

Clean Fuels Project at Mina Al Ahmadi (MAA) and Mina Abd Allah (MAB) Refineries

Client

Kharafi National for Mechanical and Electrical Works S.A.E.

Scope of Work

Preliminary design
BOQ

Location

Kuwait

Types of Activities

Civil works

The Clean Fuels Project is a major upgrade/ expansion of the Mina Al-Ahmadi (MAA) and Mina Abdullah (MAB) refineries to increase capacities and increase conversion level of Low Sulphur Fuel Oil (LSFO) to lighter end products through processing Bottom of Barrel (BOB) utilizing Atmospheric Residue Desulphurization Unit (ARDS)/ Coker/ Hydrocracker technologies. The objective is to meet 2020 market demands and specifications for transport fuels, increase processing capacity to 800 KBBL/ day (currently 736 KBBL/ day), and to integrate operating capability of the MAA/ MAB refineries with optimum utilization of existing infrastructure.

As part of the Clean Fuels Project (CFP), Kuwait National Petroleum Company (KNPC) plans a major upgrade/ expansion of the MAA and MAB refineries to integrate KNPC's Refining System into one Refining Complex with Full Conversion producing lighter Ends Products. At the MAA Refinery, new CFP units are located in a block south of the existing refinery units and inside the existing refinery fence. The CFP block is bounded by existing underground pipelines from the north, south and east, and two underground sewer lines crosses the site from south to north. The main site elevations for the CFP block is a continuation of the southern edge of the existing refinery site, which is terraced from west to east.

Infrastructure was provided for facilities/ services to support the construction phase of the CFP project by providing temporary utilities. Early works were part of the permanent CFP plant facilities. This included major headers of underground piping under and parallel to the main interconnecting pipe rack. These piping lines were installed to the battery limits of new units. It was proposed to use existing Wadi system, east of the CFP block (Greenfield), with the extension and modification as required, for the storm water drainage. The scope started with a new sump and new concrete lined ditch up to the existing Wadi. The sump receives water discharged by a pipe.

There are four basic site elevations, with the highest on the west and the lowest on the east. Each change in site elevation is approximately 10 feet for Mina AlAhmadi refinery and 13 feet for Mina Abdullah refinery, with an overall difference between highest to lowest of approximately 30 feet for Mina AlAhmadi refinery and 46 feet for Mina Abdullah refinery.

Some new CFP facilities such as the wastewater treatment unit is also located within the existing refinery area. In addition, revamps of existing refinery units and facilities are performed to support the CFP project.

