

Sweidieh Oil Field

Client

Syrian Petroleum Company

Scope of Work

Concept design
FEED
Detailed design
Tender documents
Tender action
Project management

Location

Sweidieh, Syria

Types of Activities

Architectural
Civil works
Communications and security systems
Electrical
Equipment selection
HVAC
Instrumentation
Mechanical
Processing
Piping
Plant design
Structural

To significantly increase the Sweidieh Oil Field liquid/oil production rate, ECG undertook the FEED and detailed engineering of 150 oil wells' gathering stations; three-phase, 2 stage, 3 gas/oil/water separation plants; transmission pipelines, and a number of massive water injection pump stations. State-of-the-art process, piping, corrosion, erosion, hydraulic, electrical, instrumentation control, telecommunications, civil, and architectural engineering consultancy services were effectively delivered since inception of contract award.

The project aimed at constructing three oil gathering and transportation stations (GTS) with remote test

stations (RTS) as well as all necessary pipeline networks and facilities to separate oil from water and associated gases then transport each product in order to optimize their utilization. The project was carefully designed to significantly increase the liquid/oil production rate from the massive formation in Sweidieh Oil Field.

The liquid/oil collected from 150 oil production wells is transported via a network of flow lines to the gathering and transportation stations passing through the remote wells test stations. The main function of each GTS is to handle 20,000 m³ per day of production liquid/oil collected from 50 wells, separate oil with 10-30%





concentration from the associated formation water and gas and test 10 neighboring wells.

The separation process consisted of two stages. Gas separated from Stage I (suspension pressure = 2-3 barg) is transported through gas pipelines to Sweidieh gas plant, while gas separated from Stage II (separation pressure = 0.1-0.2 barg) is first compressed then transported through the same gas pipeline to Sweidieh gas plant. The separated formation water is injected in 60 injection wells, 20 wells for each GTS. The produced oil is transported through pipelines to Tel Addas Terminal Station. The GTS is supplied by electricity through two overhead lines from the existing 20 kV distribution switchgear at the gas turbine power plant. The GTS units are secured by incorporating an emergency shutdown system.

The project consists of flow lines between wells and RTSs, as well as three main oil GTSs; the pipelines between RTS and related GTS to transport produced liquid/oil from RTSs to GTSs; three pipelines between GTSs to Sweidieh gas plant to transport separated associated gas; three pipelines from GTSs to Tel Addas Station to transport oil containing 10-20% of water and 60 flow lines between GTSs injection manifold to injection wells (20 W.I. wells for each GTS).

Each GTS comprises wells inlet manifold; vertical test separator; bulk production horizontal three phases separators (Stage I); bath water type heaters; horizontal two phases separators (Stage II); oil with 10-20% water shipping centrifugal pumps; formation water settling Con Roof tank; formation water pumps; skimmed oil tank; associated gas centrifugal compressors electrically driven, gas/oil/water wells flow lines and pipelines; control and communication systems; control building including control rooms and offices; two flare units, high and low

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pressure type; chemical injection system; fire protection system; lake and drain system; fence around each GTS and rigging system.