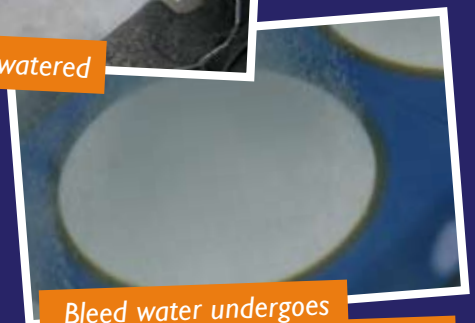
Treating high pH water from truck mixer chutes

:a case study

Concrete truck chute is washed...

...into RCW unit

Solids are dewatered



Bleed water undergoes pH adjustment before discharge

Siltbuster Limited's unique RCW – Concrete Washwater Treatment System – has helped minimise environmental impacts, reduce costs and adhere to environmental best practise on a multimillion pound project for Airbus Operations Ltd in North Wales.

With an average of 60 deliveries and concrete truck chute washouts per day and over 53,000m³ of concrete required, there was a considerable volume of concrete washwater that had to be dealt with on-site. The RCW system provided the ideal solution.

Siltbuster® *the dirty water specialists!*

Visit us at www.siltbuster.com

Treating high pH water from truck mixer chutes
:a case study

The Problem

In 2008, Airbus UK started construction works on its new manufacturing facility for wings of the new Airbus A350. Airbus appointed Morgan Sindall to undertake the construction of the 52,000m² manufacturing site. Structurally, the facility will comprise of a steel frame structure in a three bay configuration. To support this vast structure, highly-complex machine bases and other production areas, some 8,000 piles have been installed.

The site has high-level groundwater issues and is within an area regulated by the Environment Agency. Allowing high pH water to seep into the ground would pollute the groundwater system.

From the outset, the environmental characteristics of the building and the use of best practice were included within the client's brief. It was apparent that the usual construction site practice of using plastic-lined skips for crude concrete washout facilities was inadequate. For a project of this size, the number of skips required would also have implications in terms of available space on-site and the lack of pH adjustment meant that an alternative solution was required.

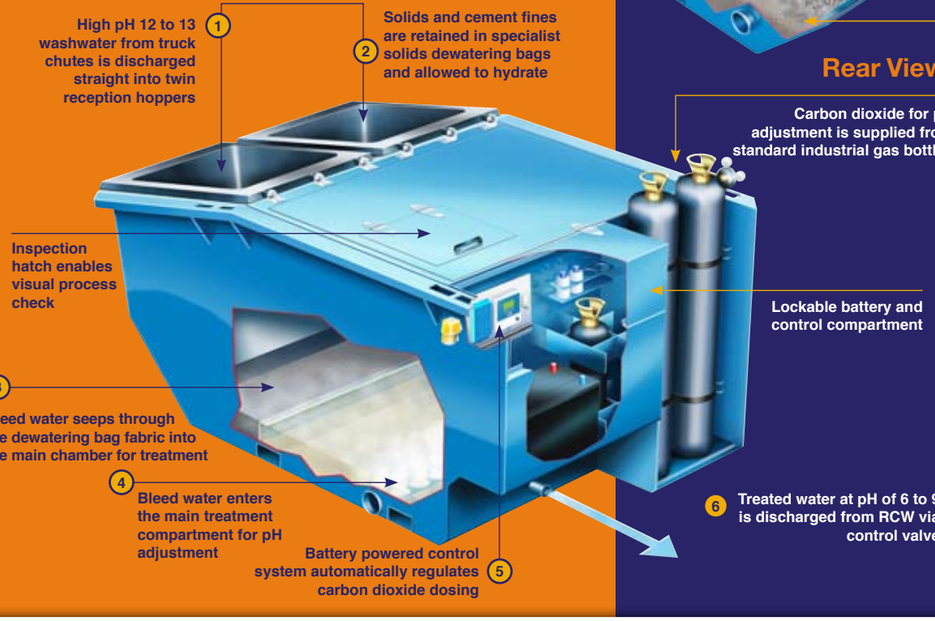
"The RCW provided suitable containment for the concrete washwater within a confined area and then treated it to the appropriate pH level to discharge. This system enabled us to treat large quantities of concreate washwater, using minimal labour and manual handling."

Iona Hughes, waste manager for ASH Waste Services

How it works

Front View

Rear View



The RCW – Concrete Washwater Treatment System

The Solution

The project team approached Siltbuster for advice on its newly developed RCW – Concrete Washwater Treatment System – an innovative system designed specifically to treat high pH concrete washwater from concrete trucks, making it ideal for this sort of project.

The first Siltbuster RCW unit was introduced to site in March 2009. Two more were soon in place to control and treat washwater generated on-site, with a further two made available for use when required during larger concrete pours. During the pouring of the machine bases, truck movements peaked at 283 over the course of just one weekend, necessitating the use of four RCW units at once.

Concrete solids were captured in the bags, crushed and then reincorporated into the project as fill material for beneath hard standings, car parks and pathways.

The Achievements

By using the RCW System, the project was able to:

- Treat some 177,000 litres of concrete washwater
- Avoid the discharge of high alkaline cementitious waste water polluting the local groundwater regime
- Avoid costly off-site treatment of large volumes of water by treating it on-site
- Capture and reincorporate 190m³ of waste concrete into the permanent works thus avoiding expensive off-site processing or disposal costs

Iona Hughes, waste manager for ASH Waste Services, one of the supply chain companies on the project, comments: "99% of all waste materials were recycled or reused on-site and best practice was always sought to resolve potential environmental issues. The RCW enabled us to treat large quantities of concrete washwater, using minimal labour and manual handling. During the larger pours on-site, it enabled us to carry out this activity without having to bring in the estimated 15 skips that we would have required had we used the skip storage method."

Richard Coulton, managing director at Siltbuster, adds: "Our RCW system has once again proven to be robust and reliable on a large scale project that used extremely high volumes of concrete in a short space of time. The project recognised its value and the potential return on investment, as well as the many environmental benefits associated with applying waste management best practice."

Visit us at *www.siltbuster.com*

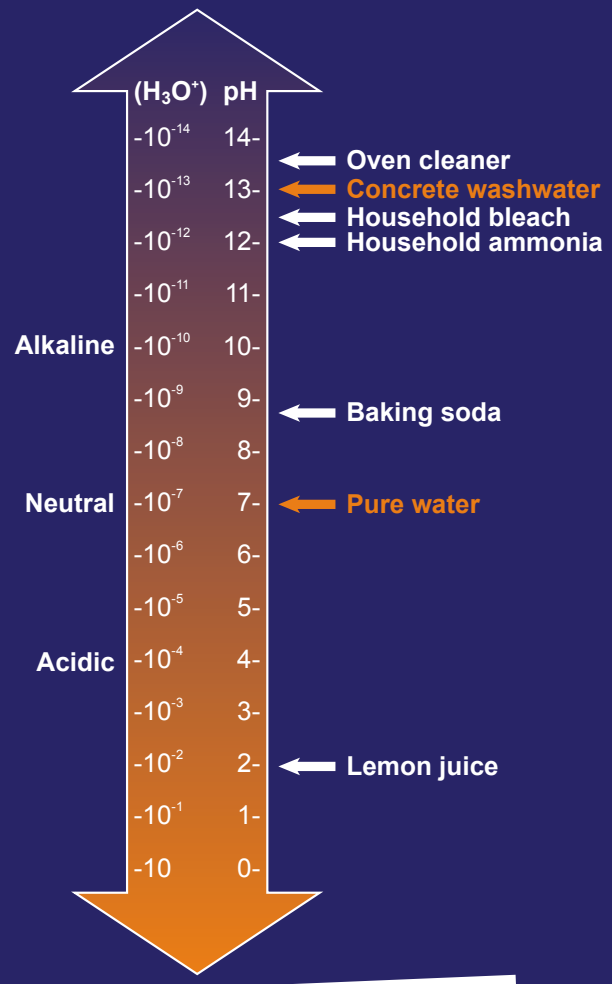
The Benefits

of the RCW – Concrete Washwater Treatment System

Siltbuster® the dirty water specialists !

1. It provides a simple solution for the handling of washwater from concreting operations, minimising pollution risk and its potential adverse environmental impact.
2. It combines solids removal and carbon dioxide pH adjustment in a single compact, easily transportable and integrated unit.
3. The automated process reduces manpower on-site and takes the guesswork out of pH adjustment.
4. It enables controlled neutralisation of the water before discharge or reuse.
5. Its small footprint and battery powered operation means it is also ideal for small inner city or remote sites.
6. It enables the concrete solids to be captured for recycling on-site if necessary.
7. Health and safety concerns are reduced by the use of carbon dioxide, meaning plant operators are not required to work with strong acids to adjust pH levels.

Did you know concrete washwater has a high pH and is highly alkaline?



How do you handle yours?

The benefits of carbon dioxide for pH adjustment

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

1. Neutralisation is more easily controlled eliminating the risk of the pH of the treated water becoming too acidic (less than 6.5).
2. Health and safety concerns are reduced, plant operators are not required to work with strong acids.
3. 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.

Contact us

T 01600 772256
F 01600 775312
E enquire@siltbuster.com
W www.siltbuster.com

Unipure House
Wonastow Road
Monmouth
NP25 5JA