

**APPENDIX A**  
**GLOSSARY OF TERMS**

Alluvial	Applying to the environments, actions, and products of rivers or streams.
Aquifer	Any water-saturated body of geological material from which enough water can be drawn at a reasonable cost for the purpose required. An aquifer is only a relative term determined largely by economics and is best illustrated by extreme examples. An aquifer in an arid prairie area required to supply water to a single farm may be adequate if it can supply 1 m <sup>3</sup> /day. This would not be considered an aquifer by any industry looking for cooling water on the order of 10,000 m <sup>3</sup> /day. A common usage of the term aquifer is to indicate the water-bearing material in any area from which water is most easily extracted.
Aquifer management unit	A hydraulically-connected groundwater system that is defined to facilitate management of the groundwater resources (quality and quantity) at an appropriate scale.
Aquitard	A water-saturated sediment or rock whose permeability is so low it cannot transmit any useful amount of water. An aquitard allows some measure of leakage between the aquifer intervals it separates.
Bedrock	The solid rock that underlies unconsolidated surficial sediments.
Block-Faulted	High-angle faulting in which blocks of the crust move vertically up or down relative to each other. Often occurs in areas undergoing horizontal extension.
Bedrock aquifer	A bedrock unit that has the ability to transmit significant volumes of water to a well completed within it. Typical examples include sandstone and siltstone or significantly fractured intervals.
Channel	An eroded depression in the soil or bedrock surface within which alluvial deposits accumulate (i.e. gravel, sands, silt, clay).
Contaminant	A substance that is present in an environmental medium in excess of natural baseline concentration.
Contemporaneous	Formed or existing at the same time
Cumulative Effects	The changes to the environment caused by all past, present, and reasonably foreseeable future human activities.
Evapotranspiration	The process by which water is discharged to the atmosphere as a result of evaporation from the soil and surface-water bodies and transpiration by plants. Transpiration is the process by which water passes through living organisms, primarily plants, into the atmosphere.
Fault	A break in material in which material on one side of the break has moved relative to that on the other side. In the Foothills and Rocky Mountain Front Ranges Thrust faulting is the most common – Thrust faults are low angle faults in which older material may be ‘thrust over’ younger material.
Fluvial	Produced by the action of a stream or river
Geometric mean	A geometric mean, unlike an arithmetic mean, tends to dampen the effect of very high or low values, which might bias the mean if a straight average (arithmetic mean) were calculated. This is helpful when analyzing transmissivity estimates, which may vary

over 10 orders of magnitude. A geometric mean is a log (base 10) transformation of data to enable meaningful statistical evaluations.

Groundwater	All water beneath the surface of the ground whether in liquid or solid state.
Hydraulic Conductivity	The rate of flow of water through a unit cross-section under a unit hydraulic gradient; units are length/time.
Hydraulic Gradient	In an aquifer, the rate of change of total head per unit distance of flow at a given location and direction. It has both horizontal and vertical components.
Hydrogeology	The science that relates geology, fluid movement (i.e. water) and geochemistry to understand water residing under the earth's surface. Groundwater as used here includes all water in the zone of saturation beneath the earth's surface, except water chemically combined in minerals.
Infiltration	The flow or movement of precipitation or surface water through the ground surface into the subsurface. Infiltration is the main factor in recharge of groundwater reserves.
Instream Flow Needs	The amount of water required in a river to sustain a healthy aquatic ecosystem, and/or meet human needs such as recreation, navigation, waste assimilation or aesthetics.
km	kilometre
Lacustrine	Fine-grained sedimentary deposits associated with a lake environment and not including shore-line deposits
m	metres
mm	millimetres
m <sup>2</sup> /day	metres squared per day
m <sup>3</sup>	cubic metres
m <sup>3</sup> /day	cubic metres per day
Monitoring Well	A constructed controlled point of access to an aquifer which allows groundwater observations. Small diameter observation wells are often called piezometers.
Overburden	Any loose material which overlies bedrock (often used as a synonym for Quaternary sediments and/or surficial deposits) or any barren material, consolidated or loose, that overlies an ore body.
Permeability	A physical property of the porous medium providing an indication of how easily water will flow through the material. Has dimensions Length <sup>2</sup> . When measured in cm <sup>2</sup> , the value of permeability is very small, therefore more practical units are commonly used - Darcy (D) or millidarcy (mD). One darcy is equivalent to 9.86923×10 <sup>-9</sup> cm <sup>2</sup> .
Receptor	Components within an ecosystem that react to, or are influenced by, stressors.
Recharge	The infiltration of water into the soil zone, unsaturated zone and ultimately the saturated zone. This term is commonly combined with other terms to indicate some specific mode of recharge such as recharge well, recharge area, or artificial recharge.

Significant Aquifer	A permeable water-bearing horizon of sufficient thickness and lateral extent that can yield useable quantities of water. An aquifer in excess of 5 m thick, 100 m or more in width and extending a lateral distance of 500 m or more may be considered a significant aquifer.
Stratigraphy	The geological science concerned with the study of sedimentary rocks in terms of time and space.
Stress	Physical, chemical and biological factors that are either unnatural events or activities, or natural to the system but applied at an excessive or deficient level, which adversely affect the receiving ecosystem. Stressors cause significance changes in the ecological components, patterns and processes in natural systems.
Strike	The strike line of a bed, fault, or other planar feature is a line representing the intersection of that feature with a horizontal plane.
Subcrop	An occurrence of the strata directly beneath an unconformity (e.g., base of unconsolidated materials constituting a weathering surface).
Surficial Deposits	See Overburden.
Sustainable	A characteristic of an ecosystem that allows it to maintain its structure, functions and integrity over time and/or recover from disasters without human intervention.
Thalweg	The line defining the lowest points along the length of a river bed or valley. Also the line defining the central (long) axis of a buried channel or valley.
Thrust Faulting	A shallow dipping fault in which the hanging wall moves up relative to the footwall. It is caused by horizontal compression. This results in placing older rock over younger rock.
Till	A sediment deposited directly by a glacier that is unsorted and consisting of any grain size ranging from clay to boulders.
Total Dissolved Solids	Concentration of all substances dissolved in water (solids remaining after evaporation of a water sample).
Transmissivity	The rate at which water is transmitted through a unit width of an aquifer under a unit hydraulic gradient; a measure of the ease with which groundwater can move through the aquifer: <b>Apparent Transmissivity</b> : the value determined from a summary of aquifer test data, usually involving only two water-level readings; <b>Effective Transmissivity</b> : the value determined from late pumping and/or late recovery water-level data from an aquifer test; and <b>Aquifer Transmissivity</b> : the value determined by multiplying the hydraulic conductivity of an aquifer by the thickness of the aquifer.
Trend	The relationship between a series of data points (e.g. Mann Kendall test for trend).
Water Management	A framework to enable water planning, allocation and Framework management of water resources.
Water Management Plan	A plan that provides guidance for water management and sets out clear and strategic directions for how water should be managed.

Watershed	The geographic area of land that drains water to a shared destination. The boundary is determined topographically by ridges, or high elevation points. Water flows downhill, so mountains and ridge tops define watershed boundaries.
Water Well	A hole in the ground for the purpose of obtaining groundwater; “work type” as defined by AEW includes test hole, chemistry, deepened, well inventory, federal well survey, reconditioned, reconstructed, new, old well-test.
Yield	A regional analysis term referring to the rate a properly completed water well could be pumped, if fully penetrating the aquifer: <b>Apparent Yield</b> : based mainly on apparent transmissivity, and <b>Long-Term Yield</b> : based on effective transmissivity.
AMSL	above mean sea level
BGP	Base of Groundwater Protection
DEM	Digital Elevation Model
NPWL	non-pumping water level also often referred to as static water level
TDS	Total Dissolved Solids