



THE
SPRAY NOZZLE
PEOPLE

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www.spray-nozzle.co.uk

Case Study

STORM TANK CLEANING

STORM WATER ATTENUATION TANK TANK WASHING SOLUTION

The cleaning of storm water attenuation tanks is becoming more and more of an issue for the water industry. The residue left behind when storm water is returned to the sewage system can cause odour pollution. This is problematic when housing is located nearby and can result in significant fines for the water companies if not addressed. The manual cleaning of such tanks after storm events is very costly so automated cleaning systems are required. However, the size and location of these tanks can be problematic when it comes to designing tank cleaning systems.

► PROBLEM: ODOUR POLLUTION FROM DIRTY TANKS

One of the UK's large water companies approached The Spray Nozzle People to help combat odour pollution from a series of large open-topped storm tanks. There were 4 tanks each of which was 30 meters by 13 metres with an average depth of 4 metres.

Semi regular manual cleaning was not satisfactory and the UK environment agency had been threatening fines if the odour problem was not solved. This was because local residents had been complaining about the smell from the tanks. Even the local MP had been involved.

► SITUATION: LARGE & AWKWARD TO CLEAN

Regular manual cleaning was considered to be prohibitively expensive as a long term solution. Several methods of automated tank cleaning were considered but the design of the tanks didn't lend themselves well to tipping bucket flush systems. Modifying the tanks to accommodate such a system would have been also very expensive. Eductor swirl systems were also not really suitable for this tank layout and were also deemed to be not effective enough at removing odour causing residues.





WHY CHOOSE SNP FOR YOUR TANK CLEANING NEEDS?

- The ability to solve unique and complex process challenges
- ISO 9001:2015 Certified
- Custom nozzle design and manufacturing with consistent quality assurance

With SNP you get our world-class customer support from an industry pioneer who has been creatively solving problems for many decades.



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The Solution

We proposed the use of our Storm Blaster tank cleaning heads. The size of the tanks meant that three Storm Blasters were required per tank. These units are based on tried and tested marine tank cleaning systems used to clean large oil tankers.

Normally these powerful rotary jet cleaners would clean the tank in sequence working down the gradient of the tank from top to bottom. In this particular tank layout it was found that an initial clean of the lower part of the tank, near the draining point, was required to clear the accumulated residue. This would then allow the wash fluid from later stages in the wash cycle to flow and drain effectively.

CHALLENGES

- The shallow gradient meant an initial "clearing" cycle was needed at the lower part of the tank.
- The open tanks mean that the tank cleaner needed to be positioned on mounting arms from the side.
- The cleaning system needed to be robust and able to operate outside, exposed to the elements.
- Ideally final effluent would need to be used as the cleaning liquid so as to reduce the use of potable water.

- ▶ VERY LARGE TANKS
- ▶ POOR FLUID DRAINING
- ▶ OPEN TANKS MEANT AWKWARD /SUBOPTIMAL POSITIONING
- ▶ CLOGGING ISSUES FROM USING FINAL EFFLUENT AS THE WASH FLUID

ADVANTAGES OF THE SNP STORM BLASTER

- Robust design able to cope with the elements.
- Powerful cleaning jets with sufficient length to clean the large tanks.
- Sealed gear box allowing high particulate fluid to be used as the cleaning medium i.e. final effluent.