Suncor Pond 5

Calgary, Alberta, Canada

Keller developed equipment and procedures enabling the safe installation of the drainage system from on top of a floating coke cap working platform.

The project

Suncor’s Pond 5 is approximately 1.6 km by 2.5 km in plan dimensions and 40 m deep. The pond is filled with fluid-like clay tailings with shear strengths typically less than 1 kPa and average water content of 114%. Mine regulators in Alberta required the construction of a permanent cap on the pond and reclamation of the land. A solution was needed to dewater the fine tailings and increase their shear strength to allow for the construction of the cap.

The challenge

Northern Alberta is a remote location with harsh winter working conditions. The working platform consisted of a floating cover over fluid low-strength tailings, presenting equipment and personnel safety issues. Keller was tasked with finding a way to anchor wick drains at a depth of 16 m in soft fluid/low strength tailings.

The solution

Keller safely and efficiently installed 6.2 million linear meters of wick drains from on top of the floating cover over the soft tailings. The wick drains produced between 0.5 to 1.5 million gallons of water per day, rapidly accelerating the shear strength increase in the tailings, which allowed for subsequent permanent capping of the pond. Keller utilized a proprietary data acquisition system to facilitate the layout of the wicks, provide installation information, and produce as-built drawings.

Keller was awarded Suncor's "President's Operational Excellence Award for Personnel Safety."

Project facts

Owner(s)
Suncor Energy

Keller business unit(s)
Keller

Main contractor(s)
Keller

Engineer(s)
AMEC

Solutions
Groundwater control

Markets
Mining

Techniques
Wick (PVD) drains

Email address
info@keller-na.com

Phone number
1 (800) 456-6548