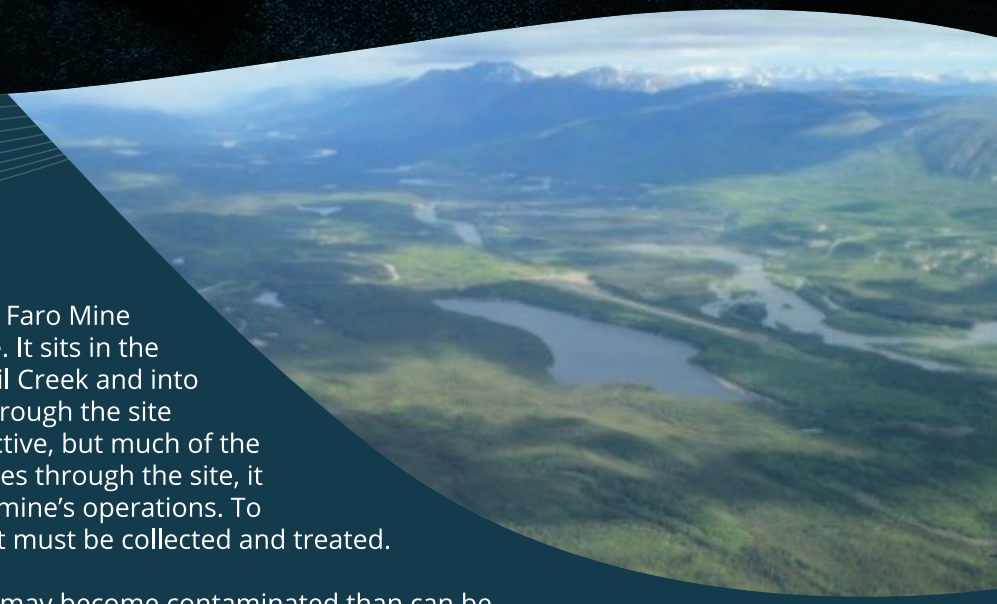
Faro Mine
REMEDIATION PROJECT

Water Management



Water Balance

Known as Tse Zul in the Kaska language, the Faro Mine site is located within the Pelly River drainage. It sits in the Rose Creek watershed, which flows into Anvil Creek and into the Pelly River. Some of the water flowing through the site follows channels built when the mine was active, but much of the water flows underground. As the water passes through the site, it often meets contaminants from the former mine's operations. To protect human and ecological populations, it must be collected and treated.

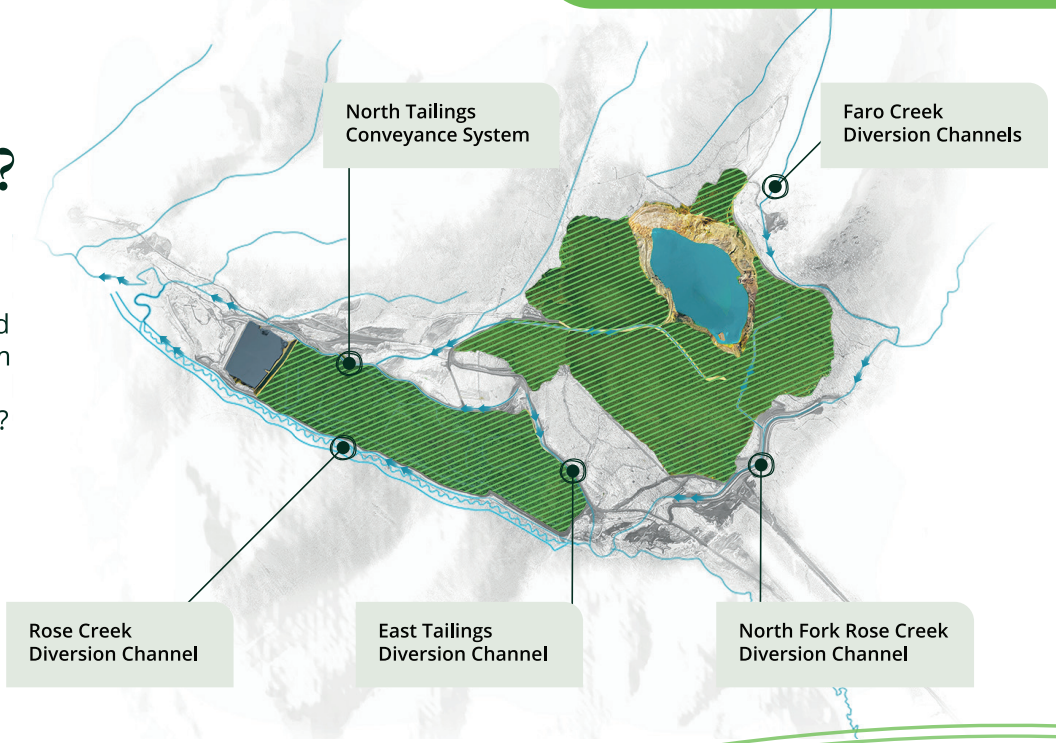
During the spring and summer, more water may become contaminated than can be treated at once. When this happens, the excess contaminated water is pumped into the Faro Pit for storage. Water is taken from the Faro Pit, treated, and then released into Rose Creek during the ice-free months. In the future, it is expected that more water will need to be collected and treated (as both the climate and the contamination from the mine evolve). To prepare for this need, a new Faro Water Treatment Plant is being planned.

Image: Pelly River Valley

For more information refer to the Water Treatment Fact Sheet.

What's the goal?

Overall the remediation plan is designed to protect the human and ecological populations downstream of the site. What do we mean by human and ecological populations? We mean all people, plants, and wildlife in the environment – that includes birds, fish, aquatic plants, and aquatic invertebrates.



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4 Main types of water are present at the Faro Mine site:

- *Non-contact water:* surface water that can be safely released into the environment as it is.
- *Mine water:* groundwater and surface water that cannot be released into the environment without first being treated at a water treatment plant.
- *Construction water:* surface water that can be released into the environment after the dirt in the water has settled.
- *Surface runoff water:* surface water that can be released to the environment after the dirt in the water has settled. Over the long term, site management controls (e.g., pit covers, reclaimed gravel) are removed.

Managing Clean Water Flow

Figure: Example of water flowing

A key aspect of the water management approach is to "keep clean water clean" as it moves downstream off site, to help reduce the amount of clean water that requires treatment. This will be achieved by keeping clean water away from contaminated mine materials (by covering contaminated areas with engineered covers). It will also be achieved by diverting channels to keep clean water away from contaminated materials.

Many of these diversions are used by local fish species such as Arctic Grayling. Elements that support fish habitat and passage will be included as diversions are upgraded. Fish will be kept out of some areas like channels on engineered covers to help ensure they are kept safe.

Figure: Network of clean water diversions

To ensure the diversions are keeping water clean, the project team will continue to routinely monitor the water quality and aquatic ecosystem at multiple locations — enacting action plans as necessary. All information from this monitoring is reported through the project team's Technical Review Committee, and publicly available through the Yukon Water Board.

Image: Arctic Grayling at the Faro Mine Site

Managing Clean Water Flow

In addition to clean water diversions, the Faro Mine site also has diversions that collect or carry water that has come into contact with contaminated areas of the site, and may now also be contaminated. For example, as shown in the picture right, contaminated water flowing through the Faro waste rock dumps is collected in a channel before it can reach the North Fork of Rose Creek. Pipes then direct this water to the Faro Pit where it is stored for water treatment.

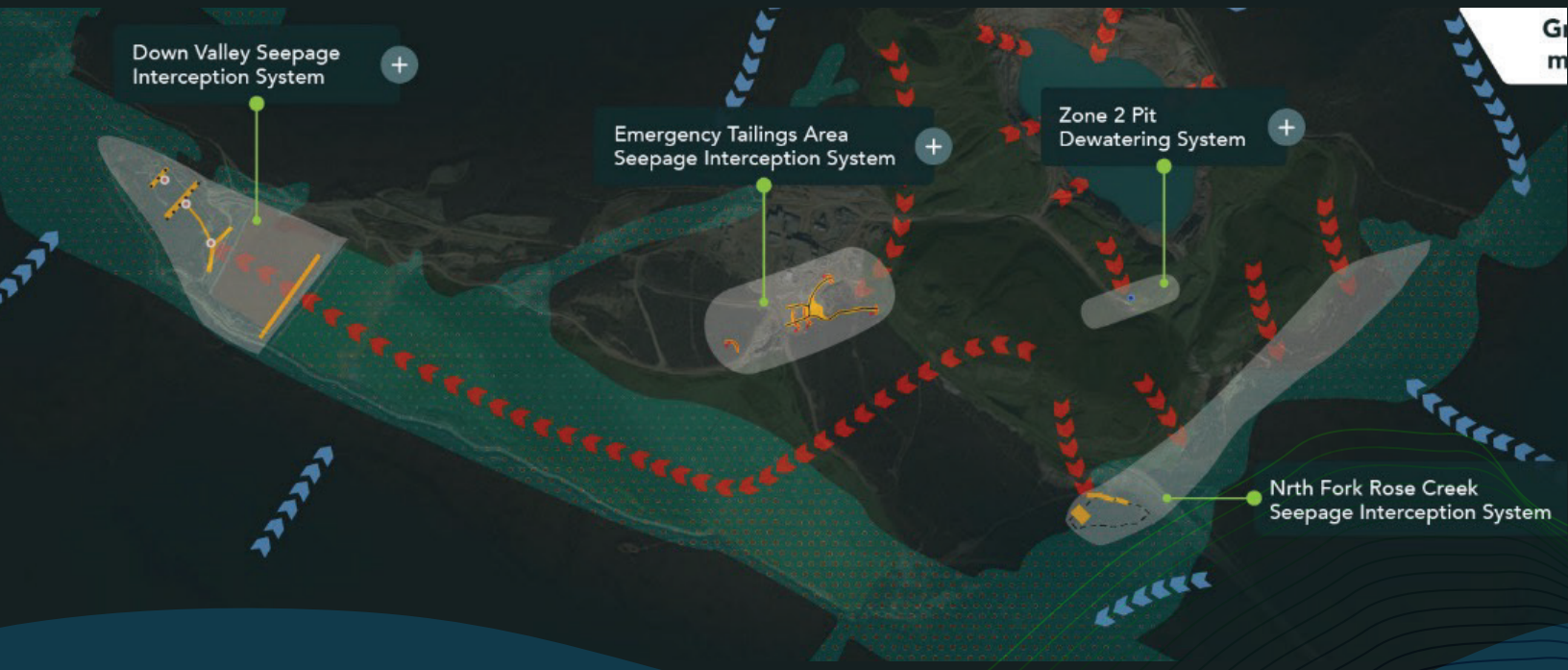
Ground water moves through the Faro Mine site and some additional water seeps into the ground on the site. This groundwater comes into contact with contaminated materials and this mine water is collected using pumps that move the water through pipes to holding ponds and the Faro Pit for treatment.

Image: Contaminated water collection channel

Construction Water and Surface Runoff Water

Upcoming construction activities during the remediation of the Faro Mine site will generate water that doesn't come into contact with mine wastes but is murky and cloudy from picking up soil. This water will be carefully managed. Even if the soil is clean, the increased amount of dirt in the water can harm people, plants, fish, and wildlife. Water leaving these areas will be tested to ensure it is safe for all human and ecological populations downstream.

Figure: Contaminated water interception systems across the site



For More Infomation

Faromine.ca
faromine@rcaanc-cirnac.gc.ca

1-800-661-0451

Faro Mine Remediation Project
415C - 300 Main Street
Whitehorse, Yukon Y1A 2B5

Scan QR Code to learn more

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