

# REDUCED DOWNTIME FOR SEVERN TRENT

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## APPLICATION DATA

- Primary sludge 3% ds
- Conveying capacity 45m<sup>3</sup>/hr
- Discharge pressure 2 bar
- Suction lift 5 m

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## KEY SPECIFICATIONS

- 5 metre suction lift
- Longer service intervals - correct pump selection
- Easier maintenance when required

## BACKGROUND

Severn Trent Water Plc is located in the catchment area of two of Britains largest rivers - the Severn and the Trent and is responsible for waste water treatment and disposal for over 8 million people in the midlands region. In addition to 37 large sewage treatment works the company operates smaller local settlement tanks where primary sludge is produced from the settlement of raw sewage in large tanks.

One of these plants, an unmanned site with settlement tanks and pumped primary sludge removal at Shepshed had problems with unplanned downtime and high maintenance costs associated with their primary sludge pumps. Two progressive cavity pumps were situated in a deep pit to avoid a large suction lift, however this meant that all maintenance came with a high overhead; a three man team, confined space work permit and lifting equipment was required for any service work.

## TASK AND TARGET

Severn Trent wanted to improve productivity and reduce the maintenance costs associated with these pumps. Downtime due to blockages and pump failures was every 4 months on average and this, combined with high costs of maintenance of these vertically mounted pumps, was costing Severn Trent £24,000 per year for 2 pumps. SEPEX engineers were invited to survey the installation with the aim of improving operational efficiency and reducing downtime. A further request was to improve Health and Safety by removing confined space working and to reduce the costs of maintenance associated with primary sludge pumping.



SEPEX-Solution for Severn Trent Water

# HIGH SAVINGS

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## **COST SAVINGS**

- Maintenance costs reduced
  - Service life extended
  - £24,000/year
  - 8 year savings £140,000 after project costs
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## **SEEPEX PRODUCTS**

Primary sludge treatment:  
BN 130 - 6L

## **SOLUTION**

Our installation and pump experts examined the existing installation and the operational requirements. They identified that with some modifications to the pipework a surface mounted progressive cavity pump would be the best solution. The surface mounted pumps from the BN range are able to produce suction lifts of up to 9 meters; surface mounting removes the high maintenance overhead of confined space working and the need for lifting equipment, thus reducing maintenance costs.

The pump size recommended was a higher conveying capacity than the original, with a larger cavity size to better handle solids in the primary sludge, thus reducing blockages. The pumps also have a longer service interval as they are operating at a slower speed to convey the required capacity.

SEEPEX provided a complete supply and installation package, making the necessary pipework changes to ensure lowest maintenance costs.

## **RESULTS**

After 20 months the project savings outweighed the installation costs. The pumps have been installed for 8 years to date with no downtime, and service costs of zero, representing an ongoing saving of £24,000 Per Year and a total saving of £140,000 after project costs. When maintenance is finally necessary the costs will be reduced by removing the need for lifting equipment and confined space working practices and planning. Health and Safety has also been improved by the removal of confined space working requirement.

## **BENEFITS**

- Increased service life – from 4 months to 8 years (to date)
- Improved Health and Safety - no confined space working
- Reduced maintenance costs - £24K per year saving