

Spruce Lake DilSAP project

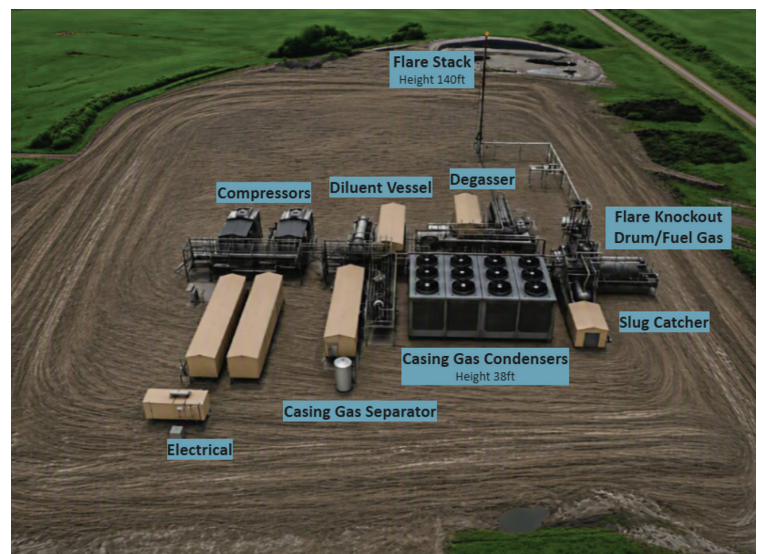
Project overview

The DilSAP project will optimize and increase production at our Spruce Lake thermal site by employing diluent solvent-aided process (DilSAP) technology, which uses solvents along with steam, to recover oil. This is Cenovus's first commercial use of this technology. Once complete, the project will result in a 30% reduction in GHG emissions per barrel produced. Overall, the project will increase the site's production by ~10,000 bbls/d.

The project will involve the construction of a standalone facility called the Diluent Recovery and Injection Facility. Construction includes:

- Tanks and vessels similar to those at the two existing facilities at Spruce Lake.
- A 3.5 kilometre underground pipeline running from Spruce Lake Central to supply diluent to the DilSAP facility.
- Various above-ground pipelines (for steam, emulsion and fuel gas) connecting Spruce Lake pads to the facility.
- In addition to the construction of the DilSAP facility and infrastructure, the project will also include minor facility modifications at both existing Spruce Lake Central and Spruce Lake North facilities.

Construction of the new facility will begin later this year and will continue throughout Q1 2027. Anticipated start-up and operation of the site is anticipated in late Q4 2027.



Rendering of the completed DilSAP facility.

Spruce Lake Thermal Operations

- One of nine producing Lloydminster thermal assets, all in Saskatchewan.
- Spruce Central and Spruce North located ~90 km from Lloydminster and 15 km from Mervin.
- Facilities use steam-assisted gravity drainage (SAGD) drilling.
- 25 full-time staff.
- Approximately 28,000 bbls/d production. Spruce Lake Central began producing in 2020; Spruce Lake North came online in 2022.

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Spruce Lake DiSAP project

DiSAP facility

- Located approximately 3.2 kilometres east of Spruce Lake Central, the facility separates diluent from the fluids produced from the well pads.
- Recovered diluent is reinjected with steam into the wells while the gas and emulsion (oil and water) are transported via pipeline to the Spruce Lake Central and Spruce Lake North facilities for further processing. This helps reduce the amount of new diluent that needs to be brought to site.

The facility will include:

- Equipment such as tanks and vessels to separate and recover diluent.
- Compressors and pumps to move products through the system.
- Pipelines connecting the facility to existing infrastructure.
- A flare stack used for safe operations.

Project benefits

This project will optimize and increase production within the Spruce Lake reservoir. Beyond increasing production, the DiSAP project will also:

- Reduce the amount of steam and means less water required per barrel produced.
- Lower carbon intensity per barrel produced.
- Improve resource recovery, potentially increasing reserves recovery from existing well pads.
- Lower per barrel operating costs through reduced steam requirements.
- Generate additional municipal tax revenue through project development and operations.
- Create jobs in the region, with 200 workers at peak construction and four additional permanent operational roles.



Spruce Lake DiSAP project overview map.

Spruce Lake DilSAP project

Environmental mitigations

Monitoring

We have ongoing environmental monitoring at our Spruce Lake operations:

- Continuous ambient air monitors surrounding the Spruce Lake facilities monitoring for hydrogen sulphide (H₂S), sulphur dioxide (SO₂) and nitrogen dioxide (NO₂). Results from this monitoring are reviewed by Cenovus staff on a continuous basis and submitted to the Saskatchewan Ministry of Environment upon request.
- Shallow groundwater monitoring is conducted at the two plant facilities (Spruce Lake Central and Spruce Lake North). Results from this sampling are compiled and reviewed annually and provided to the Ministry of Environment upon request.
- Surface water runoff collected at facilities and well sites is tested prior to pump-off. The DilSAP pads will have these same surface water testing and release procedures in place once operational.

Water protection

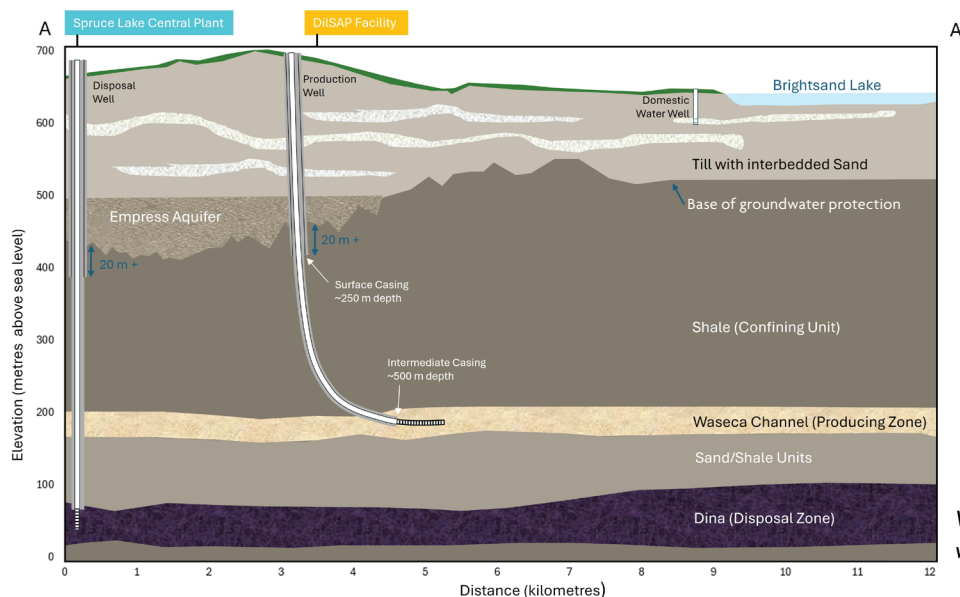
Resource wells are designed with multiple safeguards to protect fresh groundwater and surface water.

Surface casing:

- Large steel pipe is installed from the surface down past all freshwater aquifers.
- Pipe is cemented in place, sealing off the well from the aquifers, preventing water, gas or fluids migrating from deeper formations to freshwater aquifers.
- Cenovus best-practice is to install surface casing a minimum of 20 m deeper than the base of groundwater protection. This exceeds Saskatchewan's Casing and Cementing Requirements.
- In the Spruce Lake project area, the base of groundwater protection ranges from ~125-290 m in depth.
- Brightsand Lake is ~12 m depth based on public data.

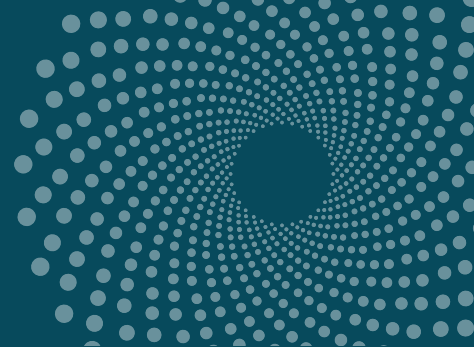
Intermediate casing:

- As drilling goes deeper, another pipe is installed and cemented into place.
- Provides an extra layer of protection, separating deeper rock layers and fluids from freshwater aquifers above, which is already protected by the surface casing.



Well design to protect water resources.

Spruce Lake DilSAP project



Steam assisted gravity drainage (SAGD) vs. solvent-aided process (SAP)

SAGD

Cenovus was one of the pioneers of steam-assisted gravity drainage or SAGD, which allows us to access heavy oil deposits that are too deep to mine. During the SAGD process, two horizontal wells are drilled: an upper well injects steam while the lower well collects the heated bitumen and water.

Diluent SAP

DilSAP technology is an enhancement of SAGD. Instead of relying solely on steam to mobilize heavy oil/bitumen, a light hydrocarbon solvent (diluent) is co-injected with the steam. The solvent helps further dilute the bitumen, making it more mobile and easier to extract, transport and process. The solvent is then recovered and reinjected into the reservoir.

This process results in more efficient water usage, allowing for the diversion of excess steam to new wells and increased production rates using the same amount of water as prior to the DilSAP project. In this project, the diluent is condensate, a liquid similar to diesel. Condensate components occur naturally in the reservoir.

