

GLOSSARY

Terminology used in this Application for an Environmental Assessment Certificate/Environmental Impact Statement is defined where it is first used. The following list will assist readers who may choose to review only portions of the document.

Ambient noise	The noise associated with a given environment. Typically a composite of sounds from many sources located both near and far where no particular sound is dominant.
A weighting	A standard weighting of the audible frequencies designed to reflect the response of the human ear to noise.
Acid rock drainage	Acid rock drainage occurs when minerals containing sulphide and elemental sulphur are exposed to oxygen and water, thus oxidizing and increasing their acidity and that of the receiving water body or drainage, depending on conditions (Price and Errington 1998).
Air quality standards/objectives	Objectives for maximum concentrations air contaminants in the atmosphere developed to ensure long-term protection of public health and the environment.
Ambient air quality	The quality of outdoor air in our surrounding environment. It is typically measured near ground level, away from direct sources of pollution.
Ambient noise	The noise associated with a given environment. Typically a composite of sounds from many sources located both near and far where no particular sound is dominant.
Ammonium nitrate and fuel oil (ANFO)	A mixture of ammonium nitrate and fuel oil used extensively as a blasting agent in mining and quarrying.
Anemometer	Instrument for measuring air velocity.
Application for an Environmental Assessment Certificate/ Environmental Impact Statement (Application/EIS)	Application for an Environmental Assessment Certificate pursuant to BC's <i>Environmental Assessment Act</i> (2002) and Environmental Impact Statement pursuant to the Canadian <i>Environmental Assessment Act</i> (1992).

Application Information Requirements (AIR)	A document which identifies the information that is needed to complete the provincial and/or federal environmental assessment processes. The document outlines the information that will be included in the Application for an Environmental Assessment Certificate/Environmental Impact Statement.
Archaeological Chance Find Procedure	Document detailing the steps that must be followed if an archaeological site is uncovered during ground altering activities.
Archaeological Impact Assessment (AIA)	An assessment carried out under a <i>Heritage Conservation Act (1996)</i> Heritage Inspection Permit to determine the impact of a development on archaeological sites.
Archaeological Overview Assessment (AOA)	An assessment intended to identify and assess archaeological resource potential or sensitivity within a proposed study area. Recommendations concerning the appropriate methodology and scope of work for subsequent inventory and/or impact assessment studies are also commonly included.
Archaeological site	Location where there is evidence of human activity. The <i>Heritage Conservation Act (1996)</i> automatically protects all archaeological sites, whether on provincial Crown or private land, that predate AD 1846. Burial sites and rock art sites are protected regardless of age.
Archaeology Branch	The Archaeology Branch of the British Columbia Ministry of Forests, Lands and Natural Resource Operations that administers the <i>Heritage Conservation Act (1996)</i> .
Baghouse	Air pollution control device that removed dry particulate from a gas stream of air or combustion gas using fabric filters.
Baseflow	The component of flow discharge that is attributed to soil moisture and groundwater drainage into a channel.
Baseline condition	Pre-disturbance or pre-construction environmental setting; dataset used for comparison to assess changes in the environment resulting from Project activities.
Baseline studies	Scientific investigations that determine the present state of an area and establish the basic reference necessary for further studies.
Bioaccumulation factor	Ratio of tissue chemical residue to chemical in concentration in an external environmental phase (i.e., water, sediment, vegetation, or food).
Bioavailability	The portion of the total quantity or concentration of a chemical in the environment or a portion of it that is potentially available for biological action, such as uptake by an aquatic or terrestrial organism (Rand 1995).

Borden Number	Each archaeological site in Canada is issued a unique, site-specific alphanumeric identifier (Borden Number) using the Borden System. Canada is divided into a series Borden Blocks each roughly 16 by 16 km with a four letter designation. The first two letters, one capital and one lowercase letter, indicate the north-south location of the Borden Block, while the second two letters indicate the east-west location (i.e., AbCd). The four letter alpha segment is then followed by a number (i.e., AbCd-10) which is issued sequentially as sites are found within a Borden Block.
Canadian Council of Ministers of the Environment (CCME)	The CCME is comprised of the environment ministers from the federal, provincial, and territorial governments. These 14 ministers normally meet at least once a year to discuss national environmental priorities and determine work to be carried out under the auspices of the CCME. The Council seeks to achieve positive environmental results, focusing on issues that are national in scope and require collective attention by a number of governments.
Carbon dioxide (CO₂)	A colourless, odorless gas emitted from combustion and respiration processes. It is an important greenhouse gas with a global warming potential value of one.
Carbon monoxide (CO)	A colourless, odorless gas emitted from combustion processes. It can cause harmful health effects by reducing oxygen delivery to the body's organs and tissues.
Catchment	An extent or area of land where surface water from rain and melting snow or ice converges to a single point.
Climate	Average weather conditions over a long time period, usually exclusive to one region or area. Climate depicts weather patterns over years, decades, or centuries, whereas meteorology measures day-to-day activities.
Concentrate	The product of ore processing.
Confidence	Confidence, which can also be thought of as scientific uncertainty, is a measure of how well residual effects are understood, which includes a consideration of the acceptability of the data inputs and analytical methods used to predict and assess Project effects.
Contact water	Water on the Project Site that is affected by Project components or activities.
Contaminant of potential concern (COPC)	Chemical substances identified through a screening process that may have the potential to cause adverse effects in receptors.
Criteria air contaminants (CAC)	A group of pollutants which cause air issues such as smog and acid rain. CACs include the following pollutants; sulphur oxides (SO _x), nitrogen oxides (NO _x), various size fractions of particulate matter (PM), volatile organic compounds (VOC), carbon monoxide (CO), and ammonia (NH ₃).

Cumulative effect	An effect that arises as a result of an effect from the Project interacting with residual effect(s) from another activity to create a cumulative effect(s).
Decibel (dB)	The units of sound level and noise exposure measurement where a step of 10 dB is a ten-fold increase in intensity or sound energy and actually sounds a little more than twice as loud.
Decommissioning	The process of removing facilities from service and the dismantling of buildings.
Dimictic	Describes a lake that is stratified for most of the annual cycle and mixes twice per year in the spring and fall.
Dioxins	Polychlorinated dibenzodioxins (PCDDs), or simply dioxins, are a group of polyhalogenated compounds that can act as environmental pollutants. They are commonly referred to as dioxins for simplicity in scientific publications because every PCDD molecule contains a dioxin skeletal structure.
EA Working Group	A forum for discussion and resolution of technical issues associated with the proposed Project, as well as providing technical advice to the BC EAO and CEA Agency, which remain ultimately responsible for determining significance. Comprises representatives of provincial, federal, and local government, and Aboriginal groups.
Effect	The specific consequence (to a resource/receptor) arising from an alteration of existing conditions caused by the Project.
Emissions	Solid or gaseous pollutants released from point sources or fugitive sources, including greenhouse gas.
Environmental assessment (EA) process	The process of assessing the environmental, economic, social, heritage, and health effects of a proposed development.
Eutrophic	A body of water with high abundances of primary producers and high concentrations of nutrients (Wetzel 2001).
Explosive	Any rapidly combustive or expanding substance, the energy release from which can be used to break rock.
Freshet	In channels, the relatively high annual peak water discharge period resulting from spring/summer meltwater runoff of the snowpack accumulated over the winter.
Fugitive dust	Particulate matter, often sand or mineral dust, released to the atmosphere by mechanical disruption or by wind scouring.
Furans	Polychlorinated dibenzofurans (PCDFs), or simply furans, are a group of halogenated organic compounds which are toxic environmental pollutants.

Geographic Information System (GIS)	Mapping tool used to depict large amounts of information in a spatial context.
Greenhouse gases (GHGs)	Gases that trap the sun's heat, creating a greenhouse effect that keeps the earth warm and sustains life. However, as GHGs increase in the atmosphere, more heat is trapped, which causes global climate change. GHGs include carbon dioxide (CO ₂), methane (CH ₄), nitrous oxide (N ₂ O), sulphur hexafluoride (SF ₆), water vapour (H ₂ O), ozone (O ₃), water vapor, hydrofluorocarbons, and perfluorocarbons.
Groundwater	Water stored in soil or rock.
Habitat	Land and water surface used by wildlife. May include biotic and abiotic aspects such as vegetation, exposed bedrock, water, and topography.
Hazard Quotient	The ratio of a predicted environmental media contaminant concentration divided by a guideline concentration applicable to that contaminant.
<i>Heritage Conservation Act (HCA; 1996)</i>	The provincial law that authorizes and mandates British Columbia to manage heritage resources.
Human health risk assessment	A process used to estimate the nature and probability of adverse health effects in humans exposed to chemicals in environmental media, now or in the future.
Hydrocarbon	A class of compounds containing hydrogen and carbon formed by the decomposition of plant and animal remains, including coal, mineral oil, petroleum, natural gas, paraffin, fossil resins, and solid bitumens occurring in rocks (MBA Training Company n.d.).
Hydrology	The movement and distribution of water.
Impact	Any alteration of existing conditions, adverse or beneficial, caused directly or indirectly by the Project. An impact may or may not lead to one or more effects.
LA90	The percentile sound pressure level exceeded for 90% of the measurement period with 'A' frequency weighting calculated by statistical analysis.
LAeq, T	Equivalent continuous sound pressure level with 'A' frequency weighting - The value of the sound pressure level of a continuous steady noise that, a measurement interval of time (t), has the same mean square sound pressure as the sound under consideration whose level varies with time.
Limnology	The description and study of freshwater systems, including lakes, streams, and rivers.
Lithics	The material created during stone tool manufacturing.

LMax	The maximum of the sound pressure levels recorded of a measurement period.
Lotic	Moving water (e.g., rivers, creeks, and streams).
Mercury	Mercury is a natural and persistent bioaccumulative element which can be transported many kilometers in the atmosphere. Mercury can be deposited to waterbodies from anthropogenic emissions. Mercury also enters the environment through the disposal (e.g., land filling, incineration) of certain products. Products containing mercury include: auto parts, batteries, fluorescent bulbs, medical products, thermometers, and thermostats.
Mesotrophic	A body of water with a moderate amount of dissolved nutrients and primary producers (Wetzel 2001).
Metal leaching	Metal leaching is associated with acid rock drainage due to high solubility of metals and sulphide weathering rates under acidic conditions.
Mitigation measure	A feature, procedure or other action that the Project commits to implement to avoid or reduce the magnitude of an adverse effect, or to enhance the magnitude of a positive effect.
Nitrogen oxide (NO_x)	Formed when nitrogen (N ₂) combines with oxygen (O ₂) in the burning of fossil fuels, from the natural degradation of vegetation, and from the use of chemical fertilizers. It is a significant component of atmospheric acid deposition and photochemical smog. The primary source of nitrogen oxide emissions is automobile exhaust (MBA Training Company n.d.).
Non-contact water	Includes all natural catchment water that is diverted around the surface disturbance.
Octave	A division of the frequency range into bands, the upper frequency limit of each band being twice the lower frequency limit.
Oligotrophic	A body of water that has low concentrations of nutrient and relatively few primary producers (Wetzel 2001).
Overburden	Layers of soil and rock covering a deposit. In surface mining, overburden is removed using large equipment prior to mining. When mining has been completed, it is either used to backfill the mined areas or is hauled to an external disposal or storage site (MBA Training Company n.d.).
Particulate matter	Tiny pieces of solid or liquid matter associated with the Earth's atmosphere. Sources of particulate matter can be human-made or natural.

PM₁₀	Inhalable particulate matter. PM ₁₀ particles are airborne particles that have a diameter of 10 µm or less and are thus a subset of total suspended particulate. The majority of PM ₁₀ particles are from fugitive dust sources. PM ₁₀ can enter the respiratory system and has been linked to respiratory problems.
PM_{2.5}	Respirable particulate matter (PM _{2.5}) particles are a subset of PM ₁₀ and are defined as particles with a diameter less than 2.5 µm. These particles are small enough to enter deep into the respiratory system. The majority of particulate matter emitted in diesel engine exhaust is PM _{2.5} .
Polycyclic aromatic hydrocarbons (PAHs)	Organic compounds comprised of two or more aromatic rings. These compounds are by-products of combustion.
Potential effects	The potential effects of a proposed project are those effects identified without taking any mitigation or management measures into account, with the exception of measures that are integral components of the project design.
Receptor	An environmental value or feature of the social environment which may be sensitive to changes in condition as a result of the Project activities.
Reclamation	The process of restoring land that has been mined to a natural or economically usable purpose. Reclamation operations are usually underway as soon as the deposit has been removed from a mine site. The process includes restoring the land to its approximate original appearance by restoring topsoil and planting native grasses and ground cover.

Regulatory Framework	<p>The compendium of requirements with which the Project is required to, and/or has chosen to, comply. This will typically include the following:</p> <ul style="list-style-type: none"> • legal requirements (laws, regulations, decrees, etc.); • international treaties or conventions, including those ratified by the country in which the Project will occur and potentially those non-ratified; • internal corporate standards (e.g., company-specific environmental performance standards, company-specific IA standards); • programme requirements (e.g., EHS Guidelines); and • policies. <p>The Regulatory Framework will include two broad types of requirements:</p> <ul style="list-style-type: none"> • the requirements that apply to the Project (e.g., to meet a particular emission limit); and • the requirements that apply to the EA process, consultation, and associated permitting process.
Remote Access to Archaeological Data (RAAD)	A web-based application, maintained by the Province of British Columbia, which enables authorized users to access data housed in the British Columbia Archaeological Site Inventory.
Residual effects	Residual effects are the effects of a project that remain after mitigation and management measures are implemented. Project-specific effects are separate/ differentiated from cumulative effects.
Significance	Significance is defined as a measure of the degree or severity of direct and indirect effects caused to human, social, heritage, environmental, and economic components by the Project.
Spatial boundaries	Spatial boundaries consider the potential geographic or physical extent of change generated by the project, as related to a specific assessment topic or valued component.
Sound pressure level (SPL, L_p)	<p>The level of sound pressure; expressed in decibels, as measured by a standard sound level meter with a microphone. This differs from L_w in that this is the received sound as opposed to the sound ‘intensity’:</p> <p>where p is the rms sound pressure in pascals and p_0 is the sound reference pressure at 20 μPa (2×10^{-5}).</p>
Stakeholders	Stakeholders are interest groups whose interests could be affected by the project and its associated activities. Stakeholders do not include treaty and non-treaty First Nations, but generally include land-user groups with interests or tenures in the project area.

Subaqueous deposition	Disposal of waste rock or tailings through placement submerged below water, which is a preferred means of disposal to limit potential metal leaching and acid rock drainage (ML/ARD).
Sulphur dioxide (SO₂)	Fossil fuel that contains a small amount of sulphur-containing organic compounds. During fuel combustion, the sulphur is oxidized and emitted as SO ₂ gas with the engine exhaust. In the atmosphere, SO ₂ can further oxidize to sulphate, which contributes to acid deposition.
Sound power level (SWL, L_w)	<p>A measure of the total power radiated by a source. The Sound power of a source is a fundamental property of the source and is independent of the surrounding environment:</p> <p>where W is the sound power in watts and W_0 is the sound reference power at 10^{-12} watts.</p>
Tailings	Tailings are a mixture of water and finely ground rock that is left over once the valuable minerals are removed by processing of the ore.
Temporal boundaries	Temporal boundaries are the time periods considered in the assessment, which take into account the phases of the Harper Creek Project and the timelines of other human actions.
Total suspended particulates (TSP)	Total suspended particulates (TSP) are solid matter or liquid droplets having aerodynamic particle sizes from 0.01 to 100 μm in diameter and are found in smoke, dust, fuel ash, or condensing vapours that can be suspended in the air.
Total suspended solids (TSS)	A measure of the dry weight of particulate material in a water sample.
Toxicity reference value (TRV)	The maximum acceptable dose or concentration of a chemical that can be received by a receptor without an appreciable risk of adverse health effects during a human lifetime.
Valued components (VCs)	Valued components are environmental, social, economic, health, and heritage components that the public, scientists, government agencies, Aboriginal peoples, and stakeholders consider important. They are identified, in part, through consultation with the above and may be determined on the basis of values including Aboriginal interests, cultural value, scientific and/or regulatory concern, conservation status, biodiversity, and sensitivity to proposed Project effects.
Waste rock	That rock that must be removed from a mine to safely and economically extract the ore, but which has no value.

REFERENCES

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