



Client
Puma Energy



Location
Luanda, Angola



Period
September 2014 – January 2017

Luanda Fishing Port – Construction of 50 000 and 15 000 DWT Quay Walls

Brief summary:

Puma Energy is currently constructing an onshore tank farm and quay walls in the Bay of Luanda, Angola. PMI was appointed for the quay walls geotechnical investigation works, design and review, and construction management. The two quays are designed to berth vessels of 50 000 DWT and 15 000 DWT respectively

PMI Scope of Works:

- Geotech investigation works, including 44 boreholes of drilling depth of approx. 40m each.
- Quay walls preliminary design
- Detail design review
- Onsite construction management and quality control, records (Owner's Engineer) - on-going.



Project Background:

Puma's CBM facility and some of the onshore tankfarms is currently operational (two construction phases left). China Petroleum Pipeline Bureau (CPP), acts as the lead EPC Contractor for the project. CPP's main subcontractor for the quay wall construction and dredging works is CHEC (China Harbour Engineering Company). The quay walls consist of a piled tubular and sheetpile combi-wall structure. The two quay walls have a 240m and 200m berthing line.

Geotechnical investigation works:

The geotech works started in the beginning of March 2014 and was concluded by beginning of May 2014. 44 boreholes were drilled from PMI's jack-up barge with Fraste drill rig (drilling depth of approx. 40m each). PMI was responsible for all the geotech works, including drilling, logging, sampling and reporting.

Design Phase and Construction Works:

It was found that a tubular and sheetpile combi-wall structure was the most suitable structure type for the existing geology. Following the quay layout and preliminary design finalization in September 2014, land reclamation and ground improvement works started. Three months thereafter the detail design was finalized for

which PMI conducted the formal design review.

Quay wall piling operations started at the beginning of November 2015. Piling was performed from the land side allowing construction works to commence in the dry. Once the piles were driven to the design depth the tie rods were installed.

Following the pre-tensioning of the tie rods the dredging was then performed in front and up against the quay walls to the required design depth. Following the installation of the steel rebar cages in the tubular piles the reinforcement works and concrete casting of the capping beams could commence.

PMI Responsibilities during Construction

PMI was responsible for the construction supervision, quality control and records. PMI was also responsible for the design changes of the on-going revisions during construction. The quay walls construction project is estimated to be completed by January 2017.

