

Clarifiers

DAF units

OWS

Filter Presses

Siltbuster's pH Adjustment Solution For Groundwater Headache

Siltbuster Limited designed and implemented a bespoke water treatment system to treat 5000 m³ of highly alkaline (pH 14) excess waste water at a construction site in South Wales.

The bespoke three stage treatment process, capable of treating 40 to 50 m³ of feed water per hour, eliminated the need for road tankers to remove the water for off-site disposal, which would have been prohibitively expensive.

Solution

In the first stage of the process, carbon dioxide is injected into the feed water to partially lower the pH causing solids to precipitate within the Stage 1 Mixing Tank.

The treated water is then passed into two clarifier tanks (Stage 2) where the solids settle and are collected. Hopper units at the base of the clarifier then thicken the sludge which is periodically removed.

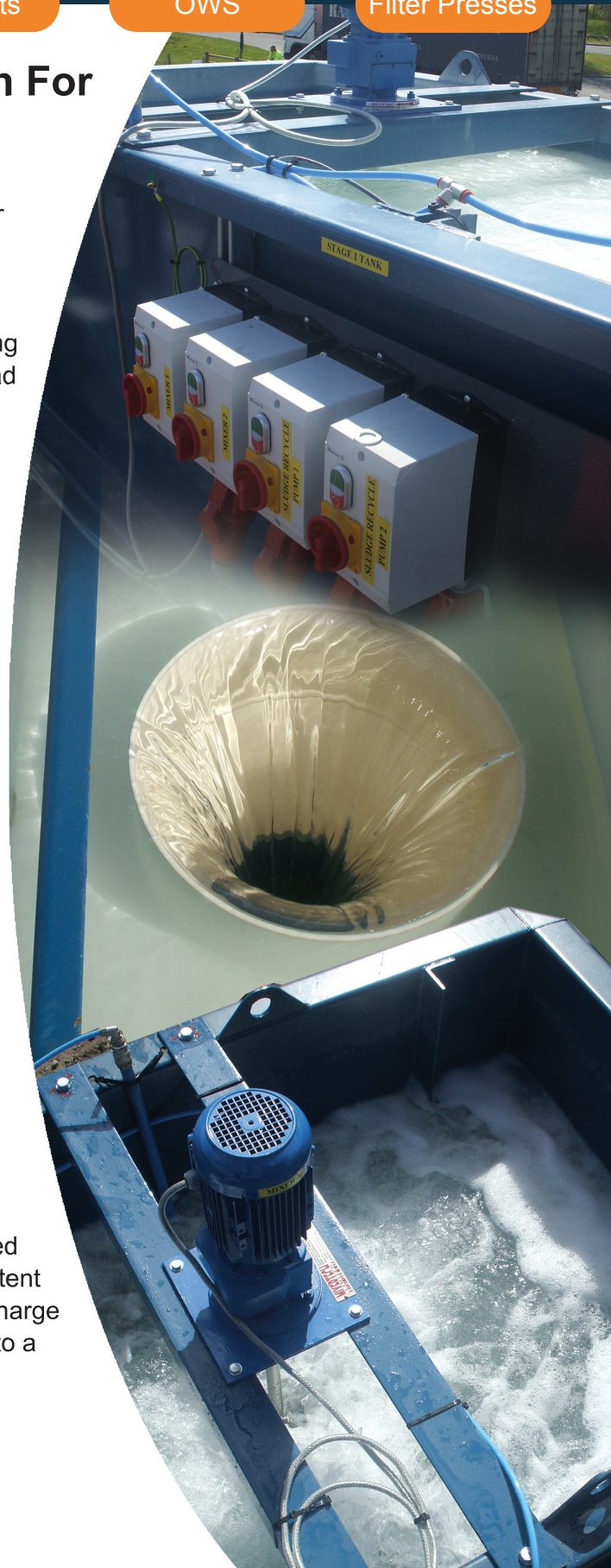
To ensure the discharged water was within required pH limits (pH 6.5 to 8.5), the clean overflow from the clarifier tank undergoes final pH adjustment (carbon dioxide injection) within a separate mixing tank (Stage 3).

The injection of carbon dioxide into the Stage 1 and Stage 3 tanks is automatically controlled to ensure that the pH is maintained at the required levels and is automatically adjusted in response to changes in the pH of the feed water.

Discharge Consent

Testing of the discharge water quality confirmed that the treated water had a near neutral pH with a total suspended solids content of less than 30mg/l. This was within Environment Agency discharge consent conditions and meant the water could be discharged to a local water course, a site of Special Scientific Interest (SSSi).

Front image shows stages 1 to 3 of pH adjustment



Transportable

Modular

Affordable

The Benefits of Carbon Dioxide

The use of carbon dioxide to neutralise the highly alkaline water has several advantages over the traditional approach of using concentrated acid:

- Neutralisation is more easily controlled reducing the risk of the pH of the treated water becoming too acidic (less than 6.5)
- Health and Safety concerns are reduced, plant operators are not required to work with strong acids
- Decommissioning of the treatment system is simplified. In a traditional system excess acid would need to be disposed of as a hazardous waste whereas partially spent carbon dioxide cylinders can be returned to the supplier.



Crystal clear discharge water



Automatic Adjustment and control of pH



Three Stage pH Adjustment using *Siltbuster* treatment plant

For more information on how *Siltbuster* can solve your groundwater headaches call: 01600 772256 or email: enquire@siltbuster.com



Carbon Dioxide - easy to store and easy to handle