

PROJECT SHEET

T2 - PORTO DO AÇU, BRAZIL
DREDGING, RECLAMATION AND RIP – RAP

INTRODUCTION

Açu Port in São João da Barra, Rio de Janeiro, is Latin America's largest port-industry complex. The port consists of two terminals: T1, an Offshore terminal for handling iron ore and oil; and T2, an Onshore terminal built around the inner navigation channel that handles goods such as bauxite, general cargo and vehicles. This terminal also includes areas for the installations of offshore supply companies.

PROJECT DESCRIPTION

For this project, Boskalis has carried out the executive project: site clearance, excavation, dredging, land reclamation, Rip-Rap Slope Protection, Transport and disposal the dredged materials in ocean sites.

Dredging Services for Terminal T2 consisted of:

- Offshore access channel approximately 4.600 m long, 300 m wide and 14.5 m deep.
- Onshore access channel approximately 2.000 m de long, 300 m wide and 14.5 m deep.
- Turning basin with a diameter of 600 m and a depth of 14.5 m.
- Inner channel and mooring berths approximately 3,600 m long with widths of 135 m, 210 m and 500 m and depths of 10/11 to 14.5 m.

The total dredging volume was 51.751.753 m³, of witch 31.041691 m³ were removed by Cutter Suction Dredgers (CSD), and 20.710.062m³ removed by Trailing Suction Hopper Dredgers (TSHD).



A Areal view of the areas 1 and 2 access navigation channel.

B Location and influence area of Port of Açu (Source: Prumo).

FEATURES

Client	Prumo Logística S.A.
Location	São João da Barra-RJ
Period	July 2011 – October 2015
Contractor	Boskalis do Brasil Dragagem e Serviços Marítimos Ltda



PROJECT FEATURES

The project is constantly under development in line with the continuous interaction with the client with the aim of increasing efficiency and finding the best technical and cost-effective solutions so that all Stakeholders are satisfied.

The nature and dimensions of the work, as well as the various technical details of this project, the client requirements, the range of Stakeholders and the future concessionaires of the Port of Açu imply constant variations in the initial project design.

That sometimes affects the progress of the works but it also represents an interesting technical and management challenge in a major hydraulic engineering project.

PERFORMED SERVICES

The opening of the channel was completed successfully and on schedule. This contractual milestone was critical to the success of this project since it involved dredging through the beach with the CSD Cyrus II in difficult sea conditions to complete this part of the work (Break-in in September 2011).

The Break in involves breaking through the dunes material through the stern (rainbow), creating a sand bank between the dredger and the sea, that protects the dredger from the waves.

The dredging work in areas 1 and 2 (internal channel and North Basin) was performed in sequence with the break-in in October 2011, having been reached the designated project quota -14.5 m DHN.

Dredging works in Areas 3 and 4 (Southern Basin) reached the designated project quota of -10 m DHN.

The dredgers CSD Cyrus II, Taurus II and Orion were used in the internal dredging works.

The dredging services outside the access channel included dredging of the trenches (Breakwater), access channel and turning basin.

The transport and disposal in ocean sites located at an average transport distance of 13 nautical miles were performed by the TSHD's Seaway, Cornelis Zanen, Flevo, Prins der Nederlanden e Willem van Oranje.

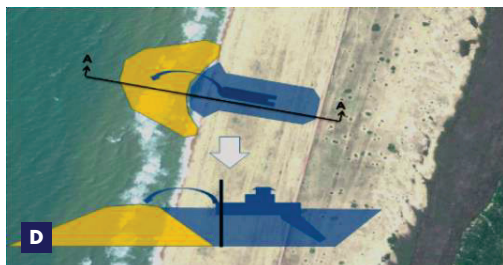
The project also includes provisional road construction works with approximately 14 kilometers of roads.



The dredging works for the facilities of the north and south breakwaters reached the depth of -19,5 m.

The services of Rip Rap protection in Area 1 of internal channel were performed over a length of 2.310 m, on each side of the channel, where geotextile protection was applied, and covering about 450.000 tons of the rock Rip Rap.

Rip-Rap was performed by onshore hydraulic equipment, as well as water works were performed with a Grab Dredge, GD Elisa.



C Dredger CSD Cyrus II in operation during the Break-in.
D Layout of the Break-in operation.
E Areal View of the dredging areas.