



Reducing local authority operating costs

water solutions

EFFICIENT, RELIABLE WASTEWATER AND SEWAGE LIFTING STATION WITH ZENIT UNIQA

Situation

The second largest expenditure item in local authority budgets is generally the energy costs of wastewater management. These costs are destined to rise as the population increases. It is therefore fundamentally important to maximise the efficiency of wastewater management systems, minimising waste.

In one municipality near Latina, Italy, the operator of the local wastewater treatment plants was faced with obsolete electric pumps which consumed too much electricity and also tended to break down often, causing sudden stoppages of the local authority lifting system.

After the last time the system went out of operation due to a seized pump, the operator contacted Zenit and asked us to design a solution which would eliminate the excessive electricity use and increase reliability, making breakdowns and stoppages a thing of the past.

Solution

The Zenit Group engineers sent to inspect the local authority collection and pumping system found that the energy efficiency and unbeatable reliability guaranteed by Zenit solutions were not the operator's only requirements.

Once on site, it emerged that the pumping station was very close to the sea, and that the wastewater from the civil and industrial drains and the road network had to be lifted all the way to a treatment plant which was several hundred metres away and fairly high up.

So, apart from energy efficiency, the proposed solution had to guarantee high resistance to the abrasion caused by seawater and sand infiltrations, and a high head to overcome the altitude difference and the distance to the main system's collection tanks.

The solution chosen with the operator was to use Zenit UNIQA electric pumps, which, thanks to the large free passage of the channel impeller, are easily able to lift the suspended solids usually found in sewage and first rain-fall tanks. The Zenit Uniqa impeller was also treated with the innovative Molib-tech™ coating.

Benefits

Finding a solution which would solve all the problems of a collection and pumping system quickly and effectively was no easy matter, but thanks to input from the operator we passed the test with flying colours.

With aid of the Zenit Uniqa motors, designed to achieve Premium IE3 efficiency class, we guaranteed the energy efficiency required, together with the head needed to overcome the distance in altitude and cover the distance to the wastewater collection system.



The lifting station and the wastewater plant





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Another very important aspect for the operator was to increase reliability to eliminate the system stoppages needed for pump maintenance. The solution proposed by Zenit also met this requirement. The hydraulics of the Zenit Uniqa were treated with Molib-tech™, a “cold” molybdenum carbide coating.

This process is ideal for preventing serious wear due to erosion or cavitation on pump impellers, suction flanges and bodies. The treatment has no detrimental effects on the performance of the hydraulic parts and increases resistance to abrasion, erosion and wear caused, in this specific case, by contact with sand and small solids. The application of Molib-Tech™ increases the Zenit Uniqa pump's resistance and thus its reliability.

The operator declared itself very happy with the Zenit solution, the Uniqa electric pumps and the efficiency and reliability benefits the system now enjoys, to the advantage of the entire community.



The installation of Zenit UNIQA ZUG OC 200C 75/6 AW



The pit

Customer	Acqualatina S.p.A.		
Company Profile	Integrated Water Service Manager in the Territorial Area		
Location	Latina	Country	Italy
		Area	Europe
Application	Waste water and sewage lifting station for municipality		
Installed Products	Zenit UNIQA ZUG OC 200C 75/6 AW		
Date	March, 2015		