BUROHAPPOLD ENGINEERING

AN OPTIMISED APPROACH TO WASTEWATER MANAGEMENT

TREATED SEWAGE EFFLUENT (TSE) IRRIGATION NETWORK ABDALI, KUWAIT

In order to cope with its water scarcity problems, over the last two decades, Kuwait has vigorously implemented a plan to reuse treated municipal wastewater. The treated sewer water irrigation system at Abdali, a region of Kuwait close to the Iraq border, consists of 700,000km of pipework delivering 100,000m3 treated sewage per day, and has enabled a significant agricultural region to develop in the harsh conditions of the Kuwaiti desert. This unprecedented project is of strategic importance to the Kuwaiti government, who approved the project in a bid to increase national food security.

BuroHappold Engineering was engaged to identify the key strategic proposals required to optimise the installation costs of new pipelines and improve the security and efficiency of the vast irrigation pipe network. The client required support from our specialist technical expert to develop the scope of works to ensure that the most relevant cost-effective and efficient proposals and remedial works were installed as part of the overall strategy for the TSE Network.

The client required our specialist technical expert to develop the scope of works to ensure the installation of remedial works that were cost effective, efficient, and aligned with the strategy for the overall network. Our infrastructure team attended the site in Kuwait for one week, surveying the existing Treated Sewage Effluent (TSE) irrigation network and discussing their initial observations and ideas with the Wastewater Manager of the MPW and the local consultant. We quickly reached a clear and detailed understanding of their requirements.

On returning to the UK, we developed an extensive hydraulic network model to help understand the supply zones, demands, topography and operating pressures of the network. We used this to optimise the design of proposed pipe networks, and develop a scope of works which clearly identified the most effective proposals for new works. Our solutions identified significant capital cost savings and proposed improved operational efficiencies for the existing parts of the network, with improved security of supply and reduced energy costs through a more efficient pumping strategy. The client was delighted with our quick turnaround and close liaison with all key stakeholders.

CLIENT
Ministry of Public Works (MPW)

LOCAL CONSULTANT
IPM

PROJECT VALUE
£2 million

DURATION
2009 - 2010

SERVICES PROVIDED BY BUROHAPPOLD
Project Management Consultancy

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