

Appendix 3

Glossary and Acronyms



GLOSSARY

Adverse Effect	An undesirable or harmful effect to an organism (human, animal or plant), indicated by some result such as mortality, growth inhibition, reproductive abnormalities, altered food consumption, altered body and organ weights, altered enzyme concentrations, visible pathological changes or carcinogenic effects.
Alkalinity	A measure of water's capacity to neutralize an acid. It indicates the presence of carbonates, bicarbonates and hydroxides, and less significantly, borates, silicates, phosphates and organic substances. It is expressed as an equivalent of calcium carbonate. The composition of alkalinity is affected by pH, mineral composition, temperature and ionic strength. However, alkalinity is normally interpreted as a function of carbonates, bicarbonates and hydroxides. The sum of these three components is called total alkalinity.
Ambient	The conditions surrounding an organism or area.
Ambient Air	The air in the surrounding area.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Ambient Sound Level	All noises that exist in an area and are not related to a facility covered by EUB ID 99-8. Ambient noise includes sound from other industrial noise not subject to this directive, transportation sources, animals and nature.
Aquifer	A body of rock or soil that contains sufficient amounts of saturated permeable material to yield economic quantities of water to wells or springs.
Artifact	Any portable object modified or manufactured by man.
Aspect	Compass orientation of a slope as an inclined element of the ground surface.
Background	An area not influenced by chemicals released from the site under evaluation.
Background Concentration (Environmental)	The concentration of a chemical in a defined control area during a fixed period before, during or after data gathering.
Base Cation	An alkali or alkaline earth metal cation (Ca_2+ , Mg_2+ , $\text{K}+$, $\text{Na}+$).
Baseline	A surveyed or predicted condition that serves as a reference point on which later surveys are coordinated or correlated.



Basic Sound Level	The allowable sound level at a residential location, as defined by the ERCB Directive, with the inclusion of industrial presence based upon dwelling unit density and proximity to transportation noise sources.
Bedrock	The body of rock which underlies gravel, soil or other superficial material.
Benzene	A colourless, liquid, flammable, aromatic hydrocarbon that boils at 80.1°C and freezes at 5.4-5.5°C.
Bitumen	A highly viscous, tarry, black hydrocarbon material having an API gravity of about 9° (specific gravity about 1.0). It is a complex mixture of organic compounds. Carbon accounts for 80 to 85% of the elemental composition of bitumen, hydrogen - 10%, sulphur - 5%, and nitrogen, oxygen and trace elements the remainder.
Calibration	A procedure used for the adjustment of a sound level meter using a reference source of a known sound pressure level and frequency. Calibration must take place before and after the sound level measurements.
CALMET	California Meteorological Model. Used to process meteorological data for input into the CALPUFF model.
CALPUFF	California Puff model, used to estimate ambient concentrations of substances in air, and deposition of those substances (<i>e.g.</i> , acid deposition).
Carrying Capacity	The maximum population size that can be supported by the available resources.
Catchment	A structure in which water is collected.
Cation	A positively charged ion.
Closure	The point after shutdown of operations when regulatory certification is received and the area is returned to the Crown.
Community	Pertaining to plant or animal species living in close association or interacting as a unit.
Concentration	Quantifiable amount of a chemical in environmental media.



Conductivity	A measure of a waterbody's capacity to conduct an electrical current. It is the reciprocal of resistance. This measurement provides the limnologist with an estimation of the total concentration of dissolved ionic matter in the water. Measurement of conductivity provides a quick check of the alteration of total water quality due to the addition of pollutants to the water.
CWQG	Canadian Water Quality Guidelines. Numerical concentrations or narrative statements recommended to support and maintain a designated water use in Canada. The guidelines contain recommendations for chemical, physical, radiological and biological parameters necessary to protect and enhance designated uses of water.
Deposit	Material left in a new position by a natural transporting agent such as water, wind, ice or gravity, or by the activity of man.
Detection Limit (DL)	The lowest concentration at which individual measurement results for a specific analyte are statistically different from a blank (that may be zero) with a specified confidence level for a given method and representative matrix.
Discharge	In a stream or river, the volume of water that flows past a given point in a unit of time (<i>i.e.</i> , m ³ /s).
Diversity	The variety, distribution and abundance of different plant and animal communities and species within an area.
Drainage Basin	The total area that contributes water to a stream.
Drawdown	Lowering of water level caused by pumping. It is measured for a given quantity of water pumped during a specified period, or after the pumping level has become constant.
Ecosite	Ecological units that develop under similar environmental influences (climate, moisture and nutrient regime). Ecosites are groups of one or more ecosite phases that occur within the same portion of the moisture/nutrient grid. Ecosite is a functional unit defined by the moisture and nutrient regime. It is not tied to specific landforms or plant communities, but is based on the combined interaction of biophysical factors that together dictate the availability of moisture and nutrients for plant growth.
Ecosite Phase	A subdivision of the ecosite based on the dominant tree species in the canopy. On some sites where the tree canopy is lacking, the tallest structural vegetation layer determines the ecosite phase.
Ecosystem	An integrated and stable association of living and non-living resources functioning within a defined physical location.



Equivalent land capability	Means that the ability of the land to support various land uses after conservation and reclamation is similar to the ability that existed prior to an activity being conducted on the land, but that the individual land uses will not necessarily be identical.
Erosion	The process by which material, such as rock or soil, is worn away or removed by wind or water.
Evaporation	Evaporation is the process by which water is transferred from open water surfaces to the atmosphere.
Exceedance	An emission or ambient concentration whose measured value is more than that allowed by government regulations.
Flare	A device for disposing of combustible gases from refining or chemical processes by burning in the open.
Fluvial	Relating to a stream or river.
Forb	Broad-leaved herb, as distinguished from grasses.
Forest	A collection of stands of trees that occur in similar space and time.
Fragmentation	Fragmentation is the breaking up of contiguous natural areas by areas of human disturbance into smaller and more distinct or isolated patches.
Glacial Till	Unsorted and unstratified glacial drift (generally unconsolidated) deposited directly by a glacier without subsequent reworking by water from the glacier. Consisting of a heterogeneous mixture of clay, silt, sand, gravel and boulders (<i>i.e.</i> , drift) varying widely in size and shape.
Groundwater	That part of the subsurface water that occurs beneath the water table, in soils and geologic formations that are fully saturated.
Groundwater Level	The level below which the rock and subsoil, to unknown depths, are saturated.
Habitat	The place where an animal or plant naturally or normally lives and grows, for example, a stream habitat or a forest habitat.
Habitat Fragmentation	Occurs when extensive, continuous tracts of habitat are reduced by habitat loss to dispersed and usually smaller patches of habitat. Generally reduces the total amount of available habitat and reduces remaining habitat into smaller, more isolated patches
Hazard	A condition with the potential for causing an undesirable consequence.



Head	The energy, either kinetic or potential, possessed by each unit weight of a liquid; expressed as the vertical height through which a unit weight would have to fall to release the average energy possessed. It is used in various compound terms such as pressure head, velocity head and loss of head.
Hectare	An area measuring the equivalent of 100 m by 100 m or 10,000m ² , one hectare = 2.4711 acres
Historic Site	Any location with detectable evidence of past human activity. Historical Resources Works of nature or by humans valued for their palaeontological, archaeological, prehistoric, historic, cultural, natural, scientific or aesthetic interest.
HRIA	Historical Resources Impact Assessment. A review of the effects that a proposed development will have on the local and regional historic and prehistoric heritage of an area.
Hydraulic Conductivity	The permeability of soil or rock to water.
Hydraulic Gradient	A measure of the force of moving groundwater through soil or rock. It is measured as the rate of change in total head per unit distance of flow in a given direction. Hydraulic gradient is commonly shown as being dimensionless, since its units are metres/metre.
Hydraulic Head	The elevation, with respect to a specified reference level, at which water stands in a piezometer connected to the point in question in the soil. Its definition can be extended to soil above the water table if the piezometer is replaced by a tensiometer. The hydraulic head in systems under atmospheric pressure may be identified with a potential expressed in terms of the height of a water column. More specifically, it can be identified with the sum of gravitational and capillary potentials, and may be termed the hydraulic potential.
Hydrogeology	The study of the factors that deal with subsurface water (groundwater), and the related geologic aspects of surface water.
In Situ	Also known as “in place”, refers to methods of extracting deep deposits of oil sands without removing the groundcover. The <i>in-situ</i> technology in oil sands uses underground wells to recover the resources with less impact to the land, air and water than the traditional oil sands extraction methods.
Infiltration	The flow or movement of precipitation or surface water through the ground surface into the ground. Infiltration is the main factor in recharge of groundwater reserves.



Injection well	A well used for injecting fluids (air, steam, water, natural gas, gas liquids, surfactants, alkalines, polymers, etc.) into an underground formation for the purpose of increasing recovery efficiency.
Invertebrate	An animal without a backbone and internal skeleton.
Land capability	Means the ability of land to support a given land use, based on an evaluation of the physical, chemical and biological characteristics of the land, including topography, drainage, hydrology, soils and vegetation.
Landform	General term for the configuration of the ground surface as a factor in soil formation; it includes slope steepness and aspect as well as relief. Also, configurations of land surfaces taking distinctive forms and produced by natural processes (<i>e.g.</i> , hill, valley, plateau).
Landscape	A heterogeneous land area with interacting ecosystems.
Landscape Diversity	The size, shape and connectivity of different ecosystems across a large area.
Linear Corridor	Roads, seismic lines, pipelines and electrical transmission lines, or other long, narrow disturbances.
m³/d	Cubic metres per day. A measure of oil production or processing rate.
m³/s	Cubic metres per second. The standard measure of water flow in rivers; <i>i.e.</i> , the volume of water in cubic metres that passes a given point in one second.
Media	The physical form of the environmental sample under study (<i>e.g.</i> , soil, water, air).
Mesic	Pertaining to, or adapted to an area that has an intermediate supply of water; neither wet nor dry.
Microclimate	The temperature, precipitation and wind velocity in a restricted or localized area, site or habitat.
Mineral Soil	Soils containing low levels of organic matter. Soils that have evolved on fluvial, glaciofluvial, lacustrine and morainal parent material.
Modelling	A simplified representation of a relationship or system of relationships. Modelling involves calculation techniques used to make quantitative estimates of an output parameter based on its relationship to input parameters. The input parameters influence the value of the output parameters.



Movement Corridor	Travel way used by wildlife for daily, seasonal, annual and/or dispersal movements from one area or habitat to another.
Muskeg	A soil type comprised primarily of organic matter. Also known as bog or peat.
Noise	Generally understood as unwanted sound.
Noise Impact Assessment (NIA)	Identifies the expected sound level emanating from a facility as measured 15 m from the nearest or most impacted permanently or seasonally occupied dwelling. It also identifies what the permissible sound level is and how it was calculated.
NO_x	A measure of the oxides of nitrogen comprised of nitric oxide (NO) and nitrogen dioxide (NO ₂).
Nutrients	Environmental substances (elements or compounds) such as nitrogen or phosphorus, which are necessary for the growth and development of plants and animals.
Observation Well	A constructed controlled point of access to an aquifer which allows groundwater observations. Small diameter observation wells are often called piezometers. Also used to describe deep cased wells instrumented with thermocouples and piezometers to monitor steam growth in SAGD patterns.
Oil Sands	A sand deposit containing a heavy hydrocarbon (bitumen) in the intergranular pore space of sands and fine grained particles. Typical oil sands comprise approximately 10 wt% bitumen, 85% coarse sand (>44µm) and a fines (<44µm) fraction, consisting of silts and clays.
Old Growth Forest	Old growth forests are those forested areas where the annual growth equals annual losses, or where mean annual increment of timber volume equals zero. They can also be defined as those stands that are self-regenerating (<i>i.e.</i> , having a specific structure that is maintained).
Organic Soil	Soils containing high percentages of organic matter (fibric and humic inclusions).
Organics	Chemical compounds, naturally occurring or otherwise, which contain carbon, with the exception of carbon dioxide (CO ₂) and carbonates (<i>e.g.</i> , CaCO ₃).
Overburden	The soil, sand, silt or clay that overlies bedrock.
Overwintering Habitat	Habitat used during the winter as a refuge and for feeding.



Peat	A material composed almost entirely of organic matter from the partial decomposition of plants growing in wet conditions.
Permeability	Permeability is a measure of the ability of a material (such as rocks) to transmit fluids.
Permissible Sound	The allowable overall A-weighted sound level of noise from energy industry level sources, as specified by the ERCB Noise Control Directive, which may contribute to the sound environment of a residential location.
Permissible Sound Level (PSL)	The maximum sound level that a facility should not exceed at a point 15 m from the nearest or most impacted dwelling unit.
pH	The negative logarithm of hydrogen ion concentration. The pH scale is generally presented from 1 (most acidic) to 14 (most alkaline). A difference of one pH unit represents a ten-fold change in hydrogen ion concentration.
Plant Community	An association of plants of various species found growing together.
PM_{2.5}	Airborne particulate matter with mean diameter less than 2.5 µm (microns) in diameter. This represents the fraction of airborne particles that can be inhaled deeply into the pulmonary tissue.
Population	A collection of individuals of the same species that potentially interbreed.
Porosity	Porosity is a measure of the void spaces in a material, and is a fraction of the total volume of the voids over the total volume.
Producer well	Well used to produce reservoir fluid to the wellhead.
QA/QC	Quality Assurance/Quality Control refers to a set of practices that ensure the quality of a product or a result. For example, “Good Laboratory Practice” is part of QA/QC in analytical laboratories and involves such things as proper instrument calibration, meticulous glassware cleaning and an accurate sample information system.
QA/QC Plan	Quality Assurance/Quality Control Plan.
Receptor	The person or organism subjected to exposure to chemicals or physical agents.



Reclamation	The restoration of disturbed or wasteland to a state of useful capability. Reclamation is the initiation of the process that leads to a sustainable landscape (see definition), including the construction of stable landforms, drainage systems, wetlands, soil reconstruction, addition of nutrients and revegetation. This provides the basis for natural succession to mature ecosystems suitable for a variety of end uses.
Reclamation Certificate	A certificate issued by an Alberta Environmental Protection, Conservation, and Reclamation Inspector, signifying that the terms and conditions of a conservation and reclamation approval have been complied with.
Regeneration	The natural or artificial process of establishing young trees.
Reproductive Success	The production of healthy offspring which live to reproduce themselves.
Richness	The number of species in a biological community (<i>e.g.</i> , habitat).
Riparian Area	A geographic area containing an aquatic ecosystem and adjacent upland areas that directly affects it.
Runoff	The portion of water from rain and snow that flows over land to streams, ponds or other surface waterbodies. It is the portion of water from precipitation that does not infiltrate into the ground, or evaporate.
SAGD	Steam Assisted Gravity Drainage is an <i>in-situ</i> oil sands recovery technique that involves drilling two horizontal wells, one to inject steam and a second to produce the bitumen.
Scale	Level of spatial resolution.
Sedimentation	The process of subsidence and deposition of suspended matter carried by water, wastewater or other liquids, by gravity. It is usually accomplished by reducing the velocity of the liquid below the point at which it can transport the suspended material.
Sensory Disturbance	Visual, auditory, or olfactory stimulus that creates a negative response in wildlife species.
Sodium Adsorption Ratio (SAR)	Concentrations of sodium, calcium and magnesium ions in a solution.
Soil Inventory Level (SIL)	The intensity of sampling required in areas to be developed (SIL1; 1 sample per 1 to 5 ha), near developing areas (SIL2; 1 sample per 2 to 30 ha) and in areas distant from the development but within the LSA (SIL3; 1 sample per 30 ha or more).



Sound Level	The contribution of noise from one or more sources to the overall sound level Contribution from all sources affecting a particular location.
Sound Level or Leq Level	Measurements and criteria. It is used to quantify sound which constantly varies over time, such as that commonly occurring in outdoor environments. It is defined as the steady, continuous sound level over the measured time period that has the same acoustic energy as the actual fluctuating sound levels that occurred during the same time period. Measurement periods commonly used for Leq measurements and criteria are the daytime (07:00 - 22:00 hrs) and nighttime (22:00 - 07:00 hrs) periods. EPEA Environmental Protection and Enhancement Act (Alberta) EPM Emissions Production Model Equivalent Sound The steady A-weighted sound level over any specified period (not necessarily 24 hours) that has the same acoustic energy as the fluctuating noise during that period (with no consideration of nighttime weighting). It is a measure of cumulative acoustical energy.
Sound power level	The acoustic power radiated from a given sound source related to a reference power level (typically 10^{-12} watts) expressed in decibels.
Sound pressure level	The ratio, expressed in decibels, of sound pressure to a reference pressure equal to the human threshold of hearing.
Species	A group of organisms that actually or potentially interbreed and are reproductively isolated from all other such groups; a taxonomic grouping of genetically and morphologically similar individuals; the category below genus.
Species at Risk Legislation	The Species at Risk Act (SARA), which came into force in June 2003, protects the wildlife found on federal lands as well as their critical habitat.
Species Composition	A term that refers to the species found in the sampling area.
Species Distribution	Where the various species in an ecosystem are found at any given time. Species distribution varies with season.
Species Diversity	A description of a biological community that includes both the number of different species and their relative abundance. Provides a measure of the variation in number of species in a region. This variation depends partly on the variety of habitats and the variety of resources within habitats and, in part, on the degree of specialization to particular habitats and resources.
Species Richness	The number of different species occupying a given area.
Sport/Game Fish	Large fish caught for food or sport (e.g., northern pike, Arctic grayling).



Stakeholder	People or organizations with an interest or share in an undertaking, such as a commercial venture.
Stand	An aggregation of trees occupying a specific area and sufficiently uniform in composition, age, arrangement and condition so that it is distinguishable from trees in adjoining areas.
Stratigraphy	The succession and age of strata of rock and unconsolidated material. Also concerns the form, distribution, lithologic composition, fossil content and other properties of the strata.
Strong Acids	Acids with a high tendency to donate protons or to completely dissociate in natural waters, (<i>e.g.</i> , H ₂ SO ₄ , HNO ₃ , HCl).
Structure (Stand Structure)	The various horizontal and vertical physical elements of the forest. The physical appearance of canopy and subcanopy trees and snags, shrub and herbaceous strata and downed woody material.
Succession	A series of dynamic changes by which one group of organisms succeeds another through stages leading to a climax community.
Suspended Sediments	Particles of matter suspended in the water. Measured as the oven dry weight of the solids, in mg/L, after filtration through a standard filter paper. Less than 25 mg/L would be considered clean water, while an extremely muddy river might have 200 mg/L of suspended sediments.
Till	Sediments laid down by glaciers.
TOC	Total Organic Carbon. TOC is composed of both dissolved and particulate forms. TOC is often calculated as the difference between total carbon (TC) and total inorganic carbon (TIC). TOC has a direct relationship with both biochemical and chemical oxygen demands, and varies with the composition of organic matter present in the water. Organic matter in soils, aquatic vegetation and aquatic organisms are major sources of organic carbon.
Total Dissolved Solids (TDS)	The total concentration of all dissolved compounds solids found in a water sample.
Traditional Land Use	Activities involving the harvest of traditional resources such as hunting and trapping, fishing, gathering medicinal plants and traveling to engage in these activities.
Transpiration	Transpiration is the process by which water is transferred from soil and plant surfaces to the atmosphere.



Uncertainty	Imperfect knowledge concerning the present or future state of the system under consideration; a component of risk resulting from imperfect knowledge of the degree of hazard or of its spatial and temporal distribution.
Understory	Those trees or other vegetation in a forest stand below the main canopy level.
Water Table	The shallowest saturated ground below ground level - technically, that surface of a body of unconfined groundwater in which the pressure is equal to atmospheric pressure.
Watershed	The entire surface drainage area that contributes water to a lake or river.
Well pad	An area of ground surface associated with SAGD operations on which pairs of wells are drilled. The pairs of wells include a steam injection well and a production well.
Wetlands	Term for a broad group of wet habitats. Wetlands are transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. Wetlands include features that are permanently wet, or intermittently water-covered such as swamps, marshes, bogs, muskegs, potholes, swales, glades, slashes and overflow land of river valleys.
Worst-Case	A semi-quantitative term referring to the maximum possible exposure, dose or risk, that can conceivably occur, whether or not this exposure, dose, or risk actually occurs is observed in a specific population. It should refer to a hypothetical situation in which everything that can plausibly happen to maximize exposure, dose, or risk does happen. The worst-case may occur in a given population, but since it is usually a very unlikely set of circumstances in most cases, a worst-case estimate will be somewhat higher than what occurs in a specific population.



ABBREVIATIONS AND ACRONYMS

%	Percent
<	Less than
>	More than
°	Degree
µg	Micrograms
µg/m³	Microgram per cubic metre
ABMI	Alberta Biodiversity Monitoring Institute
ACC	Alberta Caribou Committee
ACCS	Alberta Culture and Community Spirit
ACFN	Athabasca Chipewyan First Nation
aci	Acoustical Consultants Inc.
ADCTM	Accelerated Decontamination
AENV	Alberta Environment
AESO	Alberta Electrical System Operator
AESRD	Alberta Environment and Sustainable Resource Development
AEW	Alberta Environment and Water
AGCC	Alberta Ground Cover Classification
AGRASID	Agricultural Region of Alberta Soil Inventory Database
Al-Pac	Alberta Pacific Forest Industries Inc.
ANPC	Alberta Native Plant Council
AOSERP	Alberta Oil Sands Environmental Research Program
ATS	Advanced TriStar
ATS-1	ATS Phase 1
ATS-2	ATS Phase 2
ATS-3	ATS Phase 3
ATS-1IDA	ATS-1 Initial Development Area
ATS-2IDA	ATS-2 Initial Development Area



asl	Above Sea Level
ASL	Ambient Sound Level
AESRD	Alberta Sustainable Resource Development
AQRSA	Air quality regional study area
AVI	Alberta Vegetation Inventory
AWI	Alberta Wetland Inventory
BATEA	Best available technology economically achievable
bbl	Barrel
bbls/d	Barrels per day
b/d	Barrels per day
BFW	Boiler feed water
BMD	Benchmark doses
Bpd	Barrels per day
BSL	Basic Sound Level
BT&C	Buttress thread and coupling
BWS	Basal Water Sands
C	Centigrade or Celsius (metric measures of temperature)
CAPP	Canadian Association of Petroleum Producers
CaSO₃	Calcium Sulphite
CaSO₄	Calcium Sulphate
C&R	Conservation and reclamation
CCME	Canadian Council for Ministers of the Environment
CDPFN	Chipewyan Prairie Dene First Nation
CEAA	Canadian Environmental Assessment Agency
CEMA	Cumulative Environmental Management Association
CIP	Clean in place



cm	Centimetre
cm²	Square centimetre
CMAR	Clearwater Multi-user Access Road
CMG	Computer Modelling Group
CNRL	Canadian Natural Resources Limited
CNT	Consultative Notation
CO	Carbon monoxide
CO₂	Carbon dioxide
Co-dom	Co-dominant
COPC	Chemicals of potential concern
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
Cp	Centipoises
CPF	Central Processing Facility
CR	Consultant Report
CSL	Comprehensive Sound Level
CSS	Cyclic Steam Stimulation Process
CSSC	Canadian System of Soil Classification
CWD	Coarse woody debris
d	Day
dB	Decibel
DA	Decontamination Agent
DCO	Decontaminated Oil
DFO	Department of Fisheries and Oceans
DOW	Dangerous oilfield waste
EC	Environment Canada
EIA	Environmental Impact Assessment
EPEA	Environmental Protection and Enhancement Act
ERCB	Energy Resources Conservation Board



ERP	Emergency response plan
ESA	Environmentally sensitive area
ESA	Environmentally Significant Area
ESAR	East side of the Athabasca River
ESDV	Emergency shut-down value
ESP	Electrostatic Precipitation Unit
ESRD	Alberta Environment and Sustainable Resource Development
EZE	Easements
FAN	Federation of Alberta Naturalists
FGD	Flue gas desulphurization
FMA	Forestry management area
FMA	Forest management agreement
FMFN	Fort McKay First Nation
FONG	Fen, open, non-patterned, graminoid dominated with shrub cover
FTNI	Fen, treed, non-patterned, with internal lawns
ftOR	Final Terms of Reference
FWKO	Free water knockout
FWMIS	Fish and Wildlife Management Information System
g	Gram
GHG	Greenhouse gas
GIR	Government Industry Relations
GIS	Geographic Information System
GLC	Ground Level Concentration
GNR	Globally not ranked
GPS	Global Positioning System
h or hr	Hour
H+	Hydrogen ion
ha	Hectare



HCl	Hydrochloric acid
HHRA	Human health risk assessment
HMI	High Resolution Micro-Imager
HRIA	Historical Resource Impact Assessment
H₂S	Hydrogen Sulphide
HSE	Health, Safety and Environmental Management System
HSPF	Hydrologic simulation program FORTRAN
ICP	Intermediate casing points
IDA	Initial Development Area
ILCR	Incremental lifetime cancer risk
INSAR	Interferometric Synthetic Aperture Radar Images
ISO	International Standards Organization
Hz	Hertz
keq	Kiloequivalent – Equal to 1 kmol of hydrogen ion (H ⁺).
kg	Kilogram
km	Kilometre
km/h	Kilometres per hour
km²	Square kilometre
kWh	Kilowatt hour
L or l	Litre
LCCS	Land capability classification system
LHV	Low heating value
LL	Lower lift
LOC	Licence of Occupation
LSA	Local Study Area
LSD	Legal subdivision
m	Metre
MBC	Mix-bury-cover



MCFN	Mikisew Cree First Nation
M.D.	Municipal district
m/s	Metres per second
m²	Square metre
m³	Cubic metre
m³/day	Cubic metres per day
m³/s	Cubic metres per second
MARP	Measurement Accounting and Reporting Plan
masl	Metres Above Sea Level
MCC	Motor Control Center
mD	MilliDarcy
MD	Measured Depth
MDP	Municipal development plan
MEMS	Millennium EMS Solutions Ltd
mg	Milligrams
mg/L	Milligrams per litre
min	Minimum
mm	Millimetre
MOU	Memorandum of understanding
MPa	MegaPascal
MPOI	Maximum Point of Impingement
MSL	Mineral Surface Leases
MSWG	Mapping system working group
MUS	Muskeg
MVC	Mechanical vapour compression
MW	Megawatt
MWD	Measurement while drilling
n	Number of sites



N₂	Nitrogen gas
N/A	Not applicable
NACE	National Association of Corrosion Engineers
NE	Northeast
NIA	Noise Impact Assessment
No.	Number
NO₂	Nitrogen dioxide
NO_x	Nitrogen oxides
OB	Observation well
OBIN	Original bitumen in-place
°C	Degrees Celsius
OH&S	Occupational Health and Safety
OM	Outside diameter
OSCL	Oil Sands Conservation Act
OSL	Oil sands lease
OSVRC	Oil Sands Vegetation Reclamation Committee
OTSG	Once through steam generator
PAC	Powdered activated carbon
PAI	Potential Acid Input
PARC	Prairie Research Collaborative
PDA	Project Drainage Area
PDA/C&R Plan	Pre Disturbance Assessment and Conservation and Reclamation Plan
PFD	Process flow diagram
PIL	Pipeline Installation Lease
PLA	Pipeline Agreements
ppb	Parts per billion
ppm	Parts per million
Project	Advanced TriStar Project



PSL	Permissible sound level
pTOR	Proposed Terms of Reference
Q1 to Q4	First, second, third and fourth quarters of the year
QA	Quality assurance
QA/QC	Quality assurance / quality control
QC	Quality control
R&D	Research and Development
RAMP	Regional Aquatics Monitoring Program
RCE	Responsible Canadian Energy
Rge	Range
RM	Regional Municipality
RM	Rural Municipality
RMWB	Regional Municipality of Wood Buffalo
RO	Reverse osmosis
RoW	Right-of-way
RQ	Risk quotient
RSA	Regional Study Area
RSC	Reduced Sulphur Compound
RUSLEFAC	Revised universal soil loss equation for application in Canada
s	Second
SAC	Strong acid cation
SAGD	Steam-assisted gravity drainage
SCA	Soil Correlation Area
SCR	Selective Catalytic Reduction Unit
SCO	Synthetic crude oil
SCWG	Soil Classification Working Group
SEIA	Socio-Economic Impact Assessment
SF	Slope factor



SIL	Survey Intensity Level
SiO₂	Silica
SIR	Supplemental information request
SLM	Soil Landscape Model
SLWRA	Screening level wildlife risk assessment
SME	Surface Material Exploration
SO₂	Sulphur dioxide
SO₃	Sulphur trioxide
SONS	Swamp, open, non-patterned, shrub-covered
SOR	Steam to Oil Ratio
SO_x	Sulphur oxides
sq. ft.	Square Foot
SRD	Sustainable Resource Development
SW	Southwest
SWL	Sound power level
t	Tonne
t/d	Tonnes per day
TD	Total depth
TDS	Total dissolved solids
TEK	Traditional ecological knowledge
Temp	Temperature
TLU	Traditional land use
TMD	Total measured depth
TOC	Total Organic Carbon
TOR	Terms of Reference
TPA	Trapping Area
TPR	Timber productivity ratings
TS	Topsoil



TSS	Total suspended solids
TVD	True Vertical Depth
Twp	Township
UF	Ultra filtration
UL	Upper lift
UR	Unit risk
US	Upper subsoil
USP™	Ultra-selective Pyrolysis
UTM	Universal transverse mercator
V	Volt
VCI	Value Creation Inc.
VC-M oil	Value Creation medium oil
VEC	Valued Environmental Component
VOC	Volatile organic compounds
Vol	Volume
VRU	Vapour recovery unit
W4M	West of the 4th Meridian
% (wt)	Percent by weight
ZDL	Disturbed lands