

OIL SANDS



Oil sands are a naturally occurring mixture of sand, clay, water, and bitumen (also called heavy oil). Oil sands can also refer to an area where oil sands exist (e.g. the Alberta oil sands). Canada's oil sands are found in three deposits in Alberta and Saskatchewan: the Athabasca, Peace River, and Cold Lake deposits.

Traditional techniques like pump jacks won't extract bitumen. One challenge is that bitumen is mixed in with sand and clay and must be separated prior to pipeline transport. Another challenge is that bitumen is almost solid at room temperature (about the same consistency as peanut butter) and doesn't flow.

Diluted bitumen is not a new commodity in U.S. and Canadian pipelines. It has been transported in existing pipelines for more than two decades. Diluted bitumen is essentially the same as any other type of crude and does not pose a greater risk to pipelines, people, or the environment than other crudes transported via pipeline.

Transmission pipelines transporting oil out of Alberta to the United States and beyond cross thousands of miles at a moderate and safe temperature. Pipelines that carry crude oil produced from the Canadian oil sands operate at similar temperatures.



When the diluted bitumen reaches the interprovincial, international, and interstate pipeline network, the crude oil must meet quality specifications. Those requirements are posted with the National Energy Board in Canada and the Federal Energy Regulatory Commission in the United States. Pipeline operators in fact take samples of incoming batches upon receipt and during transit to monitor product adherence to quality specifications required of its shippers.

The oil shipped through the proposed pipeline will be a combination of bitumen, the heavy oil that is extracted from the oil sands, and a diluent, which is usually natural gas condensate, naphtha, or a mix of other light hydrocarbons. The diluted mixture improves the quality of bitumen and allows the crude oil (referred to as "dil-bit" in the industry) to meet pipeline product quality specifications.

Sources:

Oil Sands Alliance, Intro to the Oil Sands. Retrieved from <https://oilsandsalliance.ca/canadian-oil-sands/intro-to-the-oil-sands/>

American Petroleum Institute, Pipeline Transportation of Diluted Bitumen from the Canadian Oil Sands. Retrieved from https://www.api.org/oil-and-natural-gas-overview/transporting-oil-and-natural-gas/pipeline/~/_media/files/oil-and-natural-gas/pipeline/pipeline_transportation_diluted_bitumen.ashx