



PROJECT DOSSIER

ODOUR CONTROL FACILITIES SYSTEM (STEP)



PROJECT OVERVIEW

Project	STEP Regional Odour Control Facilities System (FOCS) at WS4 and WS7
Location	Abu Dhabi, UAE
Client	Abu Dhabi Sewerage Services Company
Contractor	Kharafi National
Consultants	CH2M Hill International
Duration	February 2017 till date

The concept of the proposed Strategic Tunnel Enhancement Programme (STEP) system is to use a series of link sewers to intercept flows from existing gravity sewers upstream of the existing pumping stations and transfer the flows by gravity into the deep tunnel sewer, thereby providing relief to the existing main collector system. These flows will again be transferred by gravity via the deep tunnel sewer to centralized wastewater treatment facilities strategically located at Al Wathba, at the

southern end of the metropolitan area of Abu Dhabi.

Odour control is a key component of STEP. A centralized odour extraction approach was initially recommended and validated through detailed modeling. However, ADSSC required greater certainty regarding the volumes and movement of air within the tunnel and link sewers so it directed that physical modeling be conducted to quantify air entrainment values at drop structures and further evaluate centralized versus regional odour extraction system approaches. As an outcome, a regional odour extraction system is implemented at tunnel work shaft WS-4 and at shaft WS-7, with a two stage treatment consisting of bio-trickling filters followed by carbon polishing.



Monitoring solution

Geotechnical and geodetic instruments were installed in diaphragm wall and soil to provide settlement, deflection and deformation data for the verification of initial design of permanent structures and temporary works supporting the excavation.

Turnkey services

Encardio-rite was awarded the sub-contract for complete monitoring works of the project. Scope of works included:

- Supply and Installation of geotechnical/ geodetic instruments
- Monitoring
- Surveying
- Bi-weekly reporting with evaluation & interpretations

INSTRUMENT USED

- **Inclinometers:** Installed in piles to monitor lateral deflection
- **Surface settlement points:** To monitor soil settlement and deformation of ground surface.
- **Optical targets (prism targets):** Installed on capping beams to monitor 3D deformation.

The monitoring data was provided in bi-weekly reports to the Contractor, Client as well as the Consultant with evaluations and interpretation for the variations observed.



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