

# MANGALA PROCESSING TERMINAL GABION FLOOD PROTECTION SCHEME

## BARMER, RAJASTHAN, INDIA

### Revetment Protection

#### Problem

Cairn Energy Private Limited had hired Halcrow Consulting India Private Limited to design the proposed Mangala Processing Terminal which is a crude oil refinery. The site is located around 30 km North-East of Barmer village of Rajasthan.

In the past, due to heavy rainfall, there was breakdown of earthen dams near border areas. Because of this, rainwater entered in the Barmer region of Rajasthan and affected the proposed project area heavily.

Before implementation of the solution, the area was covered with soil fill. Ground level was increased for construction so as to avoid disturbance to the surrounding area. To protect the processing terminal and nearby areas from various environmental impacts it was essential to adopt suitable protection measures.

#### Solution

System is designed in such a way that the Gabion retaining wall along with apron & lower revetment can minimize the effect of rainfall, erosion or any environmental hazard. Maccaferri provided following solution as a protective measure.

##### Gabion:

Gabion wall as a retaining structure was provided to act as effective measure to control flood attacks. The stone fill allows the water to seep through the structure while retaining the soil, therefore no additional drainage is required to relieve the hydrostatic pressures.

##### Gabion mattress:

Gabion mattress was provided as a launching apron in order to protect the structure against scouring.

##### Geotextile:

It is provided as a filter.

**Client:** CAIRN ENERGY INDIA PVT. LTD.

**Designer / Consultant:** Halcrow Consulting India Pvt. Ltd.

**Contractor:** Maccaferri Environmental Solutions Pvt. Ltd.

#### Products used (Qty.)

- Gabion	45,000 CUM
- Reno Mattress	58,000 CUM
- MacTex N	1,69,000 SQM

**Date of construction:** 02/2009 - 03/2010



Photo 1: Alignment during construction



Photo 2: Placing of Gabion boxes over geotextile



Photo 3: Alignment for placing Gabion boxes using bamboo



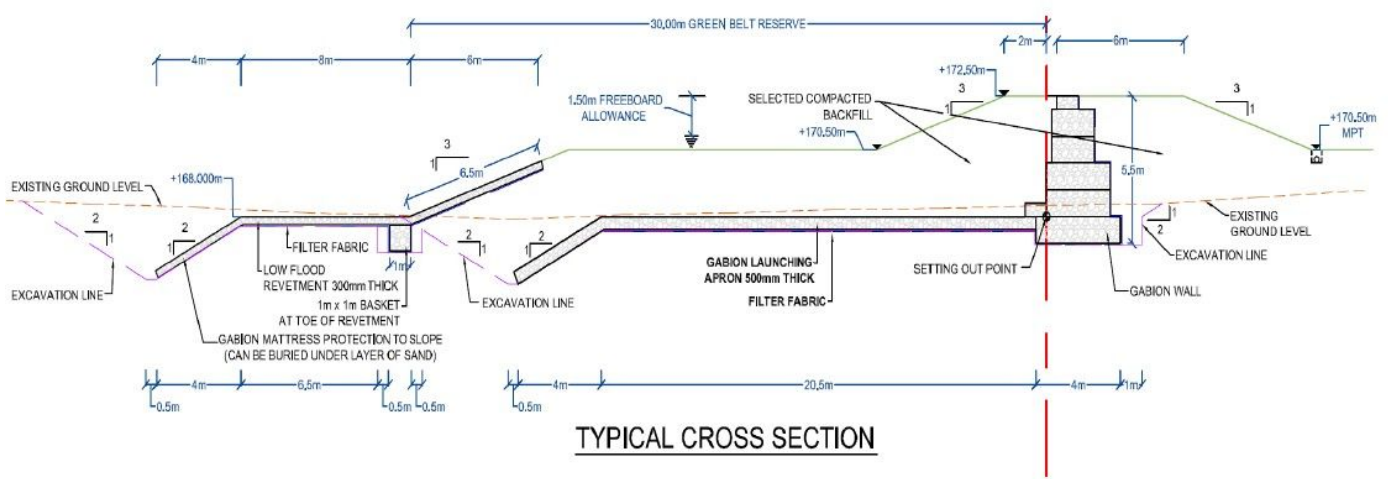
Photo 4: Gabion boxes placed in different layers



Photo 5: Gabion wall & laying of launching apron of 0.5 m thick



Photo 6: After construction Gabion & launching apron



## Typical cross section

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