

## GLOSSARY

- API :** An American Petroleum Institute measure of specific gravity
- Banked Cubic Metres (BCM)** : A measurement of volume used to state the volume of in-situ material moved during mining operations
- Bitumen :** Petroleum that exists in the semisolid or solid phase in natural deposits – it is the molasses-like substance which can comprise anywhere from 1 to 18% of the oil sand
- Bucketwheel Reclaimer :** A machine that scoops up oil sand from a windrow and places it on conveyors to transfer to extraction
- Coking :** A process used to break down heavy oil molecules into lighter ones by removing the carbon that remains as a coke residue
- Conventional Crude Oil :** Petroleum found in liquid form, flowing naturally or capable of being pumped without further processing or dilution
- Cyclofeeder :** Receives oil sand feed and prepares it in slurry form for transport to extraction
- Dragline :** A large machine which digs oil sand from the mine pit and piles it into windrows
- Density :** The heaviness of crude oil, indicating the proportion of large, carbon-rich molecules, generally measured in kilograms per cubic metre (kg/m<sup>3</sup>) or degrees on the American Petroleum Institute (API) gravity scale; in Western Canada oil up to 900kg/m<sup>3</sup> is considered light to medium crude – oil above this density is deemed as heavy oil or bitumen
- Desulphurization:** The process of removing sulphur and sulphur compounds from gases or liquid hydrocarbon mixes
- Extraction :** The process of separating the bitumen from the oil sands
- Fine Tailings :** Essentially muddy water – about 85% water and 15% fine clay particles by volume produced as a result of extraction
- Fluid Coking :** A process by which bitumen is continuously cracked to produce lighter hydrocarbons and coke
- Gas Oil :** The higher boiling point component of crude oil
- Gypsum :** A mineral used as a soil amendment in consolidated tails technology

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## GLOSSARY, Continued:

- Heavy Oil :** Dense, viscous oil, with a high proportion of bitumen, which is difficult to extract with conventional techniques and is more costly to refine
- Hydrocarbons:** A large class of liquid, solid or gaseous organic compounds, containing only carbon and hydrogen, which are the basis of almost all petroleum products
- Hydrotransport :** Oil sand from the mine operation is mixed with hot water and caustic and the oil sand slurry is then transported by pipeline to the extraction plant where it feeds directly into the Primary Separation Vessel
- Hydrotreater :** A unit which removes sulphur and nitrogen from the components of crude oil by the catalytic addition of hydrogen
- In situ :** In its original place; in position; in situ recovery refers to various methods used to recover deeply buried bitumen deposits, including steam injection, solvent injection and firefloods
- LC-Fining :** Expanded ebulating bed hydroprocessing technology used to continuously crack bitumen into lighter products through the catalytic addition of hydrogen
- Mature Fine Tailings :** When tailings is deposited at the disposal site, it separates and settles further to create a layer of clarified water on top that is used in extraction and a dense mixture of clay, silt and water on the bottom
- Muskeg :** A water soaked layer of decaying plant material, one to three metres thick, found on top of the overburden
- Naphtha :** any of various volatile, often flammable, liquid hydrocarbon mixtures used chiefly as solvents and diluents
- Oil Sand :** Sand containing bitumen
- Oil Sand Lease :** A long-term agreement with the provincial government which permits the leaseholder to extract bitumen, other metals and minerals contained in the oil sands existing within the specific lease area
- Overburden :** Layer of rocky, clay like material that lies under muskeg
- Petroleum :** A naturally occurring mixture composed predominantly of hydrocarbons in the gaseous, liquid, or solid phase

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## GLOSSARY, Continued:

**Residuum :** A residual product from the processor distillation of hydrocarbons

**Sour Oil :** Crude oil containing free sulphur, hydrogen sulphide or other sulphur compounds

**Steam-Assisted Gravity Drainage (SAGD) :** A recovery technique for extraction of heavy oil or bitumen that involves drilling a pair of horizontal wells one above the other; one well is used for steam injection and the other for production

**Synthetic Crude Oil :** A mixture of hydrocarbons, similar to crude oil, derived by upgrading bitumen from oil sands

**Tailings :** A combination of water, sand, silt and fine clay particles that are a byproduct of removing the bitumen from the oil sand

**Upgrading :** The process of converting heavy oil or bitumen into synthetic crude oil

**Viscosity :** The resistance to flow or “stickiness” of a fluid

Sources:

CERI – Canadian Energy Research Institute – Introduction to the Canadian Oil Sands and Heavy Oil Industries, 2001  
Syncrude Fact Book, 2000