

# INNOVATIVE APPROACHES FOR PROTECTING THE ENVIRONMENT

## Storing mine waste safely and responsibly is a top priority for Dalradian Resources and a fundamental part of the planning application for our proposed gold mine at Curraghinalt in west Tyrone.

Most of the waste from the mining process, consisting largely of uneconomic rock and processed ore, will be stored underground in keeping with a key objective of the EU Mining Waste Directive and to minimise disruption to the local landscape. A small proportion of waste rock and ore which has been processed solely through physical means – including crushing, grinding and flotation, the industry term is “flotation tailings” – will be stored on the surface.

We plan to manage the surface disposal of this waste material using a method known as dry stack tailings. This approach has many advantages over older methods and is widely recognized as a best practice in the mining industry.

Historically, mines around the world have used wet tailings systems, which involve large areas enclosed by dams or berms, with the tailings deposited behind these in a slurry. There are examples, some quite recent, of tailings dam failures, some of which have caused significant environmental damage. We have eliminated this risk by designing a dry stack system for our project.

Dry stack tailings have most of the water removed at source, which explains the name. The water removed from the flotation tailings at the Curraghinalt Project will be recycled for reuse within the mine’s processing plant. After removing the water, the tailings – now dry stack tailings – resemble damp sand and can be piled, shaped and compacted safely and securely.

A dry stack facility is an engineered construction built in a series of layers. Each layer, of - 3m in height, begins with a

“toe” or perimeter of coarse rock, which bolsters the edge of each layer. The damp, filtered tailings are trucked to the area behind the toe and compacted. Once a layer is filled, the next level above is started, repeating the same technique.

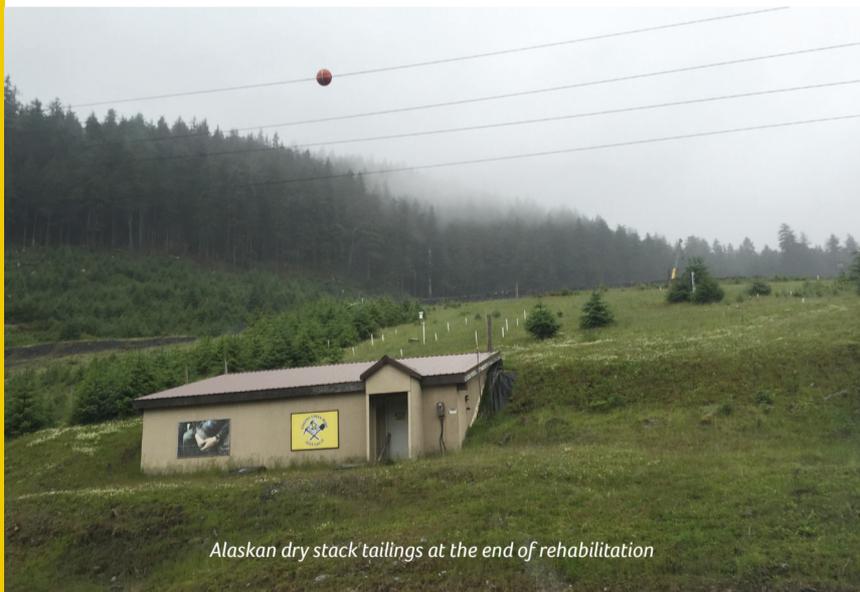
This process requires less land, as the dry stack can be built and contoured in such way that it blends with the surrounding environment. Additionally, dry stacking allows for progressive rehabilitation of the land on which the facility is located. This means that vegetation can be planted, in stages, on the dry stack as mining continues. We will replant the surface using a seed mixture that is in keeping with the neighbouring upland vegetation.

The location for the dry stack has been carefully selected to minimize environmental impact and visual disturbance. The bottom of the proposed facility will be lined to capture infiltration,

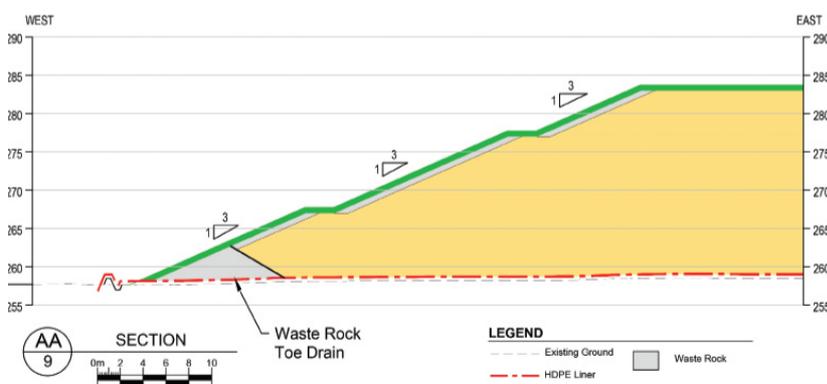
typically from rain, and transfer this passively to water storage ponds, which lead to a state-of-the-art water treatment facility. Discharge from the site will be managed through an agreed, regulated discharge consent, which will be monitored by both Dalradian and the Northern Ireland Environment Agency.

Mitigation measures to manage dust and noise are another important part of the planning application. As is the case at our current exploration site, dust and noise will be regularly monitored.

Whether the issue is dust, noise or tailings, we will maintain the highest standards for environmental protection. Our goal is to ensure that after up to 25 years of operations, our physical legacy will be a green hillside covered with local grasses, bushes and trees.



Alaskan dry stack tailings at the end of rehabilitation



Engineering drawing of Dalradian's dry stack facility

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