

GLOSSARY

Terminology used in this document is defined where it is first used. The following list will assist readers who may choose to review only portions of the document.

Anion	An atom or molecule with a negative charge (contains more electrons than protons).
Baseflow	The component of flow discharge that is attributed to soil moisture and groundwater drainage into a channel.
Calcareous	Refers to soils that contain calcium carbonate, often with magnesium carbonate.
Calcareous soil/ horizon	A soil containing enough calcium (and/or magnesium) carbonate to visibly effervesce (fizz) when treated with 10% hydrochloric acid.
Calcite	The most stable mineral form of calcium carbonate.
Cation	An atom or molecule with a positive charge (contains more protons than electrons).
Cause-effect pathway	Cause-effect pathway refers to the relationship between the Project component/physical activity that is causing the change or effect in the condition of the receptor VC.
Climate normal	Climatological data averaged over a prescribed 30-year interval.
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).
Decile	The proportion of the polygon covered by ecosystem component 1, in deciles. Deciles in components 1-3 must total 10 (e.g., 5-3-2, if the first two deciles total 10 then the third decile is left blank e.g. 6-4). Decile 1 must be greater or equal to Decile 2, which must be greater or equal to Decile 3.
Edaphic	Features relating to soil, especially as the soil affects living organisms. Edaphic characteristics include factors such as moisture, acidity, aeration, and the availability of nutrients, rather than climatic factors.
Effect	The specific consequence (to a resource/receptor) arising from an alteration of existing natural environment or human conditions caused either directly or indirectly by the Project.
Eluviation	The transportation of soil particles and minerals in a lateral or downward direction from the upper horizons of soil.

Embedded controls	Embedded controls are physical or procedural controls that are planned as part of the Project design (i.e., not added solely based on a mitigation need identified by the effects assessment process).
Flood frequency	The frequency that a flood of a specified magnitude occurs, inversely related to flood return period.
Freshet	In channels, the relatively high annual peak water discharge period resulting from spring/summer meltwater runoff of the snowpack accumulated over the winter.
Fluvial	Refers to sediments deposited by streams or flowing water; it does not refer to deposition by waves or mass wasting processes such as mudflows.
Glaciofluvial	Deposits and landforms created by glacial rivers and streams.
Gleyed soil/horizon	A soil having one or more neutral grey horizons as a result of anoxic conditions associated with saturation. The term “gleyed” also designates gray horizons and horizons having sufficient yellow and grey mottles as a result of intermittent saturation.
Guidelines	Environmental Impact Statement (EIS) Guidelines for the Murray River Coal Project
Hydrograph	A graphical plot of water discharge versus time
Humus	The decomposition product of organic debris formed from plant and animal litter laid down at the surface and incorporated into soil mineral surficial horizons by soil organisms in the humification process.
Illuviation	Deposition of particles from one soil horizon to another, usually from an upper to a lower horizon, resulting in accumulations of clays, metals, and organic matter.
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.
Infrastructure Footprint	The area of land or water associated with the proposed sites for all physical structures and activities that comprise the Project.
Issues scoping	A process of compiling and analyzing available information to identify environmental, economic, social, heritage and health issues that may be related to the Murray River Coal Project. These Project-specific issues are generally indicative of the local and regional values held by the public, Aboriginal groups, and other stakeholders in the Project area. They also reflect issues of concern to the scientific community or to government (BC EAO 2013a).

Lacustrine	Related to lakes; in soils, refers to deposits associated with lake level fluctuations, e.g., benches or terraces that mark former shorelines, or materials exposed by an uplifting of the land.
Loam	Soil composed of a well graded mixture of sand, silt, clay, and organic matter.
LSA	Local Study Area, defined as the Project footprint (all physical structures and activities that comprise the Project) and surrounding area within which there is a reasonable potential for immediate effects on a specific VC due to an interaction with a Project component(s) or activities.
Mine Site Assessment Footprint	An area that extends beyond the Infrastructure Footprint and provides a conservative area assumed to be functionally lost due to Project activities.
Mitigation measure	This is defined by the BC EAO as any practical means or measures taken to avoid, minimize, restore on-site, compensate, or offset the potential adverse effects of a project.
Moraine	An accumulation of earth, generally with stones, carried and deposited by glaciers.
Mud	A liquid or semi-liquid mixture of water and some combination of silt and clay.
Mudstone	A fine grained (grain diameter is < 0.0625 mm) sedimentary rock the original constituents of which were clays or muds.
Munsell colour system	A fine grained (grain diameter is < 0.0625 mm) sedimentary rock the original constituents of which were clays or muds.
NAD83	North American Datum 1983. A datum is a reference system for computing or correlating the results of a survey. The NAD83 datum is based on the spheroid (GRS80).
Parent Material	The rock or deposit material that forms a soil.
Precipitation	Liquid or solid products of the condensation of water vapour falling from the clouds which include rain, sleet, hail, snow, and other forms of water.
Proponent	HD Mining International Inc.
Reclamation	A process of converting disturbed land into useful landscapes that meet a variety of goals (typically, creating productive ecosystems). It includes material placement and stabilization, capping with soil/overburden, re-grading, placing cover soils, re-vegetation, and maintenance.

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.
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.
Residual Effects	Residual effects are the effects of a project that remain after mitigation and management measures are implemented. Project-specific effects are separate from cumulative effects.
Rhizosphere	The layer of soil that is immediately adjacent to and affected by plant roots, where plants, soil, microorganisms, nutrients and water interact.
Return period	The average interval at which an event occurs, calculated from the probability of its occurrence in a given year.
RSA	Regional Study Area, defined as the spatial area within which direct and indirect effects are anticipated to occur
Runoff	Runoff is the part of precipitation that appears in surface streams and is a measure of the hydrologic response of a watershed. It is the quantity of water that is discharged (“runs off”) from a watershed during a given time period. It is commonly presented as a depth of water over an entire watershed, in millimeters.
Seven-day low flow	The minimum average seven-day flow that occurs over a specified period, such as a month, season, or year.

Shale	A fine-grained, clastic sedimentary rock that originates from mud. It is a mix of clay and tiny fragments of other minerals, especially quartz and calcite. Unlike Mudstone, Shale is characterized by parallel fissures less than one centimeter in thickness, which results in flaky appearance of the mineral.
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.
Soil reaction	An indicator of soil acidity or alkalinity measured on the pH scale. It affects the availability of nutrients and the reactivity of various substances in the soil.
Soil salvage	Conservation of topsoil by stripping it off the surface when the site is first disturbed (e.g., before excavation of overburden). Salvaged soils are either stockpiled for future use or they are immediately used for covering reclaimed surfaces in a different location.
Stage	The depth of water in a watercourse or channel
Temporal scope	The time period over which Project activities may cause an effect.
Terrain Resource Inventory Mapping (TRIM)	TRIM is a digital dataset of geographic base mapping completed for the Province of BC in 1996 at a scale of 1:20,000. The dataset includes elevation data and stream networks.
The Project	The Murray River Coal Project
Till (morainal material)	A heterogeneous and poorly sorted mixture of silt, sand, clay, and rock deposited by a glacier. Since till is the main component of glacial moraines, it is usually referred to as morainal material.
UTM	Universal Transverse Mercator. A geographic coordinate system.
Valued Component	Valued Components are the environmental, social, economic, health, or heritage components that the public, scientists, government agencies, Aboriginal groups, or other stakeholders consider important. Each VC has a unique attribute, or value that can be measured, e.g., increased or reduced wetland function, or a lower tolerance or higher sensitivity to environmental stressors. Valued components are selected to be relevant, comprehensive, representative, responsive, and concise (BC EAO 2013).
Watershed	The entire geographical area drained by a river and its tributaries; an area characterized by all runoff being conveyed to the same outlet.
WSC	Water Survey of Canada