A'Seeb Costal Strip, Muscat, OMAN

Client: Haya Water
Country: Oman
No. of Redivac Valves: 2,284
No. of Redivac Vacuum Stations: 7
Specialist Feature: The vacuum sewer network will be one of the largest in the world and the largest ever constructed in a single project.

The Sultanate of Oman has experienced significant population growth in recent years. This growth is expected to continue into the near future, particularly in the country's most populous region, the Governorate of Muscat. This has led to the implementation of the Muscat Wastewater Master Plan to address the urgent need for a wastewater management system.

The A'Seeb Wastewater Project is a primary element of the Muscat Wastewater Master Plan. With a project area of 490 km^2, it will provide a new, comprehensive wastewater network for all residents of the A'Seeb catchment area.

A highlight of the project is a network of vacuum sewers. The area covered is a 1-kilometre strip that runs north for 20 kilometres from the A' Seeb International Airport. The vacuum sewer network is the largest ever constructed in a single project.

In May 2008 Iseki Vacuum Systems were awarded the contract to supply 7 vacuum stations and more than 2,200 Iseki Vacuum Interface Valves.

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A'Seeb Costal Strip
OMAN

Vacuum Pipework

The SDR13.6 polyethylene pipework ranges in size from 90mm to 250mm diameter.

Vacuum Station Equipment

7 No. Redivac Vacuum Stations.

All stations contain numerous rotary vane vacuum pumps with ratings ranging from 400 to 630 cubic metres/Hr.

Each station contains 2 No. dry well screw centrifugal impeller discharge pumps.

The vacuum collection vessel volumes range from 20 to 27 cubic metre, each fully protected with epoxy coating and tested to Lloyd's certification.

All stations have separate motor control cabinets in air conditioned rooms. They are all fully automatic with programmable PLC. All pumps start in rotation and all operating conditions are monitored via station telemetry.

Bespoke "Interface Valve Monitoring System" was designed and supplied by Redivac. The systems monitor the open / closed mode of each interface valve located around the sites.

Summary

The Vacuum Way proved the ideal solution for the A'Seeb costal area where flat terrain, sandy soil, and a high water table are important design considerations. By using Iseki Vacuum Systems to serve this area with sewage collection, only shallow excavation were required for installing the vacuum mains and Interface Valve Chambers. These shallow excavations did not require dewatering techniques to be employed and the sometimes fragile underground drinking water supply was not contaminated by salt water infiltration.

Furthermore, In the old town area the use of a vacuum sewer system was particularly important due to the possibility of fast, cost-effective and flexible installation and in the busy commercial district the Redivac system caused very little disruption to normal life.

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