

MELLITAH OIL & GAS B.V. JOINT PROJECTS TEAM

STRUCTURES A & E, MELLITAH COMPLEX EXPANSION & CO2 MANAGEMENT INTEGRATED DEVELOPMENT PROJECT

Geomorphological, Geophysical, Geotechnical, and Baseline Surveys

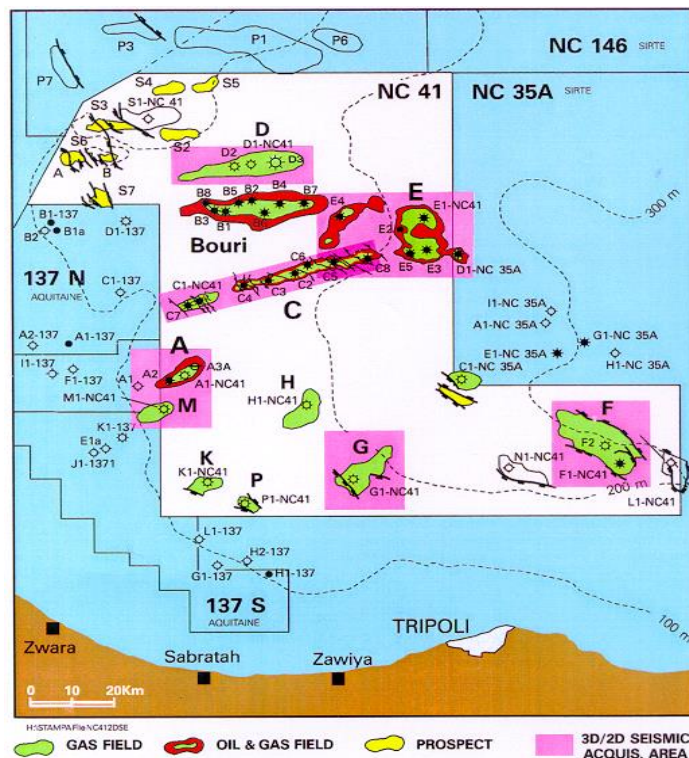
ENQUIRY FOR PREQUALIFICATION (NO. PRQ/JPT/001/18)

1.0. Project Background

The A & E Structures, Mellitah Complex Expansion and CO2 Management Integrated Development Project combines a number of developments offshore and onshore Libya.

Structure A is located in the central part of Block NC41, approximately 75 km from the Libyan coast in a water depth ranging from 93 to 145m. The development envisages the exploitation of the gas and associated condensate from the formations through a wellhead fixed platform located in 96 m water depth at approximately 79 km from the onshore Mellitah Complex.

Structure E is located in the central-eastern part of Block NC41, approximately 125 km from the Libyan coast in a water depth ranging from 205 to 235m. The development envisages the exploitation of the gas, associated condensate and oil from the formations through a wellhead and production fixed platform located in 200 m water depth at approximately 125 km from the onshore Mellitah Complex.

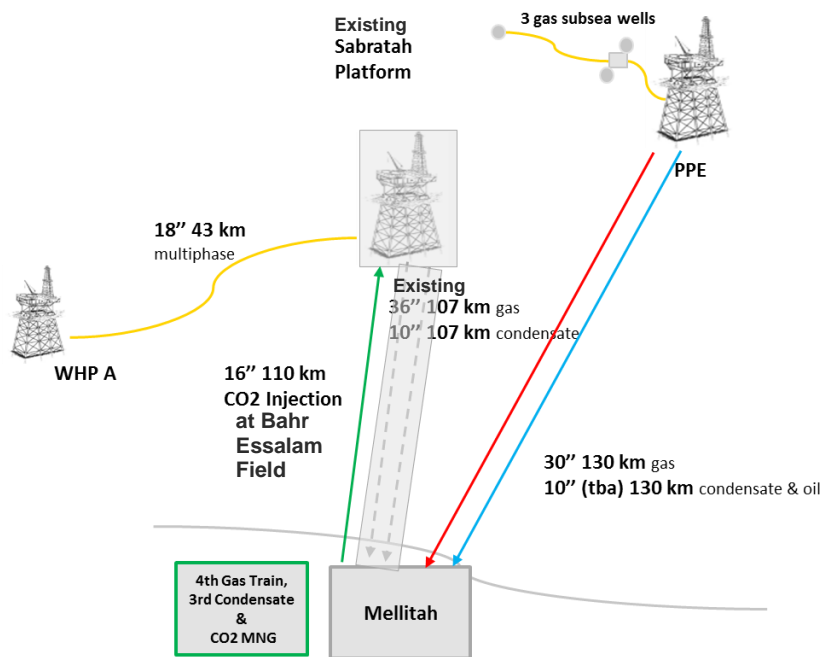


Mellitah Plant will be extended to accommodate additional gas and condensate treatment trains with the associated utilities in order to process the additional production coming from the new offshore developments.

The development is based on:

- Installation of a *new wellhead platform at Structure A (WHPA)*;

- A new trenched multiphase sealine (18") 43 km from A Structure platform to Sabratha Platform;
- Installation of a new Production Platform at Structure E (PPE);
- Drill, complete and tie-back 3 Subsea gas production wells to PPE;
- A new trenched multiphase sealine (6") 16 km from West subsea cluster to North subsea cluster;
- A new trenched multiphase sealine (12") 7 km from North subsea cluster to PPE;
- A new gas sealine (30") 130 km long from PPE to Mellitah;
- A new condensate/oil sealine (10") 130 km long from PPE to Mellitah;
- Sabratha Platform modification to receive and handle the production from A Structure;
- A new 4th gas processing train at Mellitah and 3rd condensate train complete with all associated utilities;
- CO2 management train (dehydration and Compression) in Mellitah Complex;
- A new CO2 sealine (16") 110 km long to deliver and inject CO2 from Mellitah to Bahr Essalam Field;



**A-Structure and E-Structure Optimized Development Scheme
(PPE Export to Mellitah)**

2.0. Scope of survey

All works will be executed in accordance with COMPANY specifications and applicable international standards and codes.

2.1. Offshore:

- 2.1.1 Seismic and Geohazard Assessment: This document states the minimum requirements for the seismic and geohazard assessment of the project area, i.e. WHPA Platform, PPE Platform, associated clusters, subsea structures and sealines, as well as the route of the new CO2 injection pipeline to be constructed between the Mellitah Complex and Bahr Essalam Field.
- 2.1.2 Meteoceanographic data acquisition: Meteocean data are required to carry out the detailed engineering design for fixed platforms, subsea structures and sealines.
- 2.1.3 Geomorphological, Geophysical, and Geotechnical Surveys: The objective of the offshore geophysical and geotechnical surveys is to acquire all bathymetric, geophysical - shallow seabed and deep stratigraphic - and geotechnical data / samples for the engineering design

and installation of offshore fixed platforms, subsea structures and sealines/flowlines/umbilicals along submarine laying corridors.

The survey works to be carried out in two packages, as follows:

- Survey Package for Geophysical, Geomorphological and Phase 1 Geotechnical Surveys (shallow geotechnical investigation);
- Survey Package for Phase 2 Geotechnical Surveys (deep geotechnical investigation).

2.1.4 Environmental Baseline Survey (to be subcontracted to an EGA (the Libyan Environmental General Authority) approved Company : The environmental survey has the scope to acquire knowledge regarding the physical, chemical and biological features of water column and seafloor sediments, flora and fauna, with both qualitative and quantitative information on biological (both for seabottom and water column) diversity and abundance.

2.2. Onshore:

- 2.2.1. Meteorological data acquisition: Meteorological data are required to carry out the detailed engineering design for the Mellitah expansion project area.
- 2.2.2. Geomorphological, Geophysical, Geotechnical and Topographic Surveys: The scope of work is aimed at the acquisition of information regarding the existing soil properties, groundwater and topographical conditions in the areas, both inside and outside the current plant fence line, allocated for use by the project.
- 2.2.3. Environmental Baseline Survey (to be subcontracted to an EGA (the Libyan Environmental General Authority): The Onshore Baseline Environmental Survey is aimed at the acquisition of information regarding the existing environmental conditions at the Mellitah expansion project area. These include defining the air quality level and soil characteristics, assessment of flora and fauna, waste management assessment and environmental management.

3.0. Survey Areas

3.1. Offshore

The survey shall cover any significant area that will be utilized during the site development lifecycle. The significant areas to be considered shall be at least the platforms location, the subsea clusters, the PLEM site, the injection wells, the SSIVs location, and along the sealines routing. In addition, the sites shall be surveyed over an area sufficient to ensure that the potential for environmental hazards has been thoroughly determined.

In particular, four main different areas to be surveyed are defined:

- Platforms location area;
- Clusters and subsea well location areas;
- Flowline and sealine route corridors;
- Drilling areas.

A detailed survey will be carried out along the flowline corridors and at the Platforms, clusters, PLET, SSIV, subsea and drilling location areas.

3.2. Onshore

The survey shall cover the Mellitah Expansion project area including the existing Mellitah Plant. Four general areas have been proposed for location of monitoring survey:

- Shore line;
- On and around the Mellitah Plant site (at fixed distances from the Plant);
- Area between the Mellitah and Wafa Coastal plants (along the flowline corridors);
- On and around the Wafa Coastal Plant (at fixed distances from the Plant).