Minus Engineering
Less energy, less waste, less cost

NeutraSeal

Reducing the energy cost of mine water treatment by 50%

Water powered water treatment: The technology reduces capital cost due to its modular, scalable design and lower footprint. Operational costs are reduced by harnessing a static head of water by siphon or gravity flow (Patent pending), to displace pumping costs, and by introducing optimised neutralisation and aeration processes (Patent pending).

NeutraSeal Pilot Project

NeutraSeal has been successfully piloted by Minus Engineering and Camborne School of Mines (CSM), University of Exeter, at an abandoned tin mine in Cornwall, UK. Project co-funded (2012) by the UK's innovation agency, the Technology Strategy Board and Minus.

The pilot plant was built with a capacity to treat 72 m^3/day of acid mine water. The project demonstrated NeutraSeal's 50% energy saving compared with conventional High Density Sludge (HDS) plants. Treatment performance was tested by CSM.

NeutraSeal Advantages

1. 50% reduction in electricity costs.
2. Capital cost of plant is circa 30% lower than conventional fixed structure systems.
3. NeutraSeal is scalable, designed to treat flows of up to 2000 m^3/hr.
4. NeutraSeal can treat a variety of water compositions and flow rates, and be adapted to remove specific contaminants (e.g. Mn and SO_4).
5. The process is modular and has a reduced footprint, reducing mobilisation cost.
6. Typically 60% the size of conventional plants.
7. The sealed nature of the system increases its reliability in extreme environments.
8. Metals can be recovered from suitable waters to provide a revenue stream.

A demonstration of the pilot plant can be arranged upon request.

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