

THINK BIG

BACKGROUND

Thames Water operates one of the UK's largest sewage treatment plants. Located in West London, it treats sewage for around 2.1 million residents. A plant of this size requires both pumps and service levels that are extraordinary. SEEPEX delivered both.

Originally built in the 1930s, the Mogden sewage treatment plant has undergone major expansions over the decades to keep up with exploding population growth.

SEEPEX has a longstanding relationship with Thames Water, having worked with them in framework agreements for over 20 years to reduce the cost of ownership of progressive cavity pumps and improve the efficiency of processes where these pumps are used.

TASK AND TARGET

SEEPEX were approached by an EPC (Engineering-Procurement-Construction) contractor for a pump solution to convey 180 m³/h of sludge with a dry solids content of 6-8% to a sludge dewatering facility 18.5 km away. This was no small challenge given the distance, capacity and the dry solids content of the sludge to be conveyed. Various pump technologies were reviewed. Some were not able to handle the high dry solids content, while others required either multi-stage pumping or had the potential of generating high pulsation spikes.



Thames Water Ltd. is the largest Waste water company in the UK.

APPLICATION DATA

- Conveying slurry with a dry solids content of 6-8%
- Transfer distance: 18.5 km
- Capacity: 180 m³/h

KEYFACTS SPECIFICATIONS

- On start-up, frequency-controlled drives slowly accelerate the large volume of sludge in the discharge pipework preventing pressure spikes
- Extraordinary pumps convey
 6-8 % ds sludge over a distance of
 18.5 km without investing in
 intermediate pump stations

COST SAVINGS NO MULTI-STAGE PUMPING

REDUCED INVESTMENT

LOW LIFECYCLE COSTS

SEEPEX-PRODUCTS

- Pump range NS, N300-36
- Capacity: 180 m³/h
- Lengths: 11m
- Weight: 7 tons
- Driving power: 250kW

GIGANTIC PUMPS FOR LONG DISTANCES

SOLUTION AND RESULTS

The selected pumps could easily handle the 6-8 % ds slurry and had the ability to pump the 18.5km without any need for intermediate pump stations. In addition, frequency-controlled drives were fitted so that the large volume of sludge in the discharge pipework was accelerated slowly on start-up, thereby preventing pressure spikes.

"The extraordinary SEEPEX N300-36 long distance transfer pumps were a milestone in technological development and the biggest progressive cavity pumps in existence at that time. Both in terms of weight at seven tons and lengths over eleven meters, and fitted with 250 kW drives.", states Jörg Brune, Head of Mechanical Development & Innovation Strategies, SEEPEX Gmbh.

A SEEPEX inter-departmental project team of 30 people worked together to design, manufacture and deliver these giant pumps in record time.

Almost 20 years after their installation in 2003, these gigantic pumps are still in operation, which is a testimony to SEEPEX's workmanship, product quality and service excellence.

BENEFITS

- Reduced investment cost due to elimination of multi-stage pumping
- Substantially lower lifecycle costs due to the pumps' efficiency and reliability compared to other pump technologies