existing Fording River Operations licences and replace one Greenhills Operations license, pursuant to the BC Water Act, for implementation of aspects of the Operational Water Management and Active Closure Drainage Plan.

Because the Swift Project would destroy and alter fish habitat, Teck will also require an authorization from Fisheries and Oceans Canada (DFO) to carry out a proposed work, undertaking, or activity that could cause serious harm to fish, under the subsection 35(2) of the *Fisheries Act*.

# 4 Strategic Context

Coal mining in the Elk Valley traces its industrial roots back to the late 1800s. Teck has been the owner-operator of the five Elk Valley coal mines since 2008.

#### Area Based Management Plan / Elk Valley Water Quality Plan

Steelmaking coal occurs as layers or seams within rock. The mountaintop-mining / valley fill method used in the Elk Valley extracts the coal along with large quantities of rock, and this waste rock is placed in massive piles (referred to as spoils) adjacent to, and to some extent in, mined-out pits. Rainwater and snowmelt flow through these piles and carry selenium and other substances, including cadmium and sulphate as well as nitrate from blasting residue, into the local watersheds. Geochemical study indicates waste rock piles continue to release selenium at steady rates for a very long period of time.

Water quality studies conducted since the 1990s have shown the Fording River and several of its tributaries have increasing levels of constituents such as selenium, nitrate, cadmium and sulphate, associated with decades of coal mining activity in the region, at concentrations of potential concern for aquatic and human health. In 2013, the Minister of Environment issued an Order to Teck to develop an area-based management plan (ABMP) to stabilize and reverse water quality concentrations of selenium and other contaminants in the Elk Valley watershed, including the Canadian portion of Lake Koocanusa. The Minister's Order required Teck to form a Technical Advisory Committee to provide science-based expert advice on the development of the

plan. The committee comprised representatives from the KNC, provincial and federal governments, United States and Montana State governments, an independent scientist and Teck.

The Minister of Environment approved the ABMP submitted by Teck, referred to as the Elk Valley Water Quality Plan (EVWQP) on November 18, 2014. The EVWQP is provincial policy that must be considered by statutory and delegated decision makers reviewing permits under the EMA.

The objectives of the EVWQP are the protection of aquatic ecosystem health, management of bioaccumulation of constituents in the receiving environment, protection of human health and protection of groundwater, while at the same time allowing for continued sustainable mining in the Elk Valley. To achieve this, the EVWQP proposes to manage water quality on a watershed-basis, with the use of clean water diversions and several active water treatment facilities (AWTF) as the primary mitigation and management approach. The EVWQP modelled water quality up until 2034, and included Teck's permitted and proposed mining activities in that period. The initial implementation plan and schedule includes the two water treatment plants at FRO: FRO South AWTF (2018) and the FRO North AWTF (first phase in 2022, second phase in 2030).

The EVWQP identified short, medium, and long-term water quality targets for selenium, nitrate, sulphate and cadmium (Order constituents) and targets to address calcite formation. The EVWQP also established water quality benchmarks (thresholds) for impacts to sensitive aquatic species.

EAO scoped the EA for Teck to consider the EVWQP, to avoid duplication of work that has already undergone a substantial science-based review. EAO accepted the EVWQP's watershed-based approach to managing water quality effects, and considers the EVWQP to be a cumulative effects assessment for surface water quality, aquatic ecosystem health, human health and groundwater quality. For the purposes of the EA, EAO relied on the approved EVWQP as part of the Application to:

- present baseline data;
- model the water quality predictions, and set water quality concentrations to protect aquatic health valued components;
- establish water quality targets and monitoring locations for the targets; and
- set out mitigation and adaptive management strategies that would be applied to the Swift Project.

EAO required Teck to assess water quality and aquatic health effects before and after the installation of the AWTFs because the Swift Project proposes to commence construction and coal production prior to the AWTFs at Fording River being fully operational.

### Valley Wide Permitting for implementation of the EVWQP

#### Environmental Management Act (EMA)

On November 19, 2014, MOE issued Elk Valley EMA Permit 107517 (EMA Valley Permit) under EMA. This permit supports the implementation of the EVWQP by authorizing and managing contaminants from current and historic mining activity in the Elk Valley. The EMA Valley Permit sets out performance objectives, compliance points, discharge limits, monitoring programs and timelines. The EMA Valley Permit also contains a number of requirements that MOE – in consultation with KNC – considered essential for the full and effective implementation of the EVWQP. Some of the key permit conditions applicable to Teck's operations in the Elk Valley include:

- regional aquatic effects monitoring program, to monitor and manage for biological effects on aquatic organisms;
- groundwater monitoring program, to protect groundwater quality;
- tributary evaluation and management programs, to evaluate the ecological value of tributaries including the potential for rehabilitation of aquatic and riparian habitat and potential for improvement of water quality conditions, and prioritize tributaries for ongoing protection and/or rehabilitation;
- human health risk assessment and ecological risk assessment;
- research and development program;
- Lake Koocanusa Monitoring and Research Working Group;
- adaptive management program; and
- an Environmental Monitoring Committee, with membership from MEM, MOE, Interior Health, KNC, an independent scientist and Teck. Environment Canada was invited as well and declined.

#### Mines Act

On November 19, 2014, MEM issued an amendment to the FRO permit C-3, with requirements to:

- execute the Initial Implementation Plan contained in the EVWQP;
- implement an adaptive management approach;
- construct all water diversions, seepage and other management works necessary to meet the EVWQP;
- periodically update the water quality model, and assess conservatism and uncertainty;
- conduct and report on a comprehensive research and development program; and
- implement, report on and adaptively manage calcite formation.

These two permits would be amended, if necessary, to include the components and activities of the Swift Project. In the EA, EAO relied on the additional requirements of the EMA Valley Permit that augmented those in the EVWQP, including the human health risk assessment, tributary evaluation and management, and groundwater monitoring.

#### **Coordinated Approach to Southeast Coal Permitting**

In recognition of the high ecological and social values, the importance of economic development in the Elk Valley, and the high volume of permits applications that Teck would require for current and potential future operations, BC and Teck established the Southeast Coal Permitting Program in spring 2014. BC also established a Southeast Coal Project Executive Board to provide guidance and oversight to ensure that the EAs and permitting, as well as activities related to the Elk Valley ABMP, are conducted in a timely and high quality manner that meets established deadlines.

The Swift Project is the second of four major mine expansions proposed by Teck that require an EA. Line Creek Operations Phase II received a conditional EAC in September 2013, and both Elk View Operations (Baldy Ridge Extension) and Coal Mountain Operations (Phase II) have proposed projects in the Pre-Application EA phase with applications potentially being submitted to EAO in late 2015 and early 2016, respectively.

#### **Cumulative Effects Management Framework**

FLNR oversees the Elk Valley Cumulative Effects Management Framework (CEMF), an initiative that grew out of an inaugural 2012 workshop attended by a broad cross-section of interested parties from government, Teck, KNC, and non-government organizations. Coordination and management of the CEMF transitioned to FLNR in late 2014. The overall purpose of the CEMF is to provide a practical, workable framework that supports decisions related to assessment, mitigation and management of cumulative effects in the Elk Valley. The CEMF's goals are to provide consistent data on which to base permitting and authorization decisions in the Elk Valley, and conduct a collaborative, consensus-based and transparent process. The working group currently includes provincial natural resource ministries, two forestry companies, Teck and another coal mining company, the Elk River Alliance (non-governmental organization), and the District of Sparwood. EAO and Teck both have provided funding to the CEMF for technical and logistical support, as well as expert professional services.

The initial set of priority valued components for the CEMF includes grizzly bears, westslope cutthroat trout (WCT), riparian habitat, bighorn sheep, and mature/old growth forest. These values are also evaluated in the Swift Project EA, and Teck may share information gathered from the EA with the CEMF working group. Because the CEMF is in early stages of information collection and analysis, however its work is not yet positioned to inform the development of the Swift Project Application.

### 5 Key Conclusions of the Environmental Assessment

EAs in BC use valued components as an organizing framework for the assessment of the potential effects for proposed Projects. Valued components are components of the natural and human environment that are considered by the proponent, public, Aboriginal groups, scientists and other technical specialists, and government agencies involved in

the assessment process to have scientific, ecological, economic, social, cultural, archaeological, historical or other importance. To ensure effective use of resources and appropriately focus on the potential for significant adverse effects, EAO selects valued components that evaluate the project-environment interactions of the greatest importance and consequence.

EAO assessed the potential for the Swift Project to have significant adverse effects on over 40 valued components referenced in Table 1. These assessments were based on the Application provided by Teck, comments from the Working Group, KNC, and the public. Detailed analyses and rationale for conclusions on these components are located in EAO's Technical Report chapters.

Valued Component/Discipline	Technical Chapter	Valued Component/Discipline	Technical Chapter
<ul> <li>Environmental Effects</li> <li>groundwater quantity and quality</li> <li>surface water quality and quantity</li> <li>aquatic health</li> </ul>	1 Water quality and aquatic health	<ul> <li>Economic Effects</li> <li>employment and income</li> <li>government revenues</li> <li>business development</li> <li>commercial/industrial land use and tenure</li> </ul>	5 Socio- community and economy
<ul> <li>fish and fish habitat</li> </ul>	2 Fish and fish habitat	<ul> <li>Social Effects</li> <li>housing, services and infrastructure</li> <li>community well-being</li> <li>public safety</li> <li>public recreation and tourism</li> </ul>	5 Socio- community and economy
<ul> <li>soils and terrain</li> <li>vegetation</li> <li>wildlife and wildlife habitat (multiple species)</li> <li>biodiversity</li> </ul>	3 Terrestrial resources	<ul> <li>Health Effects</li> <li>risks to human and terrestrial wildlife health</li> </ul>	6 Health risk assessment
<ul><li>air quality</li><li>greenhouse gases</li><li>noise</li></ul>	4 Air quality and acoustics	<ul> <li>Heritage Effects</li> <li>archaeological sites</li> </ul>	7 Heritage

#### Table 1: Valued Component Disciplines for the Swift Project

The remainder of this section provides a summary of the key issues and concerns that were the focus of the EA. A detailed discussion of the valued component assessments can be found in the technical report chapters noted in the table above.

As the Swift Project is an expansion of an existing operation with minimal projected changes to the labour force and procurement practices, and taking into account the

comprehensive permitting regime for mining, EAO concluded that there would be no significant adverse effects (and minimal overall effects) to socio-economic, health and heritage valued components. The biophysical aspects of the Swift Project's potential impacts were the dominant focus of the EA. The discussion below is focused on the three significant issues in the EA:

- ability of the Swift Project to meet water quality targets and adequately mitigate effects to the aquatic environment, before and after implementation of the EVWQP;
- potential cumulative effects to the genetically unique WCT population in the upper Fording River due to habitat loss and water quality effects; and
- cumulative effects to ecosystems and species already facing pressures of diminished habitat, such as wetlands, riparian areas and mature/old growth forest.

#### Water Quality and Aquatic Health

The EA considered the Swift Project's impacts on water quality and the potential related impacts on aquatic health. The assessment took into account the interaction of changes to groundwater flow and quality, surface water flow and quality, geochemistry and chemical loadings, and aquatic health as measured by representative sensitive species of invertebrates, amphibians, water birds and fish.

The Swift Project mine will produce up to 170 million tonnes of coal and generate approximately 1.5 billion bank cubic metres<sup>1</sup> of waste rock that will be placed in large dumps (spoils) around the pit excavations. Approximately 25 percent of the waste rock will be backfilled into the pits. The spoils will be placed over top of a number of small tributary streams and a small lake. Ditches and diversion channels are required to prevent clean water from contacting mine-exposed areas and capture contact (mine-affected) run-off and route it to the AWTFs. The pit excavation at its deepest point will be approximately 300 metres lower than the elevation of the Fording River.

The EA considered the Swift Project's effects, and the mitigations provided by the implementation of the EVWQP, which requires two AWTFs at FRO, the first operating by 2018 and the second by 2022 (with a second phase in 2030). As the EVWQP is a watershed-based mitigation strategy, the Application does not propose project-specific measures to mitigate for the Order constituents in advance of EVWQP implementation. The EA examined predicted water quality and aquatic health effects from the Order constituents (selenium, nitrate, cadmium and sulphate) before and after the AWTFs, in order to compare and understand the direct effects of the Swift Project in the upper Fording River and local study area on aquatic life. Additionally, the EA considered the direct and cumulative effects from other water quality constituents (that were not included in the EVWQP) over the full life of the Swift Project.

<sup>&</sup>lt;sup>1</sup> A bank cubic metre refers to undisturbed or pre-drilled soils/rock in the ground.

#### Water quality

At present, concentrations of Order constituents in the upper Fording River exceed the short-term targets set in the EVWQP. Prior to implementation of the EVWQP, selenium, nitrate, cadmium and sulphate will continue to increase in the Fording River. Modelling indicated that these constituents would increase even without the Swift Project, and that the Swift Project activities (primarily additional waste rock) would incrementally contribute further loadings by 2017. The FRO South AWTF<sup>2</sup>, once operational in 2018, will stabilize and temporarily decrease the levels of selenium and nitrate, but the levels would begin to rise again until 2022, when the operation of the FRO North AWTF is predicted to bring the levels in the upper Fording River below the long-term targets in the EVWQP. The Application predicts that the Swift Project, in combination with current developments in the upper Fording River, will achieve the EVWQP long-term targets for selenium and nitrate by 2022. Predicted concentrations of sulphate continue to increase throughout the life of the Swift Project and into the future.

Phosphorus, dissolved organic carbon and chromium are also predicted to increase as a result of the Swift Project, by approximately 10 to 30 percent over the base case. These effects would decrease at the end of Swift Project operations, although would still be slightly elevated over pre-Project conditions.

During the EA, hydrology and hydrogeological technical leads from MOE and FLNR highlighted uncertainties related to Teck's understanding of the groundwater/surface water connection with the Fording River. Reviewers noted that there is a high degree of subsurface connectivity and the connectivity varies spatially along the Fording River and, therefore, the potential for mine-affected groundwater from underneath waste spoils or tailings ponds to reach surface water without treatment and thereby adversely affect water quality in the Fording River. The provincial technical leads indicated the groundwater model could be over-estimating how much water is in the Fording River during the winter months and, if that were the case, the predicted water quality concentrations may be underestimated (i.e. worse) during the winter. During the EA, agencies recommended a series of follow-up actions and adaptive management. EAO worked with the agencies to understand the appropriate paths forward for addressing uncertainties, and determined that the issues could be addressed through detailed monitoring at the permitting phase under the EMA.

#### Aquatic health

The EA required an understanding of the Swift Project's effects on the resilience and viability of aquatic organisms. For the purposes of assessing impacts to aquatic health, the EA focused on effects that could occur during the period of time that the Swift Project would begin contributing additional contaminants of concern. For the Order constituents (selenium, nitrate, cadmium and sulphate), the EA evaluated the interim period prior to the EVWQP implementation at FRO, and the change in effects after the

<sup>&</sup>lt;sup>2</sup> The Active Water Treatment Facilities in the EVWQP propose to use biological treatment technologies, which rely on microorganisms that convert selenium to a particulate form that can be removed through settling. The EVWQP describes the research and development programs, and technology selection process, for the AWTFs.

AWTFs are operational, in order to compare and assess the localized effects. For other water quality constituents, the EA examined the effects into post-closure.

The Order constituents were assessed for ecological (e.g. community structure and composition) or toxicological (e.g. reproduction and growth) effects to aquatic organisms. At elevated concentrations, selenium can bio-accumulate in organism's tissues and become detrimental to reproductive processes in aquatic invertebrates, fish, birds, amphibians and other egg-laying vertebrates. Cadmium from waste rock piles and nitrates from blasting residues can both be harmful to organisms through direct contact with surface water. Nitrate combined with phosphorus is also known to contribute to excessive nutrients in water bodies that can overstimulate plant growth and cause algal blooms. Sulphate is released by the oxidation of sulphide minerals in waste rock. Direct contact with elevated concentrations of sulphate can be harmful to the development of sensitive aquatic organisms. Calcite, commonly from run-off from waste rock piles, can have the effect of cementing streambed substrates together, thereby adversely altering aquatic habitat for fish and invertebrates.

Of the Order constituents, the EA focused on effects from selenium, nitrate and sulphate. As measured at the FRO property boundary, concentrations of selenium and nitrate are currently at levels where some sensitive species may already be experiencing decreased reproduction and development. Concentrations are predicted to continue rising over the next three years and the commencement of Swift Project operations would incrementally add loadings to the aquatic environment. The water quality effects would not decrease until the AWTFs are operational in 2018 and 2022. Sulphate is currently elevated and will continue to rise over the course of Swift Project operations.

Elevated selenium could result in decreased growth in the most sensitive species of benthic invertebrates (such as mayflies) and nitrate concentrations in the interim period could decrease the reproduction rates of the most sensitive species of benthic invertebrates. The current situation and the additional contributions of the Swift Project could cause localized alterations to the invertebrate community structure at some locations in the upper Fording River. The Application does not predict that this would reduce the overall invertebrate populations as a food source to water birds and fish in the area. The Application predicted the magnitude of effects would decrease from low-to-moderate in the interim period to negligible once the AWTFs are operational. Downstream in the Elk River and Lake Koocanusa, the magnitude of effects to benthic invertebrates from selenium and nitrate decreases to negligible.

Elevated selenium in the interim period could potentially contribute to a 10 to 20 percent decrease in reproduction rates and growth of juvenile WCT, and nitrate concentrations could also have the effect of restricting WCT early life stage development by 10 to 20 percent, with localized concentrations at FRO being most elevated during 2015 to 2017. In 2022, with the operation of the FRO North AWTF, the selenium concentrations in the Swift Project area and the upper Fording River are predicted to fall below levels where effects to WCT reproduction and survival would occur. The Swift

Project could result in elevated sulphate levels at some locations in the upper Fording, increasing over the course of Swift Project operations and potentially contributing to low-level restrictions on early life stage development on WCT.

Increased levels of sulphate also have the potential to restrict early life stage growth for some amphibians, although not at levels that are predicted to affect amphibian populations. The Application and EVWQP predicted that levels of water quality constituents would not have effects on water birds.

Past and currently permitted activities in the upper Fording River are, as was demonstrated in the Application, contributing to elevated and increasing levels of Order constituents, even without the addition of the Swift Project. MOE has required aquatic effects monitoring for a number of years, and the EMA Valley Permit ordered extensive monitoring, additional toxicity studies, reporting and adaptive management. Recognizing the breadth of the permit requirements, EAO and MOE worked closely together during the EA to define the nature of any information gaps in the Application, also taking into account KNC concerns about possible aquatic impacts.

The EA concluded that there could be low-to-moderate effects on growth and development of sensitive invertebrate species and WCT in the upper Fording, based on conservative water quality predictions, until the EVWQP is implemented. These effects are not expected to affect the sustainability of the population. EAO acknowledges there is uncertainty associated with the magnitude of effects and that monitoring is necessary. During the course of the EA, MOE determined that any residual uncertainties they had with the baseline data and modelling of aquatic effects could be addressed through existing and new conditions in the EMA Valley Permit. MOE has indicated that they are considering the requirements for a local aquatic effects monitoring plan and supplemental baseline data to support detailed effects monitoring, as part of subsequent permitting. KNC also proposed a number of baseline and monitoring conditions, for consideration at the permitting phase. EAO agrees that detailed monitoring and adaptive management can be addressed during subsequent EMA permitting.

The Application, and EAO's analysis of residual effects to water quality and aquatic health, assumed the successful construction and operation of the AWTFs at FRO, and the implementation of Phase Two (expanded capacity) of the Fording River North AWTF by 2030. This latter plant is not currently required by the Elk Valley EMA Permit. EAO, therefore, proposes a condition that Teck must construct and operate the FRO North Phase Two AWTF, as described in the initial implementation plan in the approved EVWQP. EAO anticipates MEM and MOE will also require construction of this facility and may impose detailed permitting conditions.

Considering the analysis summarized in Technical Report Chapter #1 Water Quality and Aquatic Health, and having regard to the proposed conditions (which would become legally binding as a condition of the EAC), the implementation of the active water treatment facilities, as well as conditions of the EMA Valley Permit and the *Mines Act* permit, EAO is satisfied that the Swift Project would not have significant adverse effects on water quality and aquatic health.

### **Fish and Fish Habitat**

The Upper Fording River is home to an isolated and genetically distinct population of WCT, which is also a species of concern federally and provincially. A 20-metre waterfall impedes upstream fish migration, and WCT is the only fish species found in the Upper Fording River. To develop the Swift Project, Teck would remove or permanently alter fish habitat in eight streams and a small mountain lake, by covering them in waste rock, excavating the Swift pit, construction of the AWTF and the rerouting of stream flow to the AWTF. The streams impacted by the Swift Project have all been affected by previous mining activity in the project area in the 1980s and 1990s, and certain watercourses are impassible to fish because of natural (waterfall) or human-made (e.g. culverts) barriers. The Application considered the loss of these streams and lake as causing potentially serious harm to fish and therefore Teck has proposed habitat offsetting as the primary mitigation.

During the EA, Teck, FLNR, KNC and the Southeast Coal Permitting Program, with some participation from DFO and EAO, continued to engage through the Elk Valley Fish and Fish Habitat Committee (EVFFHC). The purpose of the EVFFHC is to share technical information and provide input on Teck's existing and future fisheries obligations, including *Fisheries Act* authorizations, EAC conditions, habitat banking proposals and any additional fisheries obligations that may arise. The EVFFHC strives to be a consensus-based forum to select priority fish and fish habitat offset proposals that are supportive of FLNR and Ktunaxa management direction and are consistent with DFO policy.

During EA, a key area of concern for FLNR and KNC was whether Teck was adequately estimating the impacts to fish habitat, and whether an adequate amount of potentially viable habitat could be identified to offset the lost habitat in the upper Fording. Teck used a habitat suitability index modelling approach as an accounting tool to predict habitat losses and gains. FLNR and KNC were concerned about the accuracy and applicability of this model to the upper Fording River environment, and so the Application also calculated losses and gains using two additional approaches for comparative purposes. FLNR, DFO and KNC were not able to reach agreement with Teck on preferred off-setting options for the Swift Project, and there is no conceptual plan currently in place.

EAO acknowledges that the primary mitigation measure associated with impacts to fish and fish habitat is the general requirement to offset any serious harm to fish, as per subsection 35(2) of the *Fisheries Act*, and the detailed information required to support such a determination and/or application. EAO notes that the Swift Project cannot proceed without approval from DFO under subsection 35(2) of the *Fisheries Act*. Therefore, to reach mutually-acceptable resolution on the offsetting requirements and designs for the Swift Project, EAO proposes a condition that Teck develop a fish habitat offsetting plan in consultation with the EVFFHC, and consistent with the objectives of the Regional Fish Habitat Management Plan<sup>3</sup>, and to the satisfaction of DFO in accordance with the *Fisheries Act*.

FLNR and KNC continue to be concerned about the validity of the tools used to calculate impacts to fish habitat. FLNR advises that deficiencies in the habitat suitability and habitat assessment models will be addressed through the EVFFHC.

During the EA, FLNR and KNC also raised concerns about the cumulative effects of lost and impaired habitat in the upper Fording River, as the impacts of past mining have removed or altered several tributaries that may have historically been highly productive to the WCT population. Data from some historical studies suggests that the WCT population may have been more abundant in the 1990s than at present, although it is not certain how the loss of tributaries or effects of water quality may have influenced population abundance.

There are several initiatives currently in progress to study the WCT population, including a Teck-KNC pre-development study, and the provincial Cumulative Effects Management Framework which includes WCT. EAO also notes that the EMA Valley Permit has a condition requiring the evaluation of all tributaries currently or potentially affected by Teck's operations and the development of a plan to protect and rehabilitate tributaries that could provide high-value habitat. However, EAO notes that the tributary evaluation is in the very early stages and will not be complete until August 2016, and the management program will not be implemented until March 2017. As streams would be diverted to the AWTFs in order to satisfy the water quality objectives of the EVWQP, the Swift Project would result in the loss of streams prior to a completed assessment of the ecological value of those streams. EAO recommends that Teck and MOE consult with FLNR fisheries biologists during the development of the tributary evaluation and management programs.

In recognition that there are uncertainties related to the population resilience of WCT in the upper Fording River, related to habitat loss and potential water quality effects, EAO proposes a condition that Teck work with the EVFFHC in 2016 to develop a plan address the recommendations of the WCT Population Study (which will be completed at the end of 2015). The plan must be implemented to the satisfaction of EAO and FLNR.

Considering the analysis summarized above and discussed in Technical Report Chapter #2 Fish and Fish Habitat, the proposed conditions (which would become legally binding as a condition of the EAC), requirements of the EMA Valley Permit, and the requirement for offsetting and authorization under the *Fisheries Act* prior to project development, EAO is satisfied that the Swift Project would not have significant adverse effects on fish and fish habitat.

<sup>&</sup>lt;sup>3</sup> The Regional Fish Habitat Management Plan is a requirement of the Line Creek Operations Phase II EA Certificate. The plan's purpose is to develop consistent accepted methods to fish habitat assessments, standardize mitigation measures, and develop a regional strategy for habitat offsetting, and conduct studies based on fisheries management objectives.

#### Vegetation, Wildlife and Biodiversity

Over its long history in the area, mining has caused permanent landscape alteration over large areas in the Elk Valley, affecting topography, soils, natural water flows, ecosystem functioning and habitat for a variety of vegetation and wildlife species. Teck has implemented some reclamation activities in areas where mining has ceased at their various Elk Valley operations including FRO.

The Swift Project's proposed operating area is 3,200 hectares, of which 1,800 is permitted for mining and has been extensively disturbed, and 1,400 is new area although some of it has also been affected by roads, gas exploration and timber harvesting. The EA considered the Swift Project's potential to have significant adverse effects on a number of individual plants and animal species, as well as impacts to ecosystems that are considered important from a biodiversity management perspective.

Mine development would remove sections of mature/old forest, wetland areas and alpine stream riparian areas that provide habitat and ecosystem services for a number of species. Mid-elevation wetlands and tributary riparian areas such as those found in the Swift Project footprint are relatively uncommon and valued ecosystems in the upper Fording River watershed. Within the Swift Project area and the surrounding local study area, there are patches of mature and old growth forest, and habitat (potential and also verified) for provincially and federally listed plant and animal species of concern.

The Application indicates the Swift Project footprint was minimized to the extent possible to reduce effects. Overall, the Swift Project relies extensively on progressive reclamation to mitigate for impacts to wildlife habitat and vegetation. The Application included a Reclamation and Closure Plan outlining the conceptual framework for reclamation and end land uses. Teck indicates that reclamation planning and practices will be conducted with the goal of establishing a variety of self-sustaining functional ecosystems similar to those that were present prior to mine disturbance, by putting mine sites on a trajectory towards ecosystems similar to pre-existing conditions. Reclamation planning will be informed by the results of a Pre-Development Study (a condition of the Line Creek Operations Phase II EAC to describe and where possible quantify changes to the Elk Valley in the period 1880 to 2010).

The Swift Project would result in the losses of 62 hectares of old growth forest, 73 hectares alpine tributary riparian ecosystems, and 53 hectares of wetlands within the mine footprint. This represents losses of five to seven percent of each of these ecosystems in the local study area. The Swift Project would also result in the loss of 443 hectares of mature forest wildlife habitat, or about five percent of the local study area. Although the Application does not predict that the resilience of these ecosystems would be severely affected, these ecosystems nevertheless provide habitat for vegetation and wildlife species that are provincially and/or federally listed, including grizzly bear, badgers, small mammals, birds and rare plants, and species of cultural importance to Ktunaxa. In addition, forestry activities will remove additional wildlife habitat in the local and regional study areas. Reclamation processes would begin during mining and continue in the closure phase. Mature and old forests that provide habitat and ecosystem services for a wide range of species would not be regenerated for decades to centuries. Long term effects of fire suppression practices, mountain pine beetle and climate change introduce further uncertainty about the resiliency of some species in the regional study area. The EA therefore considered that the Swift Project's direct effects to wildlife, vegetation and biodiversity (ecosystems) valued components, although not large in area, would have a measurable and long-term effect at a local to regional scale. For some components, such as wetlands and old growth forests, losses in the Swift Project area are considered permanent as reclamation would not reproduce similar complex ecosystems within a meaningful period of time, if at all. However, population-level adverse effects to those valued components are not anticipated.

The EA assessed the terrestrial valued components taking into account cumulative effects from past development and projected future development, and considers the impacts to these values to be moderate and long-term. For the blue-listed/endangered whitebark pine, cumulative effects due largely to climate-change related effects could seriously affect the population of this species in the region.

The Application used a combination of habitat modelling with some fieldwork to assess the potential effects on valued components. As with any modelling, there is some uncertainty about its accuracy. Teck stated they used conservative parameters for modelling, which has the effect of potentially over-estimating some habitat potential and may not always provide the level of detailed information needed to establish future monitoring and mitigation. Accordingly, EAO proposes a condition that requires the updating and implementation of a series of management plans for vegetation, wildlife and biodiversity elements that contain site-specific information on the effects and monitoring programs as well as an adaptive management plan for adverse effects. These management plans, listed in the Table of Conditions, must be prepared by a qualified professional and Teck must consult with relevant regulatory authorities and KNC during their development.

The direct and cumulative effects to wildlife habitat, vegetation and ecosystems underscores the importance of regional planning efforts currently underway to monitor and manage effects, as well as Teck's own corporate biodiversity management planning initiatives. The EA considered that a wide range of tools are currently in development or available to manage impacts of mining on vegetation, wildlife and ecosystem values. Coordination amongst these initiatives remains a challenge and potential barrier, and also an opportunity, for achieving the best possible outcomes related to cumulative effects management in the Elk Valley. EAO acknowledges that monitoring and management tools are not complete and therefore there is some uncertainty regarding their exact outcomes; however, EAO also notes that these initiatives currently have a high level of participation, commitment and work-planning effort on the part of FLNR, KNC and Teck.

Teck has initiated a corporate Biodiversity Management Plan, to identify risks to biodiversity from Teck's operations. This Plan was also condition of the Line Creek

Operations Phase II EAC. The Biodiversity Management Plan applies a hierarchy of avoiding, minimizing, rehabilitating and offsetting residual effects to biodiversity, and the Plan extends beyond the effects of the Swift Project and considers effects caused by each of Teck's operations in the Elk Valley relative to a pre-mining condition.

Because of the importance of the Biodiversity Management Plan in driving site-specific mine reclamation planning and potential off-setting measures, EAO proposes a condition that Teck create a Technical Advisory Group to provide scientific, technical and Aboriginal cultural input on biodiversity mitigation strategies and actions. In order to also address Swift Project-specific effects, EAO also proposes that Teck develop a FRO Biodiversity Management Plan and demonstrate how they are considering BC's Environmental Mitigation Policy and how Teck is engaging with the provincially-led Elk Valley CEMF, as these initiatives must be well-integrated in order to be successful. EAO also proposes a condition that Teck update and implement a FRO Reclamation and Closure Plan, following requirements established by MEM as well as EAO's management plan requirements in order to ensure that effects identified during the EA are monitored and adaptively managed. The Biodiversity Management Plan and Reclamation and Closure Plan will incorporate Ktunaxa Traditional Knowledge.

Considering the analysis summarized above and discussed in Technical Chapter #3 Terrestrial Environment, the proposed conditions related to reclamation, biodiversity management and wildlife impacts (which would become legally binding as a condition of the EAC), and having regard to Teck's participation in the BC-led regional Cumulative Effects Management Framework, EAO is satisfied that the Swift Project would not have significant adverse effects on vegetation, wildlife and wildlife habitat, and biodiversity.

#### **Other Identified Effects and Proposed Conditions**

The Application assesses the impacts of the Swift Project on various other valued components, identifies key mitigation measures for each and reaches conclusions on their residual effects, none of which are determined to be significant. The Technical Report chapters discussed EAO's views regarding effects, mitigations and rationale for conditions, and the Table of Conditions includes the comprehensive list of proposed conditions on the Swift Project.

Wherever possible, EAO has coordinated the management and monitoring of effects with the relevant permitting agencies and existing regional initiatives, with the goal of building upon, reinforcing and further enabling coordination in the Elk Valley to manage the impacts resulting from the Swift Project.

# 6 Aboriginal Consultation

EAO examined potential impacts of the Swift Project on asserted Aboriginal rights and title (Aboriginal Interests). The Swift Project lies within the asserted territories of the Ktunaxa and the Shuswap Indian Band. The Shuswap Indian Band did not respond to

EAO's notification letters regarding their level of interest in the Swift Project. KNC actively participated throughout the EA.

The Swift Project overlaps the eastern part of Ktunaxa's asserted traditional territory, in the Ktunaxa traditional land district of qukin?amak?is (Raven's Land), which encompasses all of Teck's mining operations in the Elk Valley. This area has been more affected by coal mining more than any other part of Ktunaxa traditional territory. Ktunaxa has a deep relationship with the natural environment, and an over-arching philosophy of interconnectedness. Central to this idea is that Ktunaxa feel they must respect and care for ?a'kxamis qapi qapsin (all living things). Ktunaxa oral history is intimately linked to places and resources in their traditional territory.

Ethnohistoric information and the Application indicate that the Ktunaxa Nation historically used the Fording River Operations area for travelling, hunting, fishing and camping at the time of European contact. This information supports a strong *prima facie* claim of Aboriginal rights for resource harvesting activities in the Swift Project area. EAO is prepared to assume that there is some prima facie claim to Aboriginal title to the Swift Project area. EAO has approached consultation with the Ktunaxa at the deeper end of the Haida consultation spectrum.

Ktunaxa Nation Council (KNC) is the governing body of the Ktunaxa Nation, composed of elected members of each of the BC communities. As part of the consultation process EAO provided KNC with capacity funding to support their participation in the EA. KNC actively contributed throughout the EA and appointed technical representatives to EAO's advisory Working Group and sub-committees. KNC provided comment on key EA documents, procedural and timing aspects, and met directly with EAO to discuss issues and concerns.

EAO also assigned procedural aspects of consultation with KNC to Teck. Teck and KNC are parties to a Working Protocol Agreement that established a broad, non-project-specific framework for ongoing meaningful engagement between the parties. Teck provides capacity funding to support KNC engagement on major projects and initiatives, including those that require EAs. Teck and KNC took a collaborative and innovative approach to the development of the section of the Application that discusses Aboriginal Interests, by co-authoring sections that present Ktunaxa perspectives on the impacts of the Swift Project and by jointly developing a series of mitigations and accommodations to address effects on Ktunaxa citizens in the Elk Valley.

Some of the key concerns identified over the course of the EA by KNC related to the impacts on water as a cultural value, the loss of fish habitat (particularly tributaries), impacts to wetlands, riparian ecosystems and old growth forests in the Elk Valley. KNC report that while some members of the Ktunaxa continue to exercise Aboriginal rights in the upper Fording, there has been a decline in familiarity and use of this area as a result of the cumulative effects of industrial development, impaired access, concerns about the quality of water and impacts of airborne contaminants on food sources and a general sense of alienation from this area. The Swift Project would extend the timeframe for these impacts. KNC expressed to EAO their concerns about adverse

cumulative effects in the Elk Valley, and shared their perspective that industrial development including mining has already resulted in significant effects on Ktunaxa Aboriginal Interests.

EAO acknowledges there could be some potential impacts from the Swift Project to wildlife, vegetation, fish or aquatic resources and values of importance to Ktunaxa, and has heard the concerns raised by KNC regarding past and potential cumulative effects on resources used for hunting, fishing, gathering and cultural practices, as well as potential for negative effects on traditional knowledge and language. Reclamation practices may address some of the concerns although EAO does not expect the postmining ecosystems, once functional, will be naturally or culturally equivalent to the conditions prior to Swift Project development, and the reclamation processes will take many generations. Off-setting measures, developed through the Biodiversity Management Plan, may also provide protection for areas and species of cultural importance.

During the EA, EAO has incorporated and responded to Ktunaxa input on mitigations and conditions related to water quality (also considering the EVWQP), terrestrial resources, and biodiversity management planning, as well as in relation to health, traditional knowledge, language, economic and social effects. Based on EAO's understanding of Ktunaxa historical and current use of the area, and the values that are affected by the Swift Project, EAO expects that there could be impacts to Ktunaxa's Aboriginal Interests to gather, hunt and fish. EAO is of the view that the various mitigation measures (e.g. proposed EAC conditions, measures described in the Application, relevant conditions in other EACs, and proposed conditions of any permit to be issued under the EMA) will adequately address the adverse effects to Ktunaxa Aboriginal Interests and concerns.

In addition to any conditions of an EAC, EAO understands that there are relevant regional initiatives and regulatory measures in which KNC participates such as the CEMF, Teck's Biodiversity Management Plan, the EVWQP and Environmental Monitoring Committee, and the Regional Fish Habitat Management Plan. For all the management plans required by the EAC, EAO's proposed conditions include a requirement that Teck consult with KNC on the development of the plans, and demonstrate how Ktunaxa Aboriginal Interests have been considered in plan development and implementation.

EAO has ensured that Ktunaxa has been meaningfully consulted and accommodated on the potential effects of the Swift Project. EAO's Ktunaxa Consultation Report provides further analysis related to these conclusions.

The EA also considered potential social and economic effects to Ktunaxa Nation, including potential neutral or positive effects. Proposed accommodations currently being discussed between Teck and KNC are discussed in Section 10 *Additional Considerations* below.

# 7 Public Consultation

Public consultation requirements are intended to provide multiple, meaningful opportunities for the public to provide input. Teck was required to prepare a Public Consultation Plan early in the EA that laid out Teck's consultation objectives and activities. Through the course of the EA, Teck submitted public consultation reports to the EAO describing the progress in implementing its Public Consultation Plan.

EAO hosted the following two public comment periods and four open houses during the EA:

- The 30-day public comment period on the draft AIR was held from September 19 to October 19, 2012, and eight public comments were submitted. EAO held a public open house in Elkford and approximately 30 people attended.
- The 45-day public comment period on Teck's Application was held from February 20 to April 6, 2015, and two public comments were submitted. EAO held a public open house again in Elkford, and approximately 20 people attended.

In the past four years, Teck and/or EAO have held a number of open houses and public comment periods in the region, seeking input on mine expansion proposals and also on the development of the EVWQP. Teck also coordinates a Communities of Interest Advisory Initiative, composed of representative from the community who meet twice a year to discuss issues and initiatives of interest to local residents and stakeholder groups. Low number of participants in the Swift Project's comment periods may be related to the extent of opportunities advertised to local residents and stakeholders.

The primary issue raised by the public during the open houses and through the submitted public comment period was about recreational access to areas located near or within the Swift Project's operational boundaries.

Teck provided responses to all public comments. Teck has adjusted their public access management plan to maintain access to areas used for recreation and trapping, while also maintaining public safety requirements. EAO summarized issues affecting public recreation in the Technical Report Chapter #5 on socio-community and economic impacts. Overall, EAO considers the responses to issues raised by the public adequate.

# 8 Local Government Consultation

The Regional District of East Kootenay and the Districts of Elkford and Sparwood were invited to participate on the EAO Working Group. These jurisdictions assigned representatives to the Working Group, and largely participated as observers. The local governments did not raise any concerns regarding the Application or EAO-generated decision documents.

EAO is aware that local communities currently experience some pressure with housing availability, infrastructure and service provision. The Application proposed a number of

activities that Teck would undertake to provide benefit to local communities and residents, and minimize adverse effects. EAO proposes a condition that requires Teck to prepare and implement the measures, as described in the Application, to manage socio-community and economic effects.

# 9 Federal Government Perspectives

When the provincial EA began in 2011, the Swift Project was also subject to a screening-level review by Canada. When the *Canadian Environmental Assessment Act*, 2012 came into force, the Swift Project no longer met the requirements for a federal EA.

Notwithstanding the lack of a federal EA requirement, Health Canada, Environment Canada, and DFO provided periodic and/or site-specific information and comment to EAO relevant to their regulatory and statutory responsibilities regarding species at risk, water quality, human health, and fish habitat offsetting.

On March 11, 2015, Environment Canada wrote to Teck advising them that the Swift Project, which proposes to dump waste rock in Lake Mountain Lake and Creek, appears to be in contravention of Section 36(3) of the *Fisheries Act*, which prohibits depositing deleterious substances in waters frequented by fish. DFO has advised that any deposition of a deleterious substance in waters frequented by fish is not eligible to be authorized under Section 35(2) of the *Fisheries Act*. Teck responded to Environment Canada acknowledging the requirement and describing the series of Teck initiatives and permits to manage the release of selenium. EAO expects that Teck will continue to consult with Environment Canada and DFO on the requirements of the *Fisheries Act*. EAO understands that authorization(s) under the *Fisheries Act* are required in order for the Swift Project to proceed.

### **10 United States and Montana Consultation**

EAO invited representatives from the United States Federal government and Montana State government to participate in the EA, in accordance with the *Memorandum of Understanding and Cooperation on Environmental Protection, Climate Action and Energy* between the Province of BC and the State of Montana. The United States Environmental Protection Agency (US EPA), the Montana Department of Environmental Quality, and Montana Fish and Wildlife participated on a limited basis in the early Pre-Application phase, offering technical comments on the Application Information Requirements related to the cumulative effects of the Swift Project on Lake Koocanusa, a transboundary reservoir. When the Minister of Environmental Quality participated on the Technical Advisory Committee. The US EPA also continues to engage in the Lake Koocanusa Monitoring and Research Working Group and the Lake Koocanusa Burbot baseline study. The US and Montana agencies did not participate in the Application Review phase of the Swift Project EA.

### **11 Additional Considerations**

Ministers may consider other matters that they consider relevant to the public interest in making their decision on whether to grant an EAC to Teck. The following information regarding the potential economic benefits of the Swift Project were presented in Teck's Application.

#### **Economic Benefits**

The Application estimates an initial construction cost of \$88.5 million, ninety percent of that in BC. Teck estimates the operating cost for the Swift Project to be approximately \$16.9 billion, with an annual operating expenditure of \$629 million (excluding wages, salaries and benefits for employees). The Swift Project expects to maintain the approximately 1000 full-time-equivalent employees at the FRO, and an additional 300 to 500 during constructions including the active water treatment facilities. Economic models indicate that FRO creates an equal or greater number of direct and indirect jobs with supplier industries.

Teck estimates the Swift Project, including the construction and operations of the two active water treatment facilities at FRO, will generate about \$40 million per year in direct revenues (largely taxes generated through wages, salaries and spending by employees, suppliers and contractors) to federal, provincial and municipal governments. Teck also estimates that the Swift Project could directly contribute \$33 million per year to the provincial government in income and mining taxes, and \$19.5 million in federal taxes; these amounts are based on operating profits and vary from year to year.

#### **Potential Benefits to Affected Aboriginal Communities**

BC and the KNC entered into an Economic and Community Development Agreement (ECDA) in 2010, which provides a framework for sharing revenues derived from the expansion of existing coal mines and the development of new coal mines in the Elk Valley. If the Swift Project proceeds, KNC may agree that the Swift Project should be a Contributing Project under this ECDA, which would enable Ktunaxa to participate in revenue sharing from the Swift Project.

EAO understands that Teck and KNC are in negotiations towards a potential Impact and Management Benefit Agreement encompassing Teck's five Elk Valley coal mining operations, subject to a decision by Ktunaxa leadership by late 2015.

Some of the initiatives on which Teck and KNC are collaborating include:

- Workforce investment and human resources development strategy;
- Training, education, employment, procurement and business development initiatives for Ktunaxa citizens;
- Recruitment, retention and advancement strategies for Ktunaxa employees;
- Measures to identify and address positive or adverse social effects related to increased engagement of Ktunaxa citizens in the Teck work force;

- Development of a Ktunaxa Cultural Management Plan, Access Plan, and a Ktunaxa Valley Wild Foods Program; and
- Support and funding for Ktunaxa to participate in post-EAC activities, such as management plan development, compliance activities, and permitting.

Teck and the KNC signed a Procurement and Employment Strategy in 2010, and continue to implement the agreement through annual human resources and procurement planning. The agreement intends to increase the training, education and employment opportunities for Ktunaxa citizens in the Elk Valley, who currently make up a small percentage of Teck's workforce.

EAO proposes a condition, jointly developed by Teck and KNC, that requires the Proponent to collaborate with KNC on the development and implementation of a number of management plans, to ensure Ktunaxa participation in business and employment opportunities, cultural management programs, biodiversity management, mine reclamation and closure planning, as well as to ensure Ktunaxa access to the Fording River Operations area for cultural uses and harvesting activities.

#### **Contribution to Community Development**

If the Swift Project proceeds, Teck anticipates Elkford will initiate municipal rezoning so that the Swift Project will be subject to a base property tax levy, which will feed into the Elk Valley Property Tax Sharing Agreement to support local communities. In 2013, FROs' contribution was approximately \$2.8 million.

The five Elk Valley mines and the Teck Sparwood Offices collectively employ nearly 4,000 workers, with an average wage (excluding benefits) of \$75,000. Teck predicts labour force requirements similar to the existing mine, at approximately 1000 full-time equivalents, and the Swift Project would result in the continuation of a similar number of employment and contracting opportunities for regional and local residents during the operating period. Approximately 70 percent of the Elk Valley mine workforce resides in the communities of Elkford, Sparwood, Fernie, Crowsnest Pass, and in the Regional District of East Kootenay Area A. The local workforce and supply contractors staff contribute to the regional economy by purchasing goods and services.

# **12 Conclusion**

Based on:

- Information contained in Teck's Application and the supplemental information provided during Application Review;
- Teck's and EAO's efforts at consultation with potentially affected First Nations, federal, provincial and local government agencies, and the public, and its commitment to ongoing consultation;

- Comments on the Swift Project made by KNC, federal, provincial and local government agencies, as members of EAO's Working Group, and the Teck's and EAO's responses to these comments;
- Comments on the Swift Project received during the public comment period, and Teck's responses to these comments;
- Issues raised by KNC regarding potential impacts of the Swift Project and Teck's responses and best efforts to address these issues;
- The design of the Swift Project as specified in the proposed Schedule A (Certified Project Description) of the EAC to be implemented by Teck during all phases of the Swift Project; and
- Mitigation measures identified as proposed conditions in Schedule B (Table of Conditions) of the EAC to be undertaken by Teck during all phases of the Swift Project.

EAO is satisfied that:

- The EA has adequately identified and assessed the potential adverse environmental, economic, social, heritage and health effects of the Swift Project, having regard to the proposed conditions set out in Schedule B (Table of Conditions) to the EAC;
- Consultation with KNC, federal, provincial and local government agencies, and the public, and the distribution of information about the Swift Project have been adequately carried out by Teck and that efforts to consult with KNC will continue on an ongoing basis;
- Issues identified by KNC, federal, provincial and local government agencies, and the public, which were within the scope of the EA, were adequately and reasonably addressed by Teck during the review of the Application;
- There are number of BC-led regional initiatives underway to manage and mitigate for cumulative effects on terrestrial and aquatic values in the Elk Valley, with participation of provincial ministries, local stakeholders, and Aboriginal groups;
- Considering the above-mentioned regional initiatives and the proposed conditions for the Swift Project that would be legally-required as part of any EAC as well as the application of any subsequent permitting requirements, the potential adverse environmental, social, economic, heritage or health effects of the Project would be reduced to an acceptable level and would not be significant;
- The potential for adverse effects on KNC's Aboriginal Interests has been avoided, minimized or otherwise accommodated to an acceptable level; and
- The provincial Crown has fulfilled its obligations for consultation and accommodation to potentially affected First Nations relating to the issuance of an EACEAC for the Swift Project.