

Summary Assessment Report for Ajax Mine Project (Ajax)

With respect to the application by KGHM Ajax Mining Inc. for an
Environmental Assessment Certificate pursuant to the *Environmental
Assessment Act*, S.B.C. 2002, c. 43

1 INTRODUCTION

The Summary Assessment Report provides an overview of the environmental assessment (EA) for the proposed Ajax Mine Project (Ajax) as conducted by the Environmental Assessment Office (EAO). Ajax was subject to review under both provincial and federal EA legislation, and a cooperative EA was carried out by the EAO and the Canadian Environmental Assessment Agency (the Agency) from the formal commencement of the EA process in 2011 through to the final public comment period.

Ajax requires the provincial Responsible Ministers to issue an environmental assessment certificate, and the federal Minister of Environment and Climate Change Canada (or Government in Council) to grant approval before the Project could proceed to permitting. In British Columbia (BC), the decision whether or not to issue an EA Certificate is made under the *Environmental Assessment Act* by the Minister of Environment and Climate Change Strategy and the Minister of Energy, Mines and Petroleum Resources (Ministers).

This Summary Assessment Report is prepared by the EAO as an overview of key findings from the joint federal Comprehensive Study/provincial Assessment Report (the Joint Assessment Report) that was prepared by the EAO and Agency to meet the requirements of BC's *Environmental Assessment Act* and the former *Canadian Environmental Assessment Act*. The Summary Assessment Report discusses the key issues, findings and conclusions of the EA and makes reference to sections of the Joint Assessment Report, where more detailed effects assessment can be found. The EAO has also prepared proposed EA Certificate conditions and a proposed Certified Project Description for consideration by provincial Ministers.

2 PROJECT DESCRIPTION

KGHM Ajax Mining Inc. (KAM) has applied for an EA Certificate to develop, operate, and decommission an open-pit copper and gold mine and ore processing facility. The Ajax footprint would be approximately 1,700 hectares (ha) and the mine would operate for an estimated 23 years at a mining rate of 65,000 tonnes of ore per day. The proposed mine site is located within the Thompson Nicola Regional District, adjacent to the southern boundary of the City of Kamloops (population 90,000) (Figure 1). Some mine infrastructure would be, at its closest, approximately 1.8 kilometres (km) south and west of the residential areas of Aberdeen and Knutsford, respectively. A small number of rural residences and ranches would be within approximately 1 km to the east and west of the mine site.

The Ajax footprint is held in largely fee simple land owned by KAM, with a small portion of Crown land. Ajax would be located within the asserted traditional territories of Tk'emlúps te Secwépemc (Tk'emlúps Indian Band) and Skeetchestn Indian Band, who were jointly represented by Stk'emlupsemc te Secwépemc Nation (SSN) in the EA. Ajax would also be located in the asserted traditional territories of Ashcroft Indian Band, Lower Nicola Indian Band, and Whispering Pines/Clinton Indian Band. The mine site ecosystems are typical of the warm, dry climate of the bunchgrass grasslands zone, and provide important habitat for wildlife. Jacko Lake, a popular recreation site, lies partially within the proposed open pit area of Ajax, and a number of creeks are present within the site, including Peterson Creek which flows out of Jacko Lake through Kamloops into the South Thompson River. Goose Lake Road

bisects the mine site, and a section of the road would need to be closed as part of developing the tailings storage facility.

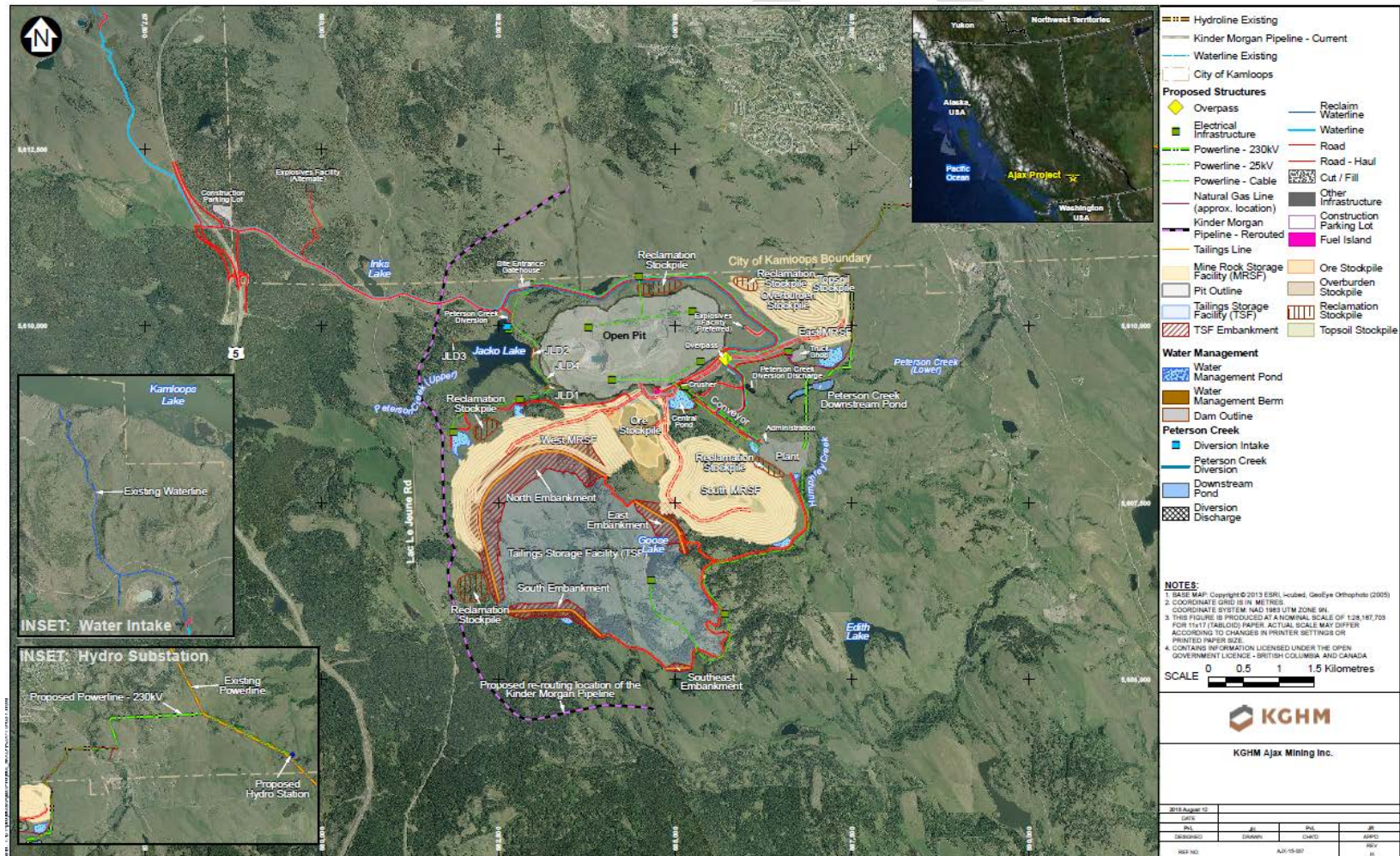
The mine site has been impacted to varying degrees, by past and current activities, such as ranching and cattle grazing, and open pit mining by a subsidiary of Teck Resources Corp. between 1988-1991 and again between 1994-1997. Approximately 17.7% of the 1700 ha Ajax footprint has remains of these mining activities, including approximately 25 ha of open pits and the remainder as reclaimed waste rock dumps.

Ajax would include the following key Project components and activities:

- Development of an approximately 300 ha open pit, with a maximum depth of approximately 577 metres (m);
- Installation of a dam and dewatering of the northeast arm of Jacko Lake to allow for open pit development;
- Construction and operation of an on-site ore processing plant that would produce copper and gold concentrates;
- Construction and operation of a 685 ha tailings storage facility that would store thickened tailings, process water, and contact runoff water from mine facilities in an area bounded by natural topography and four embankments (dams);
- Four mine rock storage facilities, as well as topsoil and overburden stockpiles;
- Water management facilities, including collection ponds to reclaim and recycle water, engineered dams on Jacko Lake to provide flood control, and a 2.7 km diversion of Peterson Creek around the south edge of the open pit;
- Construction of access roads, and upgrades to existing transportation infrastructure including upgrades to the Inks Lake Road interchange at Highway 5 (Coquihalla Highway);
- Construction of a 9 km, 230 kilovolt powerline from the BC Hydro transmission line through Knutsford to supply power for the mine;
- Installation of a 5.3 km natural gas pipeline from Knutsford (connecting with a FortisBC pipeline) to provide heating and back-up electricity generation for the mine;
- Offsite explosives manufacturing and storage located approximately 4 km northwest of the Ajax mine site;
- Restoration of an existing water intake in Kamloops Lake and construction of a new 16 km water supply line to supply freshwater to the Project; and
- A concentrate storage and shipping area.

The life of the Project is divided into four phases: 2.5 years of construction, up to 23 years of operations, 5 years of decommissioning and closure, and 5 or more years of post-closure monitoring. Decommissioning of some project facilities and progressive reclamation would be undertaken during operation. Reclamation would continue through decommissioning and closure. Post-closure monitoring would be determined as required by regulatory government agencies, particularly the Ministry of Energy, Mines and Petroleum Resources (MEMPR).

Figure 1: Location of the Ajax Mine Project Infrastructure



Project Design Changes as a Result of the Environmental Assessment

The original design and operation of a project, as it is proposed by a proponent, often changes during an EA in response to key issues that are identified by government agencies, Indigenous groups, and public stakeholders. During the Ajax EA, KAM modified aspects of the Project design during both the pre-Application and the Application Review phases to avoid or mitigate identified effects. The key Project design modifications included:

Pre-Application phase:

- Redesigning the Project configuration such that the majority of the Ajax footprint would lie adjacent to the southern boundary of the City of Kamloops and that some mine infrastructure would be further away from the boundary neighbourhoods targeted for expansion (e.g., Aberdeen, Pineview Valley); and
- Redesigning the tailings storage facility from a 'dry' facility to a conventional 'wet' facility with thickened tailings and mine-rock buttresses on the embankments, to reduce potential dust, noise, and visual effects on residences, and reduce the potential for accidents and malfunctions associated with the original tailings storage facility design.

Application Review phase:

- Replacing the proposed Inks Lake offsetting plan with a Jacko Lake fish and fish habitat offsetting plan, the purpose of which would be compensate for the fish habitat lost as part of open pit development, and to ensure continued functionality of the SSN spring rainbow trout fishery; and
- Redesigning the Peterson Creek diversion system presented in the Application from a pump-and-pipe system that would have altered the outflow of Peterson Creek, and changing to retain a gravity outflow system in order to reduce impacts to the quality of sport fishing in Jacko Lake to preserve fish habitat, and to ensure continued functionality of the SSN spring trout fishery.

3 STRATEGIC CONTEXT (IF APPLICABLE)

Federal-Provincial Coordination

Ajax required both federal and provincial EAs. The EAO and Agency conducted a coordinated EA over the course of six years, including co-chairing the technical working group, coordinating consultation with Indigenous groups where appropriate, and working together to identify and address technical issues in the assessment. The coordination resulted in the development of a joint federal Comprehensive Study Report / provincial Assessment Report (Joint Report) to support separate provincial and federal decisions. Since the federal EA was triggered under the former *Canadian Environmental Assessment Act*, it was not eligible for substitution provisions that were established under the *Canadian Environmental Assessment Act, 2012*.

Engagement with Indigenous Groups

The Province initiated an Ajax government-to-government discussion table in mid-2015 that included SSN, the EAO, the Major Mines Permitting Office of MEMPR, Ministry of Indigenous Relations and Reconciliation, Ministry of Forests, Lands, Natural Resource Operations and Rural Development (MFLNR), and other provincial agencies as necessary. This expanded consultation approach enabled the collaborative development of an Ajax Mine Government to Government Framework Agreement (Government to Government Framework) to further the relationship between SSN and the Province as it relates to Ajax. The scope of this agreement included the EA, permitting, negotiation of a provincial accommodation package and linkages to broader reconciliation initiatives.

As part of the Ajax government-to-government discussion table, the EAO began a dialogue with SSN regarding a more collaborative approach to SSN involvement in the provincial EA. SSN and the EAO began co-writing an Ajax Mine EA Collaboration Plan (EA Collaboration Plan) in May 2015. In July 2015, SSN Joint Council formally initiated their own community-based review, referred to as the SSN Assessment Process, which is further described in Section 6 below. Accordingly, additional process steps were then identified in the EA Collaboration Plan to embed the SSN Assessment Process in the provincial EA process. The Ajax Mine Government to Government Framework Agreement, including the EA Collaboration Plan, were implemented in practice in early 2016 and formally signed by SSN Joint Chiefs and the Province in September 2016.

The purpose of the EA Collaboration Plan, which was one of the first such agreements developed between the EAO and an Indigenous group, was to support informed decision-making, to ensure that SSN has direct input into the provincial EA decision-making process and that to ensure SSN's input would be adequately considered. The plan identifies key collaboration points including commitments by both parties to share specific information and draft materials. The plan also establishes an approach to issues management and resolution. Ultimately, this enhanced collaborative approach with SSN resulted in a unique and flexible EA process and activities that included timeline changes, additional rounds of comments and responses resulting directly from the SSN Assessment Process, over 50 meetings with SSN, provincial participation in SSN Assessment Process events, and a commitment by the EAO to include and consider the results of the SSN Assessment Process in the assessment report prepared by the EAO and Agency.

4 ENVIRONMENTAL ASSESSMENT PROCESS

The Ajax EA has been active for more than six years, and has included extensive engagement with government agencies, Indigenous groups, and the public on the potential environmental, economic, social, heritage, and health effects, including cumulative effects, of the Project as required under the *Environmental Assessment Act*. Key steps in the process are presented below.

Pre-Application Phase

On February 25, 2011, the EAO determined that Ajax was reviewable pursuant to the Reviewable Projects Regulation, since it is a new mining facility that would have a production capacity of at least 75,000 tonnes per year

of mineral ore. Consequently, the EAO issued an order under Section 10 of the *Environmental Assessment Act* requiring Ajax to undergo an EA.

On June 3, 2011, the EAO issued an order under Section 11 of the Act (Section 11 Order) which set out the requirements for a public comment period on KAM's project description document in coordination with the Agency's requirements for the federal comprehensive study EA. On January 11, 2012, the EAO issued another Section 11 Order, which set out the complete scope, procedures and methods for the EA, including requirements for consultation with Indigenous groups.

The EAO, together with the Agency, established a technical advisory working group to review key documents and provide advice during the EA. The working group included representatives of federal, provincial, and local/regional governments, whose mandates and skill sets were relevant to the review of Ajax, as well as representatives of potentially affected Indigenous groups.

Following working group, public and Indigenous group consultation, the EAO and Agency issued joint Environmental Impact Statement Guidelines / Application Information Requirements to KAM in June 2013, based on an initial project design for an open pit mine with a dry-stack tailings storage facility, located to the east and south of the City of Kamloops and which included some infrastructure located within municipal boundaries. In August 2013, in consideration of extensive public feedback, KAM announced project design changes that resulted in key project components being situated further south from the City of Kamloops and changed the approach for tailings management from dry-stacked to conventional wet tailings storage.

The EAO and Agency held another public comment period in late 2014 to gather feedback on revisions to the Application Information Requirements that were proposed to capture the Ajax design changes, and subsequently issued a final revised Environmental Impact Statement Guidelines / Application Information Requirements in July 2015.

KAM submitted its final Application for screening in September 2015. Following an extended screening evaluation period by the EAO and Agency, with input from the working group and SSN, the EAO accepted the Application for review.

Application Review Phase

The 180-day Application Review phase of the EA began on January 18, 2016. During the review, the EAO and Agency sought comments on the Application from the working group, Indigenous groups, and the public.

The EAO and Agency continued to carry out joint public consultation activities during Application Review, which included holding a 75-day public comment period between January and April 2016, and hosting 4 open houses in Kamloops. Over 3300 comments were submitted on the Application, and over 600 people attended the open houses.

On May 4, 2016, the EAO suspended the review timeline at KAM's request, to provide KAM additional time to participate fully in the SSN Assessment Process and also to respond to the substantial volume of submissions

received during the comment period from the public, SSN, and the working group. Over the course of the 11-month suspension, KAM prepared supplemental information in response to key issues and information requests from the EAO and Agency, and the working group and SSN continued to provide review and comment. On March 29, 2017, the EAO determined that KAM had provided adequate information to continue the EA, and lifted the timeline suspension. At the same time, the EAO proactively extended the provincial review timeline by 110 days. This extension enabled the alignment of the provincial and federal timelines for completion of the coordinated EA, the development of a federal-provincial Joint Assessment Report, and the provision of an additional public comment period on the Joint Assessment Report and proposed provincial EA Certificate conditions, prior to Ministerial referral.

Other Required Authorizations

If a provincial EA Certificate is granted by Ministers and the EA is approved by the federal government, Ajax would require various permits from federal, provincial, and local government agencies prior to proceeding to construction. The key provincial permits would be provided by MEMPR under the *Mines Act*, and the Ministry of Environment and Climate Change Strategy (MOE) under the *Environmental Management Act*. Key federal authorizations would be required from the Department of Fisheries and Oceans Canada (DFO) under the *Fisheries Act*, and Natural Resources Canada under the *Explosives Act*. Local government permits would be required from the City of Kamloops and the Thompson Nicola Regional District.

A list of the main permits and authorizations is provided in Section 1.3 of the Joint Assessment Report.

5 KEY ISSUES AND CONCLUSIONS OF THE ENVIRONMENTAL ASSESSMENT

The EA considered the Project's potential adverse environmental, economic, social, heritage, and health effects, including cumulative effects. Environmental, health and heritage assessments are required by both federal and provincial legislation and were jointly assessed by the EAO and Agency. The social and economic valued components required by provincial legislation only were assessed by the EAO.

EAs in BC use valued components as a methodological or organizing framework for the assessment of the potential effects of projects. Valued components are components of the natural and human environment that are considered by the proponent, public, Indigenous 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.

The Joint Assessment Report for Ajax assesses the valued components included in the Application, and is organized as per Table 1.

Table 1: Valued Components Assessed in the Joint Assessment Report

Environment <ul style="list-style-type: none"> • Surface Water Quality and Quantity • Groundwater Quality and Quantity • Fish and Fish Habitat • Vegetation (including rare plants, wetlands, grasslands) • Wildlife (including amphibians, reptiles, migratory birds, raptors, non-migratory game birds, mammals (bats, badgers)) • Greenhouse Gases • Air Quality • Noise and Vibration • Current Use of Land and Resources for Traditional Purposes 	Health <ul style="list-style-type: none"> • Human Health (including air quality, domestic water quality, country foods, noise and vibration) Social and Economic <ul style="list-style-type: none"> • Community Well-being • Recreation • Local and Regional Economy • Accommodation, Infrastructure, Public Facilities and Services • Land and Resource Use • Property Values • Aboriginal Economies Heritage <ul style="list-style-type: none"> • Heritage
--	--

The Joint Assessment Report assesses the impacts of Ajax on valued components, identifies key mitigation measures, and reaches conclusions on the residual effects. The EA also considered how accidents and malfunctions and effects of the environment on the Project could affect these valued components. These assessments were based on the Application provided by KAM, supplemental materials, and consultation with the working group, Indigenous groups, and the public.

The EAO and Agency concluded that Ajax would result in significant adverse effects to physical and cultural heritage due to effects to Indigenous heritage, and to the current use of land and resources for traditional purposes due to impacts to Indigenous fishing and to cultural and ceremonial activities. The EAO and Agency determined that there would be residual and cumulative effects to a range of other valued components that were assessed and concluded that, with the implementation of mitigations and legally-binding conditions, these adverse impacts were not likely to be significant. The Joint Assessment Report further describes the key issues raised, the status of resolution, and the EAO and Agency's conclusions regarding these residual effects, including the confidence associated with the significance determinations.

To ensure the residual adverse effects of Ajax are adequately avoided, minimized or offset, and to ensure that uncertainty would be managed to the extent possible, the EAO proposes 42 conditions and a Certified Project Description, which, if Ministers issue an EA Certificate for Ajax, would become legally binding and subject to compliance and enforcement oversight.

The remainder of this section provides a summary of several themes that were main focuses of the EA: air quality and human health; Jacko Lake and the area identified by SSN as *Pípsell*; social and economic effects; grasslands, wildlife and ecosystems; and the risk of a tailings storage facility failure.

Air Quality and Human Health

Due to the proximity of Ajax to the City of Kamloops and in consideration of the region's arid climate, mountainous topography, and prevailing wind direction, the potential impacts on air quality and human health were primary concerns during the EA. This was emphasised in concerns raised by the public about the health and nuisance effects of adding Ajax-related dust to the current environment which already experiences exceedances of guidelines for total suspended particulates (TSP) and fine particulate matter (PM₁₀ and PM_{2.5}), particularly in the valley bottom. While transportation, home heating, industrial emissions, and dust from roads and disturbed lands are the major human contributors to current local air quality conditions, air quality objective exceedances are often episodic, driven by external forces such as a forest fire, or are the consequence of local domestic and industrial emissions that accumulate when meteorological conditions result in poor dispersion.

The primary impacts of Ajax to air quality would occur during operations, most noticeably under high wind conditions. The haul roads, the tailings storage facility, mine rock storage facilities, and blasting would be the major sources of dust and particulate matter emissions from the Project.

The working group, Indigenous groups, and the public raised concerns about the ability of KAM to meet their stated commitment to control 90% of dust emissions from haul roads. The haul roads are the dominant contributors of PM₁₀ and PM_{2.5}. In consideration of a lack of supporting information regarding this level of emissions control and to help bracket the uncertainty regarding dust management, the EAO and Agency required KAM to present updated dispersion modelling results during review, including scenarios of 90%, 80% and 70% haul road dust suppression as well as a short-term "upset case" scenario of 0% active mitigation on haul roads.

In response to information requests from the EAO and Agency, KAM provided supplementary information about key mitigation measures in an updated fugitive dust management plan. The plan included predictive meteorological forecasting, predictive air dispersion modelling, and real-time air quality monitoring to guide operations and mitigation actions. The plan also committed to actions that would be implemented for various project components in the event of unexpected circumstances that lead to the generation and dispersion of dust, up to and including the curtailment of specific mining activities (such as haul truck restrictions) during periods of extended dry conditions and high winds. MOE, as the provincial agency responsible for air quality monitoring and management under the *Environmental Management Act*, advised the EAO that KAM's conceptual approach to monitoring and management approach was reasonable and would be subject to further detailed requirements at permitting. MOE also noted that the plan would be less effective in dealing with short-term events (e.g. less than one-hour), particularly dust storms during the summer periods.

The EAO and Agency concluded that concentrations of 24-hour TSP, 24-hour PM₁₀, and 24-hour PM_{2.5} from Ajax are predicted to exceed the applicable air quality objectives at the mine site boundary, but would decrease rapidly with distance from the mine site. Prior to reaching upper Aberdeen, these concentrations would generally decrease to

within applicable provincial objectives, except for 24-hour average PM_{10} , which could exceed the objective between 7 to 21 days per year in upper Aberdeen, typically during winter months. During these occurrences, the maximum predicted concentration of PM_{10} could be approximately twice the provincial objective at the lower end of this range, and the concentrations would increase (linearly) as haul road dust mitigation effectiveness decreases. The EAO also acknowledges MOE's view that Ajax is likely to require the most comprehensive and complex dust monitoring and mitigation systems that have been attempted for any mine in BC, and therefore, while 90% mitigation may be KAM's objective, the EAO is not confident that it can be consistently achieved. Therefore, the EAO anticipates that the frequency of exceedances may be closer to the upper bound of the 7 to 21 day range, and could possibly be higher. In addition, upper Aberdeen and other neighbourhoods near the Project would also experience sporadic short-term dust storms throughout the mine life, primarily during summer months, which would produce high concentrations of PM_{10} for periods generally lasting less than an hour and that are not likely to result in exceedances of the 24-hour average PM_{10} objective. These short-term high levels of PM_{10} have potential to cause noticeable localized effects such as increased dust deposition, eye irritation and breathing difficulties for short periods.

Regarding potential air quality impacts to human health, a primary concern of the working group, public and Indigenous groups was that any increase in $PM_{2.5}$ levels may result in an increased health risk because there is no identified safe level of $PM_{2.5}$. The Agency and the EAO acknowledged that health risk increases with increases in $PM_{2.5}$, even when concentrations are below guideline levels and, therefore, assessed total exposure to $PM_{2.5}$ in determining health risks. For total exposure, the EAO and Agency concluded that Ajax would result in increased concentrations of $PM_{2.5}$ near the mine, but would not cause exceedances of the 24-hour $PM_{2.5}$ air quality objective in upper Aberdeen, unless mitigation fails completely, in which case additional actions based on KAM's Fugitive Dust Management Plan would be implemented.

To support an overall air quality management strategy for Ajax, and to help address uncertainties related to the air quality impacts and associated health effects, the EAO is proposing a condition that would require KAM to develop and implement an Air Quality Management and Monitoring Plan that would include a fugitive dust management component that would describe the mitigation, verification, and adaptive management measures that KAM would implement to reduce fugitive dust emissions from Ajax, up to and including curtailment of operations. To support the expected high levels of air quality monitoring effort, and in response to public interest in transparency of air quality reporting, the EAO is also proposing a condition requiring KAM to retain an air quality reviewer with experience in the analysis and interpretation of air quality and meteorological data to conduct independent data reviews and quality assurance of KAM's air quality monitoring network, and to provide information to government agencies, Indigenous groups, and the public.

The EAO and Agency concluded that, in consideration of the air quality effects assessment, Ajax would result in increased health risks for $PM_{2.5}$ and PM_{10} that are medium in magnitude since concentrations differ, sometimes substantially, from the average value for existing conditions. The frequency of exceedances of particulate matter would be highest in neighbourhoods closest to the mine, and range from sporadic ($PM_{2.5}$) to regular (PM_{10}) throughout the life of Ajax, depending on mitigation efficiency and atmospheric conditions. While scientific studies are not yet available to support Ambient Air Quality Objectives for $PM_{2.5}$ and PM_{10} based on shorter averaging

periods (e.g. less than one hour), the EAO and Agency acknowledge that this does not mean that there are no health effects due to shorter periods of high concentrations. The EAO has proposed conditions, which include requirements for monitoring and adaptive management of air quality during all phases of the Project, to address some of these uncertainties, as well as a condition requiring human health monitoring and reporting related to potential direct and indirect effects of air emissions. The EAO also notes that further requirements related to air quality monitoring and management would be established by MOE during the permitting phase, should the Project proceed. The EAO and Agency concluded that the changes to health risks from Ajax would not cause significant adverse health effects. The significance determination was made with low confidence due to the numerous uncertainties identified during the review, including uncertainties associated with the effectiveness of mitigation measures, analytical techniques, and available information.

Jacko Lake and Pípsell

Jacko Lake is a popular fishing area, about 43 ha in size, located a short drive from the City of Kamloops. The lake is located largely on private land owned by KAM, and is accessible (April through October) via seasonally-gated public access road to a parking and boat launch area at the north arm. The lake has been stocked annually with rainbow trout since at least the 1950s and is one of the top 20 lakes in the Thompson Nicola Regional District for angler days. Jacko Lake and the surrounding area have also been identified by SSN as *Pípsell*, an area of cultural and spiritual importance to SSN. SSN has identified that they have a spring trout fishery at the outlet of Peterson Creek, where Jacko Lake overflows during high-water periods.

Impacts to Jacko Lake were broadly assessed through various valued components, including surface water, groundwater, air quality, fish and fish habitat, noise and vibration, recreation, community well-being, land and resource use, current use of land and resources for traditional purposes, and heritage. The discussion in this section summarizes some of the key effects identified in the individual assessments, in relation to Jacko Lake.

Jacko Lake lies within the Ajax footprint, adjacent to the open pit. Mine construction and operations would alter the area within and around Jacko Lake as a result of a number of factors:

- Adverse changes to air quality, noise and vibration, visual impacts, traffic, and the number of people using the area;
- Approximately three months of elevated noise levels during installation of the sheet pile dam,
- Loss of a 2.08 ha of fish habitat in the northeast arm, which would be dewatered as part of building the open pit;
- Temporary access restrictions to portions of the southeast arm during the construction phase, while portions of an old dam are decommissioned and removed;
- Daily blasting that, during at least 12 years of operations, would require anglers and other recreational users to remain outside a safety buffer zone that would generally extend halfway across the lake for approximately 2 hours per day; and
- A period of disruptions associated with the dredging and expansion of the west arm that would be built to meet DFO's fish habitat offsetting requirements (this offsetting would later provide new areas for angling).

During the EA, the working group, SSN and the public expressed concern regarding how multiple types of social and environmental impacts could affect the use, experience and environmental conditions of Jacko Lake. DFO, MFLNR, SSN and local angling groups were concerned about the loss of the productive fish habitat in the northeast arm of the lake, the effectiveness of fish habitat offsetting, and the potential for the fishing experience and angler use to be slightly or significantly diminished. These groups suggested that anglers might migrate away from Jacko to other areas, and that this could result in increased fishing pressure on other lakes in the region. The working group, SSN and the public expressed concern about blasting and vibration causing fish mortality. The working group, SSN and the public were also concerned about impacts on water quality and aquatic life from dustfall and potential contaminated mine seepage entering the lake.

During the EA, KAM provided a series of measures to reduce the impacts of the mine on Jacko Lake, including a fugitive dust management plan, vibration mitigation measures to reduce fish mortality, and measures to reduce or avoid contaminants affecting the water quality of Jacko Lake. KAM modified their blasting management plan and the timing of blasting, in consideration of when anglers would be using the lake and to avoid sensitive wildlife periods near dawn, dusk, and midday. Additionally, to offset adverse impacts of the Project, KAM committed to constructing a new access road, boat ramp, and day use facilities, and to making improvements to lakeside trails which would enhance the existing infrastructure for recreational users. KAM also committed to the creation of a Jacko Lake multi-users group to monitor and manage for impacts to the angling experience.

Members of the working group, public, and SSN also raised concerns that water from Jacko Lake would seep into the adjacent open pit through fractures in the bedrock and faults, and questioned whether the hydraulic properties of the area between Jacko Lake and the open pit had been sufficiently investigated. Reviewers also raised concerns with the potential for a failure of the pit lake high wall, which could result in a complete drainage of the lake and related effects to fish and fish habitat, recreation, and overall ecosystem health.

In response to the identified uncertainties, KAM committed to undertaking additional hydrogeological investigations, including pumping tests around Jacko Lake, prior to submitting subsequent permit applications, to inform monitoring and mitigation. The EAO is proposing a condition that would require KAM to undertake these investigations prior to construction and to incorporate the results of these investigations in updates to the groundwater models, as well as the surface and groundwater monitoring and management plans. Overall, the EAO and Agency concluded that groundwater monitoring and management measures were adequate to address concerns related to Jacko Lake seepage toward the open pit.

With respect to biophysical impacts at Jacko Lake, the EAO is proposing conditions requiring management and monitoring plans that would mitigate these residual adverse effects. The EAO also acknowledges that, should the Project proceed, there would be extensive permitting requirements imposed by MOE, MEMPR, and DFO that are also intended to address potential adverse impacts to Jacko Lake. The EAO and Agency concluded that the residual adverse effects of Ajax on fish populations, water quality and aquatic health would not be significant.

With respect to impacts to recreation and angling, the EAO agreed with KAM's proposal to create improved day use facilities for anglers, and is proposing a condition requiring that this infrastructure be built as an offsetting measure. Notwithstanding the measures to reduce biophysical impacts, the EAO is of the view that there remains uncertainty

regarding the magnitude of the impacts of these multiple effects and how angling use of the lake may be altered or reduced as a result of Ajax. The EAO concluded that Ajax would not result in a significant adverse effect recreational access and angling opportunities locally and in the region, although the angling experience on Jacko Lake would be significantly altered during construction and operations.

Jacko Lake is part of the area that SSN identifies as *Pípsell* (small trout), described in the SSN's oral history of the Trout Children Story. *Pípsell* includes the lake, the surrounding grasslands and the habitats of the red headed woodpecker and the chickadee. *Pípsell* also includes petroforms identified by SSN as part of a hunting blind complex, Goose Lake, Peterson Creek, and a prayer tree identified as *K'écúseu* (tears welling up in someone's eyes). SSN communicated that *Pípsell* is of significant cultural and spiritual importance and that under Secwépemc law, they are responsible for the ongoing stewardship of this area.

Development of Ajax would destroy the hunting blind complex described by SSN, which is located in the open pit area. Goose Lake would be buried under the tailings storage facility. The outlet of Peterson Creek and the first 150 m of the channel would be preserved, after which the creek would be diverted into a 2.7 km culvert through the mine site. The prayer tree site near the mine footprint would not be lost, but the area would be altered by Ajax noise and dust and SSN communicated that the cultural significance of the site would be impacted by proximity of the mine.

During the EA, SSN communicated significant concerns about the impacts to *Pípsell* and expressed that, despite KAM efforts to reduce the multiple types of effects and to ensure that SSN would have continued access to KAM-owned land and to the spring trout fishery, the effects to *Pípsell* could not be adequately mitigated. In SSN's views, the risks to Jacko Lake and *Pípsell* overall were not acceptable.

In consideration of the importance of *Pípsell* and the Trout Children Story, the EAO and Agency concluded, taking into account the implementation of applicable mitigation measures proposed by KAM and the proposed EA Certificate conditions, that there would be significant adverse effects to Indigenous heritage and to the current use of lands and resources for traditional purposes. The importance of *Pípsell* was also extensively considered by the EAO and Agency in the assessment of the seriousness of impacts to SSN's asserted Aboriginal rights and title, which are summarized in Section 6 below.

Social and Economic Effects

Given the proximity of Ajax to the City of Kamloops, potential economic and social effects were consistently raised by local government officials, members of the working group, and the public. The EAO considered a broad range of potential adverse effects during the EA, including the following:

- Impacts of the construction workforce on healthcare, social conflicts resulting in increased policing demands, and the availability of residential and tourism accommodations;
- Wage pressure and labour competition for local businesses;
- Impacts on ranching;
- Reductions in residential property values; and
- Impacts on community wellbeing.

The EA found that Ajax could result in short-term, low magnitude economic effects in the City and surrounding region as a result of changes to the availability of temporary accommodations, increased labour competition, and increased demands on policing. KAM acknowledged these concerns and committed to mitigation measures such as a construction workforce accommodation management plan, a human resource management plan, and an employee code of conduct.

With regard to economic impacts to agriculture and ranching, the EA found that long-term changes in surface water and groundwater flows could potentially affect ranchers in close proximity to the mine who draw water for irrigation purposes. KAM proposed to supplement the losses to streamflow in Peterson Creek during mine operations with water that is pumped from Kamloops Lake, thereby eliminating impacts to water users during mine life. The EAO notes that MFLNR raised concerns that streamflow impacts would require a long-term management strategy for meeting the water supply of water licence holders upstream and downstream of the Project following mine closure, and has advised KAM to seek a streamflow mitigation option prior to permitting that would not require pumping in perpetuity.

The issue of adverse economic impacts to property values was raised by the City of Kamloops, the Aberdeen residents' association, and Aberdeen area developers who had concerns about how Ajax might cause reductions in property values in the Aberdeen area. In consideration of technical advice regarding the complexity of multiple factors that influence property values, the EAO acknowledges the challenges of attribution of property value impacts related to any single project or activity including Ajax. Although the EAO considers that while Ajax may have positive effects on property values in the City and surrounding region overall, there is potential for individual or combined effects from dust deposition, noise emissions, and visual quality changes to result in medium magnitude effects to the value of properties adjacent to the mine site (there are up to 22 homes that may be affected with 2 to 3 homes having a high likelihood of effect). The EAO concluded that, in consideration of the magnitude of nuisance effects at further distance from the mine, there was low likelihood that Ajax would result in property value reductions in the southern areas of Aberdeen and these effects would be negligible-to-low magnitude. Although some public commenters suggested that a property value protection program was necessary, the EAO is of the opinion that such a program is not practically feasible given the highly complex nature of assessing property values and the technical challenges of isolating project effects that could result in changes to property values. Overall, the EAO considers it reasonable to manage potential property value effects by managing the activities that may result in negative impacts to property values. As such, the proposed EA conditions include requirements to monitor and manage dust, noise, light pollution, water quality and water quantity.

In the EA, the social valued component of community wellbeing was assessed directly through impacts to visual quality, changes to dark sky quality, and access to healthcare. The assessment of community wellbeing also considered the conclusions outlined in the environmental, health, and heritage chapters. The EA found that Ajax could result in generally low-to-moderate magnitude effects to community wellbeing for residences closest to the mine. KAM acknowledged the potential effects and proposed the following mitigation measures:

- Site specific mitigations for changes in visual quality such as tree planting;
- A dark sky monitoring and management plan to reduce light emissions from the Project;

- Industrial lighting design to further reduce light emissions; and
- Healthcare services including a general practitioner to eliminate Ajax-related demand on local healthcare services.

To monitor and advise on potential socio-economic effects, KAM committed to establishing a community liaison group that would act as a forum for local stakeholder groups with interests and relevant experience to raise issues, review Project monitoring results, and discuss additional mitigation approaches as required, and supporting the sharing information with the broader community over the life of the mine. Although the EAO, the City of Kamloops and public have noted that further details will be required on the implementation of the community liaison group, the EAO considers KAM's proposed approach to be generally reflective of good practice in community engagement, as well as an appropriate tool for the monitoring and adaptive management of unforeseen social and economic effects.

In developing the Joint Report and the proposed table of conditions, the EAO notes that there are limitations in the analytical techniques and information available to predict socio-economic effects, and also proposes a number of conditions to monitor and adaptively manage potential the socio-economic effects described above. The key conditions are:

- Establish and maintain a community liaison group throughout the construction, operations, and decommissioning of the Project, and continue public engagement;
- Implement a construction workforce accommodation and health services plan to reduce impacts on lower income renters and ensure continued accessibility of healthcare services to residents;
- Provide a plan for the long-term management of ecological and water licensing impacts associated with stream flow reductions in Peterson Creek; and
- Develop and implement a number of management and monitoring plans for air quality, water quality, noise and vibration, and dark sky/light pollution that would serve to reduce impacts from nuisance effects on residential areas close to the mine site.

In consideration of the assessment results and the legally-binding EA Certificate conditions, the EAO concludes that Ajax would not result in significant adverse effects to social and economic valued components.

Sections 11 through 18 of the joint Report provide the EAO's detailed assessment of social and economic Project effects.

Grasslands, Wildlife and Ecosystems

Much of Ajax's proposed 1,700 ha footprint and the surrounding area consists of a variety of grassland types including riparian and grassland areas that support plant and animal species at risk, ranching and forage, and use by Indigenous groups. Grasslands are fragile ecosystems that are one of the rarest habitat classes in BC and provide habitat for over 30% of BC's listed and at risk plant species. The Ajax footprint and local study area also contain priority riparian areas that provide important features for wildlife such as water-associated migratory birds and plant communities, and habitat for rare plants and for wildlife, including at-risk and migratory birds and amphibians.

For working group members, Indigenous groups, and the public, the impacts of Ajax on rare ecosystems and wildlife species at risk was of notable concern during the EA.

Ecosystems on the proposed mine site have been previously impacted, in some areas heavily, by past disturbance including ranching, mining and the spread of invasive species. KAM stated that the development of Ajax would result in the loss of approximately 1,000 ha of primarily native bunchgrass grassland on the mine site. A further 775 ha in the local study area may experience habitat alteration or deterioration as a result of construction activities and linear feature maintenance, and increased invasive species could affect up to 414 ha of grasslands in the local study area. KAM committed to invasive species management and a number of other environmental management plans to reduce terrestrial and wildlife effects. At closure, KAM would be required by the *Mines Act* to revegetate and reclaim the mine site.

During the EA, the working group and SSN raised concerns about the adequacy in baseline data on plant and animal species at risk, and expressed reservations that KAM's proposed measures to avoid and reduce impacts would be successful. Wildlife species of particular concern were those that have specific habitat needs in grassland and wetland areas and that are known to have low resilience to disturbance. Ajax would remove 39 ha wetland habitat that is important for rare and endangered amphibians and migratory birds. High value grassland habitat for red-listed American badgers would be permanently lost and could result in habitat displacement, and active lek (mating) sites for the endangered sharp-tailed grouse would be lost.

During the EA, KAM provided more detailed information regarding their measures to enhance baseline data, avoid wildlife impacts wherever feasible, and mitigate effects through off-mine-site habitat restoration. KAM proposed to address habitat loss and alternation effects to grasslands and dependent species through implementing a grassland restoration program on 2,000 ha of KAM-owned lands that are currently degraded and in the vicinity of Ajax. This program proposes to enhance conditions to support improved grassland habitat and use by species that would be affected by Ajax. Another key mitigation proposed by KAM is a wetland offsetting program, to create replacement wetland areas for those lost during the Project. Additional mitigations, included as a part of an overall wildlife management plan, are the proposed creation of replacement sharp-tailed grouse leks, and support for regional badger recovery strategies that could include measures to reduce the risks of habitat fragmentation and the associated road mortality that threatens the survival of the regional badger population. The EAO and Agency recognize that there remains uncertainty about the amount of time required and the likelihood and extent of habitat restoration and offsetting measures becoming ecologically effective.

To support the management of effects to wildlife and address uncertainties raised during the review regarding the limitations of data on species at risk, the EAO is proposing EA Certificate conditions that would require:

- Conducting additional pre-construction surveys for various species prior to ground disturbance;
- Implementing wildlife management and monitoring, to ensure comprehensive measures to avoid and reduce impacts to wildlife, particularly vulnerable species;
- Implementing vegetation management and monitoring, to ensure comprehensive measures to avoid and reduce impacts to vegetation, particularly rare plants;

- Developing a grassland restoration plan within an nearby 2000 ha area, to enhance habitat for wildlife and vegetation species for the duration of the mine life and beyond, until such time as reclamation efforts are deemed ecologically functional; and
- Developing a wetland offsetting plan, to ensure no net loss of wetland function.

In consideration of the assessment results and the legally-binding EA Certificate conditions, the EAO and Agency determined that there would be residual effects to grasslands and wetlands, and wildlife species that use these ecosystems at key life stages, and concluded that these impacts would not result in significant adverse effects to wildlife and vegetation valued components in the region.

Tailings Storage Facility Risk

During the EA, several concerns were raised by the public, SSN, and the City of Kamloops regarding the potential risk of failure of the tailings storage facility and associated environmental and safety impacts. This included concerns that a complete failure of the north or east tailings embankments would cause widespread damage of property, impacts to waterways including the Thompson River, and major loss of life in Kamloops. Commenters stated that the possibility of such a failure, however unlikely, posed too great a risk to area residents, ecosystems, and ways of life.

During the pre-Application phase (in March 2015), in response to the Mount Polley Independent Expert Engineering Investigation and Review Panel (Independent Panel) report, the EAO directed KAM to complete additional alternatives assessment for any proposed conventional tailings storage facility for inclusion in their Application.

KAM completed this alternatives assessment, and also convened an independent tailings review board to review the Ajax tailings storage design, its related geotechnical data, and KAM's tailings storage facility alternatives assessment. KAM's review board included Dr. Dirk van Zyl, member of the Mount Polley Independent Panel. Dr. van Zyl provided a letter on behalf of the KAM review board indicating that the Ajax tailings storage facility is an appropriate design. The Agency and EAO reviewed KAM's alternatives assessment for the tailings storage facility in consideration of the recommendations of the Mt. Polley Independent Panel report, as well as a subsequent letter from Dr. van Zyl to the Minister of Energy and Mines that specified further recommendations related to the use of best available technology and site-specific considerations.

During Application Review, the working group also reviewed KAM's proposed tailings storage facility design. MEMPR indicated that it did not have concerns about the safety of the design of the tailings storage facility. SSN's geotechnical expert indicated that the tailings storage facility design was safe.

The EAO notes that updates made on July 20, 2016 to the tailings storage facility requirements of the *Health, Safety and Reclamation Code for Mines in British Columbia* (Mining Code), which include design and operations requirements for water management and seismic issues, set a high standard of safety for the tailings storage facility. Ajax would be required to be designed, operated, and monitored for compliance consistent with the new regime.

6 INDIGENOUS CONSULTATION

The Crown is legally obligated to consult on and, where necessary, accommodate asserted or established Aboriginal rights and title (Aboriginal Interests). The EAO conducted an analysis and reached conclusions regarding the depth of consultation owed to each Indigenous group and the seriousness of potential Ajax-related impacts on the Aboriginal Interests of each Indigenous group. The EAO also assigned certain responsibilities to KAM to consult with Indigenous groups about the potential impacts of Ajax on Aboriginal Interests. KAM carried out their consultation responsibilities over the course of the EA, and provided reports to the EAO regarding the key issues and status of resolution.

The Joint Assessment Report (Part C – Consultation with Indigenous Groups) details the consultation that took place during the EA process, the issues that Indigenous groups raised, the relevant mitigation and accommodation measures, and the EAO and Agency's shared assessment of the seriousness of the potential impacts of Ajax on each Indigenous group's Aboriginal Interests.

The EAO and Agency provided capacity funding to Indigenous groups to participate in the EA process. KAM provided additional capacity funding to Indigenous groups, the majority of which was provided to SSN for participation in the EA as well as support for the SSN Assessment Process.

Stk'emlupsemc te Secwépemc Nation

As described above, Ajax would be located in an area SSN calls *Pípsell* (Jacko Lake and the surrounding area) and has identified as being of very high cultural and spiritual importance. On September 21, 2015, SSN filed a claim for Aboriginal rights and title in the BC Supreme Court over an area described as the SSN territory, which includes *Pípsell* and the Ajax footprint. The case is still before the court.

The EAO began consulting SSN in 2011 when the EA was initiated. Due to the EAO's assessment that SSN has a strong *prima facie* claim to Aboriginal rights in the Project area, the EAO consulted in a manner consistent with the deep end of the Haida spectrum, including opportunities for SSN to participate in the working group, to review and comment on draft EA documents, and to engage in government-to-government consultation regarding Ajax. Subsequent to the Supreme Court of Canada *Tsilhqot'in Nation v. British Columbia* decision, the EAO revised SSN's *prima facie* claim to Aboriginal title in the Project area from weak-to-moderate to strong. Consultation between the EAO and SSN resulted in changes to the standard EA process, including requirements that KAM conduct assessments of two additional valued components requested by SSN (Aboriginal economies, and the current use of lands and resources for traditional purposes) and additional information requirements relating to potential impacts on SSN governance.

Following the EAO's revised preliminary strength of claim assessment, the Province initiated a multi-agency government-to-government discussion table with SSN. In May 2015, SSN and the EAO also commenced co-development of the EA Collaboration Plan with the shared understanding that it would support completion of the EA within the provincial regulatory timelines and could modify the EA process to include opportunities for SSN

community participation and consideration of new and expanded assessment methods, valued components, and issue resolution processes.

During the EA, SSN shared their views that the provincial and federal regulatory processes were not adequate to address their interests relative to the Ajax mine. In July 2015, SSN Joint Council formally initiated development of a community-based process called the SSN Assessment Process. SSN communicated that their process was designed to be consistent with SSN laws, governance, traditions, and customs and would take into consideration both traditional knowledge and western science. The EAO and SSN therefore moved to adapt the draft EA Collaboration Plan to ensure there were multiple collaboration points between the SSN Assessment Process and provincial EA process.

As part of their own process, SSN considered the valued components that were part of the coordinated federal-provincial EA, and also included issues of specific importance to SSN that are outside the scope of provincial and federal EA legislation, such as SSN's analysis of the economic benefits of Ajax for SSN community members. The SSN Assessment Process included the establishment of a 46-member review panel consisting of elected Chiefs and Councillors and community members including elders, youth, and representatives of the families of SSN. Panel members were tasked with reviewing information presented by SSN traditional knowledge keepers, SSN-hired technical experts, KAM, and the provincial and federal government, and with making recommendations to SSN Joint Council regarding how to proceed in relation to Ajax.

The EA Collaboration Plan was largely completed by the start of the formal Application Review phase and was implemented in-principle from the time early discussions were initiated, in advance of the formal signing of the plan and the related Government to Government Framework Agreement by Provincial Ministers and SSN Joint Chiefs in September 2016. These agreements describe that the purpose of the EA Collaboration plan is to support informed decision making by both parties and to ensure that SSN has direct input into the provincial decision-making process regarding Ajax and that SSN's input is adequately considered.

Overall, the EA Collaboration Plan developed by the EAO and SSN supports an enhanced collaborative approach that included EA timeline changes to accommodate SSN, additional rounds of comments and responses in the EA resulting directly from the SSN Assessment Process, over 50 meetings with SSN (in-person, by videoconference, and by telephone), provincial participation in SSN Assessment Process events, and a commitment to include and consider the results of the SSN Assessment Process in the Joint Assessment Report.

In February 2017 and in accordance with the Ajax Mine Government to Government Framework Agreement, the Province tabled an accommodation offer to SSN that proposed the Province would::

- Work with SSN to develop initiatives to address potential social and cultural residual effects of Ajax;
- Provide a financial contribution of \$2 million to SSN, to increase SSN's capacity to participate in a socio-cultural working group with the Province;
- Explore ways to address interests related to economic development, including through a transfer to SSN of Crown land(s) with a value of up to \$8 million and through resource revenue sharing of 37.5% of the *Mineral*

Tax Act revenues collected by the Province on Ajax, in accordance with the terms of an Economic Community Development Agreement;

- Undertake a pilot collaborative stewardship initiative with SSN in the Thompson River watershed and provide \$100,000 in funding for the first year; and
- Explore opportunities for collaboration with SSN for enhanced management and the conservation of sensitive areas.

The EAO understands that KAM has also proposed a mine development agreement that includes a direct accommodation payment and potential benefits to SSN members from wages and contracting. SSN assessed KAM's offer, and did not accept it. More information on SSN's analysis is reported in the SSN Decision Package.

On March 4, 2017, SSN Joint Council concluded the decision phase of the SSN Assessment Process, accepted the recommendations of their community panel, and announced an end land-use objective for *Pípsell* that is incompatible with the mine. At this time, the provincial (and federal) EAs were ongoing and were actively receiving and considering further information regarding the effects of Ajax and potential mitigations.

In stating that they did not give free, prior, and informed consent for the construction of the mine, SSN concluded that Ajax would result in significant environmental effects and irreversible changes to the area. SSN communicated their conclusions that Ajax would pose serious risks to the environment, would sever SSN's physical and spiritual connection to *Pípsell*, would have impacts on the intergenerational transfer of knowledge and the health of the SSN communities, and would cause serious harm to SSN's Aboriginal Interests. SSN also communicated that the accommodations proposed by the Province and by KAM were, in their opinion, not sufficient to justify the many impacts and risks identified through their Assessment Process.

Following SSN's decision announcement, the EAO and SSN have continued to work together on the completion of the EA with some adjustments to the timing of the activities set out in the EA Collaboration Plan. SSN provided their Decision Package to the EAO and Agency, and SSN's Assessment Process results been reflected and carefully considered by the EAO and the Agency in the Joint Assessment Report. The EAO notes that the proposed EA Certificate conditions, should the Project proceed, would require that that KAM consult Indigenous groups on the development of all management plans that relate to potential impacts on their Aboriginal Interests, and would also require that KAM develop an SSN access management plan that provides safe access to the Project area (subject to mine safety and operational protocols) for SSN members to exercise traditional harvesting practices and ceremonial practices. The EAO also proposes a condition requiring that KAM develop a plan, in consultation with SSN, to engage SSN in environmental monitoring at all stages of the Project.

In the Joint Report, the EAO and Agency completed an assessment of the potential impacts of Ajax on SSN's Aboriginal rights and title. The analysis considered a number of factors, including the cultural and spiritual importance of the *Pípsell* and the level of uncertainty regarding the effectiveness of mine reclamation efforts to address the impacts to SSN's Aboriginal Interests at *Pípsell*. The EAO and Agency concluded that the Project would result in:

- Serious impacts on SSN's asserted Aboriginal rights related to the practice of cultural and spiritual customs, ceremonies, and traditions at or near *Pípsell*;

- Moderate-to-serious impacts on SSN's asserted rights to fish and to harvest plants;
- Moderate impacts on SSN's asserted right to hunt and trap; and
- Negligible impacts on SSN's asserted right to mine metal.

Regarding potential impacts to SSN's asserted Aboriginal title, the EAO and Agency are of the view that the development of Ajax would result in adverse impacts. The EAO and Agency also recognize that SSN has brought a claim before the courts seeking a declaration of Aboriginal title over an area that is largely held as private fee simple land and includes the mine site, and are of the view that it is unclear how a court will address the current private land ownership in relation to SSN's claim seeking a declaration of Aboriginal title to this area. It is unclear how a court will address the current private land ownership in relation to SSN's claim seeking a declaration of Aboriginal title to this area. Consequently, there is uncertainty in estimating the level of seriousness of impacts on SSN's future ability to apply its traditional governance in this area, to use the area for traditional purposes, and to obtain economic benefits from the area. Regardless of this uncertainty, the Agency and EAO consider that the mitigation and accommodation measures identified to date, including proposals made by both KAM and the Province, may help to address the residual impacts of Ajax on aspects of SSN's asserted Aboriginal title.

SSN has communicated that they do not agree with the conclusions of the Joint Assessment Report regarding residual effects nor with the conclusions about impacts to SSN's Aboriginal Interests, and have stated that the proposed EA conditions to mitigate Project-related effects do not change their opposition to Ajax.

The SSN decision materials are, as per the EAO's commitment in the EA Collaboration Plan, included in the referral package for Ministers.

Ashcroft Indian Band, Lower Nicola Indian Band, and Whispering Pines/Clinton Indian Band

The EAO consulted Ashcroft Indian Band and Lower Nicola Indian Band at the middle of the *Haida* spectrum. They were invited to participate as members of the working group, to comment on EA documents, and to meet directly with the EAO to discuss issues and concerns. They were also invited to include submission in this referral package for Ministers.

The EAO consulted the Whispering Pines/Clinton Indian Band at a notification level.

The Ashcroft Indian Band participated in the early stages of the EA, and raised issues for consideration in the assessment. On October 24, 2014, Ashcroft Indian Band provided a letter to the EAO and Agency stating their support for Ajax.

Lower Nicola Indian Band participated in working group activities and met with the EAO in the early stages of the EA. During the EA, Lower Nicola Indian Band provided technical comments that primarily focused on impacts to wildlife and ecological health. The EAO is proposing conditions that would serve to help address Lower Nicola Indian Band's concerns regarding the environmental effects of Ajax. The EAO is also proposing a condition that would include the requirement for KAM to consult with Indigenous groups on the development and implementation of management plans that are related to Aboriginal Interests.

The EAO, together with the Agency, concluded that the seriousness of the potential impacts of Ajax on the respective Aboriginal Interests of Ashcroft Indian Band, Lower Nicola Indian Band, and Whispering Pines/Clinton Indian Band would not exceed negligible-to-minor.

7 LOCAL GOVERNMENT ENGAGEMENT

The City of Kamloops and the Thompson Nicola Regional District were invited to participate in the working group, which they did for the duration of the EA.

The Thompson Nicola Regional District raised issues through that process including information related to the community land use planning, and requirements of any application to the Agricultural Land Commission. The City of Kamloops participated throughout the pre-Application phase and, for the Application review phase, they also retained SLR Consulting (with substantial financial support from KAM) to conduct a technical peer review of the Application and to participate in the working group on behalf of the City.

In addition to the City of Kamloops' participation through the working group, the City Council undertook its own series of public engagement activities during the Application Review phase, including special council meetings and public presentations. The EAO and the City of Kamloops staff maintained regular communication to ensure that public consultation undertaken through their respective processes was coordinated to the extent necessary.

In addition to providing input through the working group, the City Council highlighted several areas of concern in their July 17, 2017 vote to oppose Ajax, which included:

- Air quality effects, mitigation effectiveness and impacts to human health;
- Increased pressure on municipal road infrastructure and other services, affordable housing demand, and traffic volumes;
- Uncertainty regarding the economic benefit impacts to the City;
- Effects on property values, in consideration of changes to air quality, noise and dark sky;
- Impacts to availability of tourist accommodation, with consequent economic impacts to the City;
- Uncertainties associated with the implementation of monitoring and management actions to address social and economic effects;
- Pressures on health care services and availability of general health practitioners; and
- Risk of accidents and malfunctions.

The EAO has considered the substantial technical input provided by the City of Kamloops and the Thompson Nicola Regional District during the EA. This information and key concerns are discussed in more detail in the relevant sections of the Joint Assessment Report. Key issues raised by local governments helped inform the EAO's assessment of Ajax, including requests for supplemental technical information during the EA, the completion of the Joint Assessment Report, and the development of the EAO's proposed EA Certificate conditions.

8 PUBLIC CONSULTATION

Public consultation during the EA is intended to provide multiple opportunities for the public to understand the Project and provide input to inform the EA. Public consultation was undertaken by the EAO, separately and together with the Agency. High levels of public interest in the Ajax EA resulted in a public consultation approach that exceeded standard regulatory requirements under the *Environmental Assessment Act*. The approach included five public comment periods (rather than the usual two for an EA), multiple open houses, question and answer sessions and public presentations by the EAO, and direct engagement with stakeholder groups.

The EAO required KAM to engage with the general public and affected communities, and KAM undertook additional activities beyond those required by government. As well, the City of Kamloops conducted direct public engagement related to Ajax over the course of the EA, particularly during the Application Review phase. An overview of public consultation is included in Section 1.2.7 of the Joint Assessment Report, and key activities of the EAO are summarized below.

The EAO sought public feedback at early stages of the EA, and during the Application Review. Together with the Agency, EAO hosted five public comment periods:

- A 33-day public comment period on KAM's project description between June 8, 2011 and July 11, 2011;
- A 61-day public comment period on the draft Application Information Requirements between January 11, 2012 and March 12, 2012;
- A 30-day public comment period from November 18, 2014 to December 18, 2014 on the proposed revisions to the Application Information Requirements that resulted from the design changes;
- A 75-day public comment period (the longest possible time by regulation) on the proponent's Application between January 26 and April 11, 2016; and
- A 63-day public comment period on the Joint Assessment Report and the proposed provincial EA Certificate conditions (*currently in progress*).

With the exception of the final comment period, the EAO and Agency hosted open houses for each of these public comments period. Open houses involved a variety of activities, including poster boards, and proponent presentations. To increase public understanding and to facilitate the provision of public comments, the EAO and Agency held six one-hour sessions on EA during the 2014 public comment period, along with question-and-answer sessions. Attendance at each of the open houses ranged from 300 to 1,200 people per day. Following each public comment period, the EAO required KAM to provide responses to key public issues and a report on how KAM was addressing public concerns related to their Application. The EAO also required KAM to respond directly to issues raised by community stakeholder organizations.

In addition to general public consultation activities and comment periods, the EAO also created a Community Advisory Group in 2012, composed of a variety of stakeholder organizations that had demonstrated an interest in the effects of Ajax. Over the course of the EA, the Community Advisory Group met formally with the EAO on 16 occasions between 2012 and 2016, and provided direct review and comment on project-related documents

beyond those opportunities available to the general public. KAM developed public consultation plans and reports, which were provided to the Community Advisory Group for review and comment prior to being finalized. There were substantial opportunities for involvement in the EA and input from the Community Advisory Group. The Community Advisory Group feedback resulted in some procedural changes to the public consultation process, modifications to the EAO approach to public engagement and open houses, requirements for plain language summaries of the Application, as well as some changes to technical aspects of the EA including requirements for a multiple-effects assessment at Jacko Lake. However, the EAO recognizes that some member organizations of the Community Advisory Group hold strong views that the process has not adequately reflected their interests and has not addressed their issues.

Issues raised by the public during the EA were extensive and broad-ranging. The predominant issues raised by commenters were:

- Project location/siting – Concerns with the proximity of the Project to residential neighbourhoods;
- Public safety – Concerns about accidents and malfunctions and risks to public safety, including a potential breach of the tailings storage facility;
- Air quality – Concerns about emissions from the Project, KAM's ability to sufficiently mitigate dust, and potential effects on the local airshed and human health;
- Water– Concerns about mine related emission impacts on surface and groundwater quality in consideration of human health, livestock and wildlife health, and the Project's water withdrawal from Kamloops Lake;
- Wildlife and grasslands – Concerns that the Project would alter or destroy sensitive grassland habitat and rare plant species, and adversely affect wildlife in the vicinity of the Project;
- Community health and wellbeing – Concerns that the Project would increase pressure on the health care services and that health care providers would leave Kamloops;
- Economic impacts, particularly property values, tourism and recreation – Concerns that potential impact from noise, vibration, dust, and impacts to visual quality (or the perception of impacts) would lower property values in the neighbourhoods near the mine site; Concerns that the presence of an industrial facility above Kamloops would have negative effects on tourism, recreation and the ability of the City to attract events under the tournament capital brand;
- Angling on Jacko Lake – Concerns that noise, vibration, visual quality impacts and access restrictions would substantially alter the Jacko Lake angling experience;
- Regulatory issues (e.g., coordination of monitoring and enforcement, regulatory oversight for mining); and
- EA process (e.g., scoping and public consultation).

Through the course of the EA, KAM submitted multiple public consultation reports that were required by the EAO describing the progress in implementing its public consultation plan and that provided substantive responses to key issues raised by the public.

The EAO notes that many topics raised by the public were also raised by the working group and Indigenous groups, and are therefore discussed further in more detail in the relevant sections of the Joint Assessment Report. Key issues raised by the public helped inform the EAO's assessment of Ajax, including requests for supplemental information

during the EA, the completion of the Joint Assessment Report, and the development of the EAO's proposed EA Certificate conditions.

9 ADDITIONAL CONSIDERATIONS

Section 17 of the *Environmental Assessment Act* sets out that, in making a decision on an application for an EA Certificate, the ministers must consider the assessment report and any recommendations accompanying the assessment report, and that ministers may consider any other matters that they consider relevant to the public interest. Additionally, as described in *Haida Nation v. British Columbia (Minister of Forests)*, 2004 SCC 73, the Crown must balance the potential impacts of the Project on Aboriginal Interests with other societal interests, which can include the potential social, environmental and economic costs and benefits of the Project. The following information regarding the potential economic and social contributions of Ajax was presented in KAM's Application and/or during the review phase.

Economic and Social Contributions

Ajax would generate economic benefits over the life of the project, predominantly in the construction and operations phases. While the *Environmental Assessment Act* is focusses on potential adverse effects, KAM provided information on the potential economic benefits of Ajax, including direct expenditures and employment as well as indirect (supply chain) and induced (spending by workers) benefits.

KAM estimated that total capital construction costs would be \$1.54 billion, while expenditures during 23 years of operations would average \$299 million per year. KAM estimated that during construction Ajax would contribute \$873 million per year toward BC's Gross Domestic Product (GDP) and an additional \$409 million in the rest of Canada.

KAM predicted that Ajax would generate an average of 1,290 direct full-time equivalent jobs per year during the 2.5 years of construction. During operations, KAM predicts that Ajax would directly employ approximately 450 full-time equivalent positions in BC. Direct employment earnings in Kamloops were estimated to range from \$183 to \$242 million during construction and would average \$53 million annually during operations.

KAM estimated overall tax revenue to be \$354 million during the construction phase, with federal tax revenue of \$162 million, provincial revenue of \$115 million, and local/regional government revenue of \$25 million. Tax revenue includes taxes paid directly by KAM (e.g., corporate taxes, mineral taxes) in addition to the revenue from consumption and personal income taxes.

During the EA, some members of the public, the City of Kamloops, and SSN expressed reservations or disagreement with the economic impact estimates of Ajax and the modelling used for projections. The EAO notes that Statistics Canada's Input-Output model is an industry-accepted standard for estimating economic impacts for the purposes of EA.

KAM has also committed to improve amenities at Jacko Lake including a new boat launch, and to establish a community benefits agreement with the City.

Benefits to Affected Indigenous Communities

Ashcroft Indian Band wrote a letter to the Agency and EAO on October 24, 2014, which stated that they support Ajax and that they had been adequately consulted and accommodated with respect to potential impacts on their Aboriginal Interests. KAM notified the EAO that they have a confidential benefits agreement in place with the band.

KAM informed the EAO that they are in discussions with Lower Nicola Indian Band regarding a project agreement, but that no agreement has been reached at this time.

As described above, KAM has proposed a mine development agreement with SSN and, although SSN has not accepted the agreement, KAM has stated that they remain committed to implementing the project benefit agreement should Ajax proceed. The Province has indicated that it remains committed to fulfilling the commitments in the accommodation offer to SSN (described above), should Ajax be issued an EA Certificate.

Benefits to the City of Kamloops

During the EA, KAM and the City of Kamloops engaged in bilateral discussions about a community benefit agreement that could help mitigate for impacts of the Project on the City's interests.

The EAO does not require benefits agreements and is not typically aware of the contents of benefits agreements unless and until such time as they are completed and publicly provided to the EAO. KAM provided the EAO with a summary of the key topics that were being discussed as part of a draft framework for the community benefits agreement, stating that these items were subject to change and that no agreement had been reached. The topic areas included:

- Operating cost recovery associated with the municipal infrastructure and services, including long-term monitoring programs;
- Industrial tax offset;
- Community benefits, including affordable housing, amenity funds, communications, community social services, and independent monitoring;
- Local employment and business opportunities, policies, education and training; and
- Routine reporting regarding costs and performance.

The EAO is aware that, on July 17, 2017, while the City of Kamloops council voted to oppose the Ajax project, Council also voted to accept the community benefits agreement from KAM. The agreement would provide \$3.8 million per year to the City of Kamloops.

10 CONCLUSIONS

Based on:

- Information contained in KAM's Application and the supplemental information provided during Application Review;
- The Crown's efforts at consultation with Indigenous groups, federal, provincial and local government agencies, and the public, and KAM's commitment to ongoing consultation;
- Comments on Ajax made by Indigenous groups, federal, provincial and local government agencies, as members of EAO's working group, and KAM's and the EAO's responses to these comments;
- Comments on Ajax received during the public comment period, and KAM's responses to these comments;
- Issues raised by Indigenous groups regarding potential impacts of Ajax, KAM's responses and best efforts to address these issues and commitments made by the Province;
- The design of Ajax as specified in the proposed Schedule A (Certified Project Description) of the EA Certificate, if issued, to be implemented by KAM during all phases of Ajax; and
- Mitigation measures identified as proposed conditions in Schedule B (Table of Conditions) of the EA Certificate, if issued, to be undertaken by KAM during all phases of Ajax.

The EAO is of the view that:

- The EA process has adequately identified and assessed the potential adverse environmental, economic, social, heritage and health effects of Ajax, having regard to the proposed conditions set out in Schedule B (Table of Conditions) to the EA Certificate, if issued;
- Consultation with Indigenous groups, federal, provincial and local government agencies, and the public have been adequately carried out and that efforts to consult with Indigenous groups will continue on an ongoing basis;
- Issues identified by Indigenous groups, federal, provincial and local government agencies, and the public, which were within the scope of the EA, were adequately addressed during the review of the Application;
- Ajax would result in significant adverse residual and cumulative effects to Indigenous heritage and to the current use of lands and resources for traditional purposes;
- Ajax would also significantly alter the angling experience at Jacko Lake, although would not have a significant adverse effect on local and regional recreational access and opportunities;
- Ajax would result in adverse residual or cumulative effects to other environmental, economic, social, heritage and health valued components, but with the application of mitigation measures and legally-binding conditions, these effects would not be significant;

- The provincial Crown has fulfilled its obligations for consultation to SSN, Lower Nicola Indian Band, Ashcroft Indian Band, and Whispering Pines/Clinton Indian Band relating to the assessment of adverse impacts to asserted Aboriginal rights and title;
- The potential for adverse impacts to the asserted Aboriginal rights and title of Indigenous groups have been avoided, minimized or otherwise accommodated to an acceptable level for Lower Nicola Indian Band, Ashcroft Indian Band, and Whispering Pines/Clinton Indian Band; and
- In consideration of the results of the EA, information provided by SSN regarding their Aboriginal Interests, SSN's views and position in relation to proposed accommodation measures, SSN's stated opposition to Ajax, as well as legal uncertainties related to SSN's claim for Aboriginal title filed with the BC Supreme Court, and associated uncertainties in the assessment of the seriousness of impacts to certain aspects of SSN Aboriginal Interests due to the particular location and nature of this proposed project, the EAO is unable to appropriately provide an assessment of the adequacy of accommodation for SSN.