Appendix 2

Glossary and Acronyms

ABBREVIATIONS AND ACRONYMS

%	Percent
<	Less than
>	More than
°	Degree
±	approximately (quantitative)
µg	micrograms
µg/L	microgram per litre
µg/m^3	microgram per cubic metre
µm	Micrometres (microns)
µS/cm	MicroSiemens per centimetre
AAAQO	Alberta Ambient Air Quality Objective
ACC	Alberta Caribou Committee
ACCS	Alberta Culture and Community Spirit
AENV	Alberta Environment
Ag	Silver
Al	Aluminum
Al-Pac	Alberta Pacific Forest Industries Inc.
ANHIC	Alberta Natural Heritage Information Centre
ANPC	Alberta Native Plant Council
AOSCA	Alberta Oil Sands Conservation Act
AOSERP	Alberta Oil Sands Environmental Research Program
ARC	Alberta Research Council
As	Arsenic
ASL	Above sea level
ASL	Ambient Sound Level
ASRD	Alberta Sustainable Resource Development
ATV	All Terrain Vehicle
avg.	Average

AVI	Alberta Vegetation Inventory
AWI	Alberta Wetland Inventory
B	Boron
B(a)P	Benzo(a)pyrene
b/d **bpd**	Barrels per day
Ba	Barium
BATEA	best available technology economically achievable
bbl	Barrel
bbl/cd	Barrels per calendar day
bbls/d	Barrels per day
Be	Beryllium
BFW	Boiler Feed Water
BOD	Biochemical oxygen demand
BPIP	Building Profile Input Program
BS&W	Basic sediment and water
BS&W	Bitumen sand and water
BSL	Basic Sound Level
BTEX	Benzene, toluene, ethylbenzene and xylene
BWS	basal water sands
C	Centigrade or Celsius (metric measures of temperature)
C&R	Conservation and reclamation
Ca	Calcium
Ca:Na	Calcium : Sodium
Ca2+	Calcium base cation (particle)
CaCO3	Calcium carbonate
CAPP	Canadian Association of Petroleum Producers
CCME	Canadian Council for Ministers of the Environment
CCME CWS	Canadian Council of Ministers of the Environment’s Canada Wide Standard
Cd	Cadmium

CEA	Cumulative Effects Assessment
CEC	Cation exchange capacity
CEMA	Cumulative Environmental Management Association
CEPA	Canadian Environmental Protection Act
cfm	cubic feet per minute
CH_4	Methane
Cl	Chloride
cm	Centimetre
cm/s	Centimetres per second
cm2	Square centimetre
cm^2/s	Square centimetre per second
CNT	Consultative Notations
Co	Cobalt
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2E	Carbon dioxide equivalents
COD	Chemical oxygen demand
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
cP	CentiPoises
CPF	Central Processing Facility
CPUE	Catch per unit effort
Cr	Chromium
CR	Consultant Report
CSOR	Cumulative steam oil ratio
CTL	Coniferous Timber Licence
Cu	Copper
CWS	Canada-Wide Standards
CWQG	Canadian Water Quality Guidelines
d	Day

D	Darcy
dBA	Decibels
DEM	Digital elevation models
DFO	Department of Fisheries and Oceans
dilbit	Diluted Bitumen
DL	Detection Limit
DO	Dissolved oxygen
DOC	Dissolved organic carbon
ds/m	decisemens per metre
EC	Electrical conductivity
EC	Environment Canada
EH&S	Environment Health and Safety Program
ELC	Ecological land classification
EPEA	Environmental Protection and Enhancement Act
ERP	Emergency response plan
ESP	Electric Submersible Pump
EZE	Easements
Fe	Iron
Fl	Fine textured (C,SiC) water laid sediments
FMA	Forest Management Area
FMU	Forest Management Unit
FN	First Nation
FT	Fine textured
FWKO	Free water knock out
FWMIS	Fish and Wildlife Management Information System
g	Gram
g/s	Gram per second
GHG	Greenhouse gas
GIS	Geographic Information System

GJ	Gigajoule (10^9 Joules)
GJ/d	Gigajoule per day
GJ/h	Gigajoules Per Hour
GLC	Ground Level Concentration
GOR	Gas Oil Ratio
GPS	Global Positioning System
h or hr	hour
H+	Hydrogen ion
H_2O	Water
H_2S	Hydrogen sulphide
ha	Hectare
HCI	Hydrochloric acid
Hg	Mercury
HNO_3	Nitric acid
HRIA	Historical Resource Impact Assessment
HRO	Historical Resources Overview
Hz	Hertz
IGF	induced gas floatation
JACOS	Japan Canada Oil Sands Ltd.
K	Potassium
K+	Potassium Base Cation (particle)
kg	Kilogram
kg/d	Kilograms per day
KH	Permeability of a Horizontal Well
kHz	Kilohertz
KIRs	Key Indicator Resources
km	Kilometre
km/h	Kilometres per hour
km^2	Square kilometre

kPa	Kilopascals
kPag	Kilopascal gauge
kV	Kilovolt
kW	Kilowatt
kWh	Kilowatt hour
L or l	Litre
Leq	Energy Equivalent Sound Level
LFH	Leaf-Fibre-Humic Substances. A soil horizon.
LOC	Licence of Occupation
LOEL	Lowest Observed Effect Level
LP	Low Pressure
LSA	Local Study Area
LSAS	Land Status Automated System
LSD	Legal Sub-division
m	Metre
m/m	Metres/metre
m/s	Metres per second
m/sec	Metres per Second
m/year	Metres per year
m^2	Square metre
m^2 /d	Square metre per day
m^3	Cubic metre
m^3 /d	Cubic metres per day
m^3/s	Cubic metres per second
MARP	Measurement Accounting and Reporting Plan
masl	Metres Above Sea Level
MBC	Mix Bury Cover
meq	Milliequivalents
meq/L	Milliequivalents per Litre

mg	Milligrams
mg/kg	Milligrams per Kilogram
mg/kg/d	Milligrams per kilograms body weight per day
mg/L	Milligrams per litre
MIM	Metallic and Industrial Mineral
min	Minimum
MLL	Miscellaneous Lease
mm	Millimetre
mm/year	Millimetre per year
mm/yr	Millimetre per year
Mn	Manganese
mPa	MilliPascal
MPa	MegaPascal
mPa/s	MilliPascals per second
MPOI	Maximum point of impingement
MOU	Memorandum of Understanding
mS/cm	Millisiemens per centimetre
MSL	Mineral Surface Leases
Mt/yr	Metric tonnes per year
MVA	Megavolt-amperes
MW	Megawatt
MWD	Measurement While Drilling
MWh/yr	Megawatt hours per year
N	Nitrogen
N/A	Not applicable
NO_2	Nitrogen dioxide
N_2O	Nitrous oxide
Na	Sodium
NaCl	Sodium chloride

NAD	North American Datum
NaOH	Caustic Soda
NE	northeast
NH_3	Ammonia
NH_4	Ammonium
Ni	Nickel
NIA	Noise Impact Assessment
Nighttime	Defined as the hours from 22:00 to 07:00.
NO	Nitric oxide (gas)
No.	Number
NO_3	Nitrate
NOx	Nitrogen oxides
NPP	Net process pay
NPRI	National Pollutant Release Inventory
NSMWG	The NOx/SOx Management Working Group of the Cumulative Environmental Management Association (CEMA).
NTS	National Topographic Series
OD	Outside diameter
O_3	Ozone
°C	Degrees Celsius
OH&S	Occupational Health and Safety
OLM	Ozone Limiting Method
Org C	Organic Carbon
OSC Act	Oil Sands Conservation Act
OSL	Oil sands lease
ORF	Oil removal filter
OSP	Oil sands permit
OTSG	Once through steam generator
P	Phosphorus
PAH	Polycyclic aromatic hydrocarbon

PAI	Potential acid input
Pb	Lead
PIL	Pipeline Installation Lease
PLA	Pipeline Agreements
PM	Particulate matter
PM_{10}	Particulate matter less than 10 mm
$PM_{2.5}$	Particulate matter less than 2.5 microns in diameter
PNG	Petroleum and natural gas
PNT	Protective notations
ppb	Parts per billion
ppm	Parts per million
ppm/h	Parts per million per hour
psi	Pounds per square inch
psig	Pounds per square inch gauge
PSL	Permissible sound level
QA	Quality assurance
QA/QC	Quality assurance / quality control
QC	Quality control
RAMP	Regional Aquatics Monitoring Program
Rge	Range
RIWG	Regional Issues Working Group
RM	Regional Municipality
RMWB	Regional Municipality of Wood Buffalo
RoW	Right-of-way
RSA	Regional Study Area
s	second
S	Sulphur
s/cm	Seconds per centimetre
SO_2	Sulphur dioxide

SAGD	Steam assisted gravity drainage
SAR	Sodium Absorption Ratio
Sb	Antimony
SCA	Soil correlation area
SCWG	Soil Classification Working Group
Se	Selenium
SEWG	Sustainable Ecosystems Working Group
Si	Silicon
SiC	Silty clay
SiCL	Silty clay loam
SIL	Soil Inventory Level
SiO_2	Silica dioxide
SL	Sandy loam
SLM	Soil Landscape Model
SME	Surface Material Exploration
SML	Surface Material Lease
Sm^3/d	Standard cubic metres per day
SO_2	Sulphur dioxide
SO_4	Sulfate
SOR	Steam to Oil Ratio
SO_x	Sulphur oxides
SPL	Sound Pressure Level
sq. ft.	Square Foot
SQCWG	Soil Quality Criteria Working Group
Sr	Strontium
SRD	Sustainable Resource Development
SS	subsoil
SSE	South-southeast
SSW	South-southwest

SW	southwest
t	Tonne
t/cd	Tonnes per calendar day
t/d	Tonnes per day
t/h	Metric tonnes per hour
t/sd	tonnes/stream day
TC	Total carbon
TCU	True Color Units
TD	Total depth
TDG	Transportation of dangerous goods
TDS	Total dissolved solids
TEH	Total extractable hydrocarbons
TEK	Traditional Environmental Knowledge
TFA	Temporary Field Authorization
THC	Total hydrocarbons
Ti	Titanium
Tl	Thallium
TLU	Traditional Land Use
TOC	Total Organic Carbon
Ton	Two thousand pounds (short or U.S. ton)
Tonne	Metric ton (1 000 kg)
TP	Total Phosphorus
TPA	Trapping Area
TRS	Total reduced sulphur
TS	Topsoil
TSP	Total suspended particulates
TSS	Total suspended solids
Twp.	Township
U	Uranium

ug/m^3	Microgram per cubic metre
USgpm	U.S. gallons per minute
UTM	Universal transverse mercator
V	Vanadium
V	volt
VAC	Volts in an alternating current
VCE	Vegetation Control Easements
VOC	Volatile organic compounds
Vol	Volume
vol%	percent by volume
VRU	Vapour recovery unit
w/w	weight to weight
W4M	West of the 4th Meridian
WBEA	Wood Buffalo Environmental Association
WDI	Well Disposal/Injection
WDW	Water Disposal Wells
WHMIS	Workplace Hazardous Materials Information System
WMU	Wildlife management unit
WRA	Water Resources Act
WSC	Water Survey Canada
WSW	Water Source Wells
wt %	percent by weight
Zn	Zinc
ZOI	Zone of influence
Zr	Zirconium

GLOSSARY

7-Q-10	Discharge The minimum average discharge over a period of seven days duration which has a return period of 10 years; i.e., the probability that the minimum 7-day duration discharge will be equal to or less than the stated value is 10%.
Acidification	The decrease of acid neutralizing capacity in water, or base saturation in soil, caused by natural or anthropogenic processes. Acidification is exhibited as the lowering of pH, which can adversely affect aquatic life.
Acre	A unit of area in the U.S. Customary System, used in land and sea floor measurement and equal to 160 square rods, 4,840 square yards, or 43,560 square feet. 1 acre = 0. 40469 ha
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.
Airshed	Describes the geographic area requiring unified management for achieving air pollution control.
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 ID 99-8. Ambient noise includes sound from other industrial noise not subject to this directive, transportation sources, animals and nature.
Anion	A negatively charged ion.
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.

Archaeology	The scientific discipline responsible for studying the unwritten portion of man's historic and prehistoric past.
Armouring	Channel erosion protection by covering with protection material.
Aspect	Compass orientation of a slope as an inclined element of the ground surface.
ASWQG	Alberta Surface Water Quality Guidelines. Numerical concentrations or narrative statements established to support and protect the designated uses of water. These are minimum levels of quality, developed for Alberta watersheds, below which no waterbody is permitted to deteriorate. These objectives were established as minimum levels that would allow for the most sensitive use. These concentrations represent a goal to be achieved or surpassed.
Attenuation	A reduction in sound level that occurs with sound propagation over distance by means of physical dissipation or absorption mechanisms, or a reduction in sound level that occurs by means of noise control measures applied to a sound source. The process by which a compound is reduced in concentration over time or distance through absorption, degradation, or transformation.
Available Drawdown	The vertical distance that the equipotential surface of an aquifer can be lowered; in confined aquifers, this is to the top of the aquifer; in unconfined aquifers, this is to the bottom of the aquifer.
A-weighted sound level	The sound level as measured on a sound level meter using a setting that emphasizes the middle frequency components similar to the frequency response of the human ear.
Background	An area not influenced by chemicals released from the site under evaluation.
Background Sound Level	All noises that exist in an area including existing facilities covered by ID 99-8. Background noise includes sound from other industrial noise not subject to this directive, transportation sources, animals and nature.
Base Cation	An alkali or alkaline earth metal cation (Ca2+, Mg2+, K+, 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.
Berm	Fill preventing movement of water off the road surface; or, a low earthfill constructed in the path of flowing water to divert its direction, or accumulation beside a road.
Biodiversity	The variety of organisms and ecosystems that comprise both the communities of organisms within particular habitats and the physical conditions under which they live.
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.
BOD	The biochemical oxygen demand (BOD) determination is an empirical test in which standardized laboratory procedures are used to determine the relative oxygen requirements of wastewaters, effluents and polluted waters.
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 (e.g., acid deposition).
Carrying Capacity	The maximum population size that can be supported by the available resources.
Cation	A positively charged ion.
CEMA	Cumulative Environmental Management Association – An association of oil sands industry, other industry, regional community representatives, regulatory agencies and other stakeholders designed to develop systems to manage cumulative effects associated with developments in the Oil Sands Region.
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.
Confined Aquifer	An aquifer in which the potentiometric surface is above the top of the aquifer.
Conifers/Coniferous	White and black spruce, balsam fir, jack pine and tamarack.

Conservative Approach	Approach taken to incorporate protective assumptions to ensure that risk will not be underestimated.
Consolidation	The gradual reduction in volume of a soil or semi-solid mass.
Contaminants	A general term referring to any chemical compound added to a receiving environment in excess of natural concentrations. The term includes chemicals or effects not generally regarded as "toxic," such as nutrients, colour and salts.
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.
Daytime	Defined as the hours from 07:00 to 22:00.
dB (decibel)	A unit of measure of sound pressure that compresses a large range of numbers into a more meaningful scale.
DBA	The decibel (dB) sound pressure level filtered through the A filtering network to approximate human hearing response. See dB and A-weighted sound level.
dBA (decibel A)	Unit used for 'A-weighted' sound pressure levels. A-weighting is an adjustment made to sound-level measurement to approximate the response of the human ear.
DEM (Digital Elevation Model)	A three-dimensional grid representing the height of a landscape above a given datum.
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.e., m3/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.
Ecodistricts	Landscape units that represent similar geology, landform and vegetation characteristics that best reflect overall patterns of landscape features.
Ecological Land Classification	A means of classifying landscapes by integrating landforms, soils and vegetation components in a hierarchical manner.
Ecoregion	Ecological regions that have broad similarities with respect to soil, terrain and dominant vegetation.
Ecosection	Clearly recognizable landforms such as river valleys and wetlands at a broad level of generalization.
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.
Edaphic	Referring to the soil. The influence of the soil on plant growth is referred to as an edaphic factor.
Effluent	Stream of water discharging from a source.
ELC	Ecological Land Classification. A system of mapping an area on the basis of vegetation composition and soil type.
Energy equivalent sound level (L_{eq})	The L_{eq} is a single-number average, A-weighted sound level that represents cumulative acoustical energy as measured over a specified time interval. This interval should be specified in brackets following the L_{eq} (e.g.: L_{eq} (9) is a nine-hour L_{eq}).
Ephemeral	A phenomenon or feature that last only a short time (i.e., an ephemeral stream is only present for short periods during the year).
Ephemeral stream or draw	A channel that carries water only during and immediately following rainstorms. Sometimes referred to as a dry wash.

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.
Escarpment	A cliff or steep slope at the edge of an upland area. The steep face of a river valley.
Evaporation	Evaporation is the process by which water is transferred from open water surfaces to the atmosphere.
Evapotranspiration	Evapotranspiration is the combined losses of water from the earth's surface to the atmosphere through evaporation and transpiration.
Exceedance	An emission or ambient concentration whose measured value is more than that allowed by government regulations.
Exposure	The contact between a chemical and a biological system, or organism.
Exposure Concentration	The concentration of a chemical in its transport or carrier medium at the point of contact.
Facies	The overall characteristics of a rock unit that reflect its origin and differentiate the unit from others around it
Fisheries Act	Federal legislation that protects fish habitat from being altered, disrupted or destroyed by chemical, physical or biological means. Destruction of the habitat could potentially undermine the economic, employment and other benefits that flow from Canada's fisheries resources (DFO 1986).
Flare	A device for disposing of combustible gases from refining or chemical processes by burning in the open.
Floodplain	Land near rivers and lakes that may be inundated during seasonally high water levels (i.e., floods).
Fluvial	Relating to a stream or river.
Fluvial Processes	Natural processes involving the formation and evolution of stream and river channels and their floodplains.
Forage Area	The area used by an organism for hunting or gathering food.
Forage Fish	Small fish that provide food for larger fish (e.g., pearl dace, fathead minnow).
Forb	Broad-leaved herb, as distinguished from grasses.

Forest	An ecosystem dominated by trees where natural processes reflect the the dominance of large long lived woody vegetation.
Forest Fragmentation	The change in the forest landscape from extensive and continuous to a mosaic of small patches of vegetation.
Forest Landscape	Forested or formerly forested land not currently developed for nonforest use.
Forest Succession	The orderly process of change in a forest as one plant community or stand condition is replaced by another, evolving toward the climax type of vegetation.
Fragmentation	The breaking up of contiguous natural areas into smaller often more distinct or isolated patches
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure.
Fugitive Emissions	Substances emitted from any source except those from stacks and vents. Typical sources include gaseous leakage from valves, flanges, drains, volatilization from ponds and lagoons, and open doors and windows. Typical particulate sources include bulk storage areas, open conveyors, construction areas or plant roads.
Geotextile	A product used as a soil reinforcement agent and as a filter medium. It is made of synthetic fibres manufactured in a woven or loose nonwoven manner to form a blanket-like product.
GIS	Geographic Information System. Pertains to a type of computer software that is designed to develop, manage, analyze and display spatially referenced data.
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.e., drift) varying widely in size and shape.
Glaciofluvial	Sediments or land-forms produced by meltwaters originating from glacier/ice sheet.
Glaciolacustrine (or Glacio-Lacustrine)	Relating to the lakes that formed at the edge of glaciers as the glaciers receded. Glaciolacustrine sediments are commonly laminar deposits of fine sand, silt and clay.
Groundtruth	Conductive site visits to confirm accuracy of remotely sensed information.
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.
Groundwater Regime	Water below the land surface in a zone of saturation.
Groundwater Velocity	The speed at which groundwater advances through the ground. In this document, the term refers to the average linear velocity of the groundwater.
Habitat	The place where an animal or plant naturally or normally lives and grows, for example, a stream habitat or a forest habitat.
Habitat Alienation	The loss of habitat effectiveness as a result of sensory disturbances from human activities at disturbed sites.
Habitat Effectiveness	Including the physical characteristics associated with the suitability of a habitat, the ability of a habitat to be used by wildlife. The effectiveness of a habitat can be decreased through visual, auditory, or olfactory disturbance even though the physical characteristics of the habitat remain unchanged.
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
Habitat Generalist	Wildlife species that can survive and reproduce in a variety of habitat types (e.g., red-backed vole).
Habitat Specialist	Wildlife species that is dependent on a few habitat types for survival and reproduction (e.g., Cape May warbler).
Hazard	A condition with the potential for causing an undesirable consequence.
hectare	An area measuring the equivalent of 100 m by 100 m or 10,000m^2, one hectare = 2.4711 acres
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/meter.

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.
Hydraulic Structure	Any structure designed to handle water in any way. This includes retention, conveyance, control, regulation and dissipation of the energy of water.
Hydrogeology	The study of the factors that deal with subsurface water (groundwater), and the related geologic aspects of surface water.
ICP (Metals)	Inductively Coupled Plasma (Atomic Emission Spectroscopy). This analytical method is an U.S. EPA designated method (Method 6010). The method determines elements within samples of groundwater, aqueous samples, leachates, industrial wastes, soils, sludges, sediments and other solid wastes. Samples require chemical digestion before analysis.
In Situ	Also known as “in place”, refers to methods of extracting deep deposits of oil sands without removing the groundcover. The in-situ 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 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.
Inorganics	Pertaining to a compound that contains no carbon.
Invertebrate	An animal without a backbone and internal skeleton.
L/min	Litres per minute LACT Liquid Accounting and Custody Transfer LAI Leaf Area Index lb/hr Pounds per hour LC Lethal Concentration LCC Land Capability Classification. A system by which the ability of a soil is capable of sustaining a commercial forest.
L10, L50, L90	The A-weighted noise levels that are exceeded 10%, 50%, and 90% of the time during the measurement time.

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 (e.g., 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.
Leaching	The removal, by water, of soluble matter from regolith or bedrock.
L_{eq}	See Energy equivalent sound level.
Lethal	Causing death by direct action.
Linear Corridor	Roads, seismic lines, pipelines and electrical transmission lines, or other long, narrow disturbances.
litter layer	The uppermost, slightly decayed layer of organic matter on the forest floor.
Littoral Zone	The zone in a lake that is closest to the shore. It includes the part of the lake bottom, and its overlying water, between the highest water level and the depth where there is enough light (about 1% of the surface light) for rooted aquatic plants and algae to colonize the bottom sediments.
Lmin, Lmax	The A-weighted lowest and highest noise levels recorded during the measurement time.
Loading Rates	The amount of deposition, determined by technical analysis, above which there is a specific deleterious ecological effect on a receptor.
m^3/d	Cubic metres per day. A measure of oil production or processing rate.
m^3/s	Cubic metres per second. The standard measure of water flow in rivers; i.e., the volume of water in cubic metres that passes a given point in one second.
Mineral Soil	Soils containing low levels of organic matter. Soils that have evolved on fluvial, glaciofluvial, lacustrine and morainal parent material.
Mixing Height	The depth of surface layer in which atmospheric mixing of emissions occurs.
Model Domain	The region of interest for a numerical model.

Modeling	A simplified representation of a relationship or system of relationships. Modeling 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 type of bog that has developed over thousands of years in depressions, on flat areas, and on gentle to steep slopes. These bogs have poorly drained, acidic, organic soils supporting vegetation that can be (1) predominantly sphagnum moss; (2) herbaceous plants, sedges, and rushes; (3) predominantly sedges and rushes; or (4) a combination of sphagnum moss and herbaceous plants. These bogs may have some shrub and stunted conifers, but not enough to classify them as forested lands.
Nighttime	Defined as the hours from 22:00 to 07:00.
Noise	Generally understood as unwanted sound.
Noise Attenuation	Noise reduction. The ability of a material, substance or medium to reduce the noise level from one place to another or between one room and another. Noise attenuation is specified in decibels.
NOx	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.
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.e., 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 (CO2) and carbonates (e.g., CaCO3).
Outcrop	An outcrop is a geologic unit that is exposed at the earth's surface.
Overburden	The soil, sand, silt or clay that overlies bedrock.
Overstory	Those trees that form the upper canopy in a multi-layered forest.
Overwintering Habitat	Habitat used during the winter as a refuge and for feeding.
PAH(s)	Polycyclic Aromatic Hydrocarbon. A chemical byproduct of petroleum-related industry. Aromatics are considered to be highly toxic components of petroleum products. PAHs, many of which are potential carcinogens, are composed of at least two fused benzene rings. Toxicity increases along with molecular size and degree of alkylation of the aromatic nucleus.
PAI	The Potential Acid Input is a composite measure of acidification determined from the relative quantities of deposition from background and industrial emissions of sulphur, nitrogen and base cations.
Paleozoic	An era of geologic time, from the end of the Precambrian to the beginning of the Mesozoic, or from about 570 to about 225 million years ago. Also, the rocks deposited during the Paleozoic.
Peat	A material composed almost entirely of organic matter from the partial decomposition of plants growing in wet conditions.
Permeability	A physical property of the porous medium. Has dimensions Length2. When measured in cm2, the value of permeability is very small, therefore more practical units are commonly used - darcy (D) or millidarcy (mD).
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 15m 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.
Piezometer	A pipe in the ground in which the elevation of water levels can be measured.

Piezometric Surface	If water level elevations in wells completed in an aquifer are plotted on a map and contoured, the resulting surface described by the contours is known as a potentiometric or piezometric surface.
Plant Community	An association of plants of various species found growing together.
PM	Particulate matter. May be relatively large and derived from crustal sources such as road dust (>10µm), or be relatively small and derived from combustion sources both natural and anthropogenic sources (2.5 to 10µm), or be derived through reactions in the atmosphere (secondary particulates; <2.5µm)
PM_{10}	Airborne particulate matter with mean diameter less than 10 µm (microns) in diameter. This represents the fraction of airborne particles that can be inhaled into the upper respiratory tract.
$PM_{2.5}$	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.
Porosity	Porosity is the percentage of the bulk volume of a rock or soil that is occupied by interstices, whether isolated or connected.
Producer well	Well used to produce reservoir fluid to the wellhead.
Productive Forest	Forests on lands with a capability rating of equal to or greater than 3, and stocked with trees to meet the stocking standards of a merchantable forest.
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 Environment or Sustainable Resource Development 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.
RELAD	The Regional Langrangian Acid Deposition model, used to estimate acid deposition (as PAI).
Riparian Area	A geographic area that exists between 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 in-situ oil sands recovery technique that involves drilling two horizontal wells, one to inject steam and a second to produce the bitumen.
Saturation Percentage	Percent water content where the soil is completely saturated with water.
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.
Silt fence	A temporary barrier used to intercept sediment-laden runoff from small areas.
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 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).
Stability	A measure of the atmosphere's capability to disperse emissions. Stable atmospheric conditions create poorer dispersion of plumes and increased concentrations. Unstable conditions promote dispersion and result in lower concentrations.
Stakeholder	People or organizations with an interest or share in an undertaking, such as a commercial venture.
Stand	A homogeneous, geographically contiguous area of forest.

Stand Age	The number of years since a stand experienced a stand-replacing disturbance event (e.g., fire, logging).
Stand Density	The number and size of trees on a forest site.
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, (e.g., H2SO4, HNO3, 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.
Subcrop	A subcrop is a geologic unit that is exposed beneath an overlying geologic layer, usually at an unconformity.
Succession	A series of dynamic changes by which one group of organisms succeeds another through stages leading to a climax community.
Successional Stage	A stage or recognizable condition of a forest community that occurs during its development from bare ground to climax.
Surficial Aquifer	A surficial deposit containing water considered an aquifer.
Surficial Deposit	A geologic deposit (clay, silt or sand) that has been placed above bedrock. (See also “Overburden”)
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.
Sustainable Landscape	Capability of landscape (including landforms, drainage, waterbodies and vegetation) to survive extreme events and natural cycles of change, without causing accelerated erosion and environmental impacts much more severe than that of the natural environment.
t/d	Tonne per day
Thalweg	The (imaginary) line connecting the lowest points along a streambed or valley. Within rivers, the deep channel area.
THC	Total Hydrocarbons include all airborne compounds containing only carbon and hydrogen.
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. See filterable residue.
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.
Unconfined Aquifer	A permeable bed only partly filled with water and overlying a relatively impervious layer. Its upper boundary is formed by a free water table under atmospheric pressure. Water in a well penetrating an unconfined aquifer does not, in general, rise above the water surface, except when there is vertical flow.
Understory	Those trees or other vegetation in a forest stand below the main canopy level.
Vegetation Community	See “Plant Community”.
VOC	Volatile Organic Compounds include aldehydes and all of the hydrocarbons except for ethane and methane. VOCs represent the airborne organic compounds likely to undergo or have a role in the chemical transformation of pollutants in the atmosphere.
Watercourse	A definite channel with bed and banks within which concentrated water flows continuously, frequently or infrequently.
Watercourse crossing	generally means an access over or through a water body involving the use of structures such as a culverts or bridges. means a watercourse crossing as defined in the Code of Practice For Watercourse Crossings adopted in section 3(2).
Well pad	An area associated with SAGD operations on which pairs of wells are drilled. The pairs of wells include a steam injection well and a production well.