

# PROJECT SHEET

## PORT OF 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

Boskalis is supplying the dredging services for the T2 Terminal:

- Offshore access channel approximately 4,600 m long, 300 m wide and 14.5 m deep;
- Onshore access channel approximately 2,000 m long, 300 m wide and 14.5 m deep;
- Turning basin with a diameter of 600 m and a depth of 14.5m;
- 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 14.5m.

Boskalis is responsible for a range of activities in the contracted scope of works, such as project management, mobilization, the organization and clearance of working sites, the construction of access roads, excavation, dredging and hydraulic reclamation.

In addition to these activities, we also work on slope maintenance and rock protection, the transport and disposal of dredged material in reclamation areas and at licensed ocean sites, and the creation of stockpiles with dredged and excavated material for future use.

### FEATURES

Company	Prumo Logística S.A
Location	São João da Barra-RJ
Period	July 2011 - ongoing
Sub-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 by rainbowing material through the stern, creating a sand bank between the dredger and the sea

- A** Location and influence area of Port of Açu (source: Prumo)  
**B** Areal view of the areas 1 and 2 and access navigation channel

that protects the dredger from the waves but prevents a return to the open sea.

The dredging work in areas 1 and 2 (internal channel and North Basin) was performed in sequence with the break-in in October 2011 and is currently being concluded.

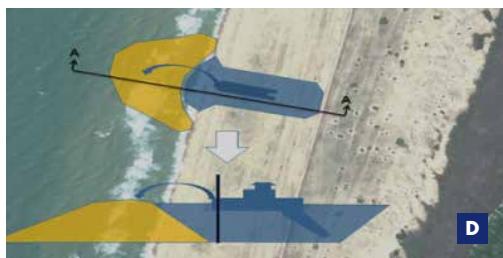
The major dredging work in Areas 3 and 4 (South Basin) was concluded in May 2014, and it represents a volume of around 10 million cubic meters.

All the hydraulic reclamation and stern spraying work was performed by the Cutter Suction Dredgers Cyrus II and Taurus II.

The dredging work on the breakwater trenches, access channel and turning basin started in 2012 and it has already been concluded (north and south breakwater trench and northern side of the turning basin to -19.5 m DHN and the berms of TMULT, NOV and Intermoorto -14/-10 m DHN).

The dredging works, transport and disposal in ocean sites located at an average transport distance of 13 nautical miles were performed by the TSHDs Seaway, Cornelis Zanen, Prins der Nederlanden and Flevo.

The top-soil removal in areas 1, 2, 3 and 4 represents a volume of around 1.4 million cubic meters and the road construction works include more than 13 kilometers of roads.



The road construction works and the riprap protection of 2,545 m on the north and south slopes have also almost reached conclusion.

The initially contracted scope included a minimum volume of 43 million cubic meters to be dredged. This has already been exceeded as Boskalis has dredged 49 million cubic meters. The initial scope was increased by contracting variation work.

The additional variation works also include the dredging of sandy material in the BP-Prumo Area. BP-Prumo will sell maritime fuel at the port. This dredging work will be done by the CSD Orion and then by a trailing suction hopper dredger to achieve the final project design depth.

#### SERVICES TO BE EXECUTED

The dredging of sandy material at BP-Prumo Area - this company will handle the sales of maritime fuel at the port - by the Cutter Suction Dredger Orion and then by a Trailing Suction Hopper Dredger in order to attain the final project design depth is also part of the variation work.

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