



In 2017 SUEZ was contracted by the Public Works Authority of Qatar, ASHGHAL, to remediate the Al Karaana Lagoons. The lagoons covered more than 4 square kilometres and are situated approximately 60 km south west of Doha in Qatar. The site had previously been used for dumping up to 60,000 m<sup>3</sup>/day of untreated industrial and municipal wastewater from Doha by tankers over many years.

The reclamation and rehabilitation of these lagoons was decided by ASHGHAL because this area was raising environmental concerns such as potential groundwater pollution and odour nuisances. ASHGHAL projects are committed to the environment and in-line with QATAR Vision 2030.

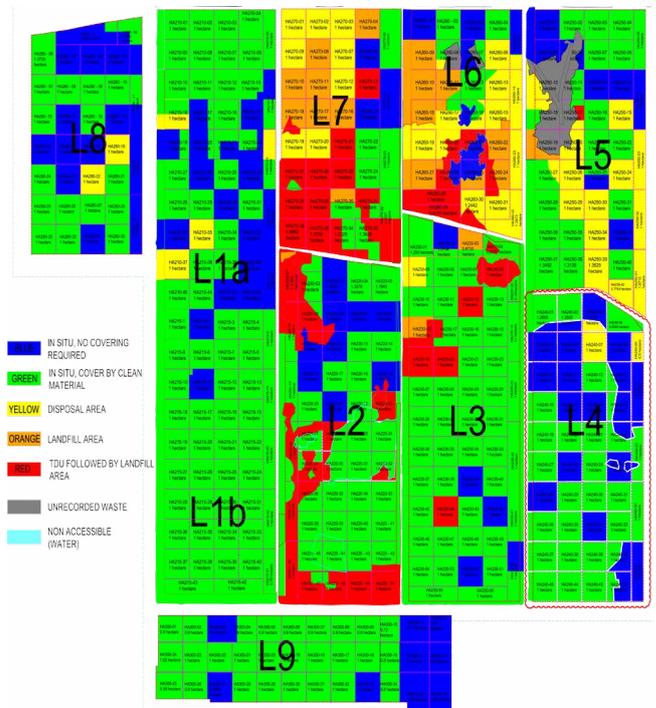
The lagoons contained areas of significant hydrocarbon contamination which required specific remediation. To aid with this, SUEZ purchased two RemScans to measure the concentration of hydrocarbons in the soil.



RemScan being used *in-situ*



Aerial Photo of Al Karaana lagoons prior to remediation



Map of lagoons showing remediation strategy

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The RemScans were used to:

- delineate the areas of high hydrocarbon contamination; by *in-situ* analysis and an on-site laboratory for further testing.
- check that hydrocarbon contamination had been removed on the natural ground, after excavation of the polluted sediments.
- sorting the contaminated material into low, medium or high polluted sediments. Low sediments were stockpiled for natural bioremediation; medium sediments were sent to an on-site dedicated engineered landfill and high sediments were treated through Thermal Desorption Unit.
- conduct tests and experiments on samples in the site laboratory: pilots test; TPH evolution over time.

The project has been a great success and the remediation works will be completed under time and under budget. Part of the success is due to the use of RemScan which provided instantaneous feedback of hydrocarbon concentrations.



Tankers discharging wastewater into lagoons



SUEZ monitoring TPH *in-situ*

*“The RemScan instrument has proven to be a vital tool to carry out all internal and contractual in-situ analysis with the Client and Consultant. RemScan is very easy to use and gives immediate results, yet it remains a sensitive tool. As for laboratory analysis, the sample preparation, infield or in lab, is an important stage to ensure the reliability and repeatability of the measurements. SUEZ greatly appreciates the support from Ziltek, at all stages of the project, whether remote or on-site”.*

Thomas CLOUET – Technical Interface Manager

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