

# PROJECT SHEET

## NEW SUEZ CANAL: A REAL CHALLENGE IN TIME

200 MILLION M<sup>3</sup> OF SAND, CLAY AND ROCK DREDGED  
IN LESS THAN 9 MONTHS

### DREDGING CHALLENGE

The Suez Canal is one of the world's main shipping links and thus of major importance to world trade. The canal extends from Suez on the Red Sea to Port Said on the Mediterranean. Egypt's Suez Canal Authority awarded the contract to double the canal's capacity to a consortium, which was aptly named the Challenge Consortium by the Chairman of the Suez Canal Authority, Admiral Mohab Mamish.

The consortium comprising Boskalis, Van Oord, NMDC (Abu Dhabi) and Jan de Nul (Belgium) had the task of dredging the 35 km long New Suez Canal parallel to the existing canal. This involved dredging a record breaking 200 million m<sup>3</sup> of sand, clay and rock in less than 9 months. In addition, two Service Channels (80 m wide and design depth -10 m CD) and two Cross Channels (50 m wide and design depth of -6 m CD) were dredged to connect the existing canal and the New Suez Canal.

### ENORMOUS SCALE

Dredging 200 million m<sup>3</sup> of material in a period of 9 months required the deployment of the world's largest dredging fleet comprising 21 Cutter Suction Dredgers, 5 Trailing Suction Hopper Dredgers and 2 Water Injection Dredgers. The dredging vessels cut the capital volume and pumped the mixture of soil and water into 16 disposal basins totaling an area of 73 million m<sup>2</sup>. This required a total length of 85 km floating and shore pipeline.

### FEATURES

Client	Suez Canal Authority
Location	Egypt
Time frame	November 2014 – August 2015
Contractor	Challenge Consortium



A Trailing suction hopper dredger Coastway

B Cutter suction dredger Edax

### COMPLEX PLANNING

To ensure the project was completed on time, the fleet of vessels had to be managed to achieve optimum production levels. The first planning task was to enable as many vessels as possible to dredge simultaneously. This required breaking in at both ends of the New Suez Canal and at four points along the existing canal to create ten fronts for the dredging vessels at an early stage in the project.

Challenging soil conditions, no project preparation period, interfaces with third party contractors and time constraints required flexible and timely management of the dredging fleet.



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**C**

**D**

Planning of vessel deployment had to be continuously updated with the latest project information and with a close eye to project requirements to ensure completion within the tight project time frame. Vessel deployment was planned with priority to project requirements to ensure production levels surpassing 1.4 million m<sup>3</sup> per day.

### LOGISTICS – A PROJECT ON ITS OWN

The project was a major challenge in logistics and could have been a project on its own on managing the logistics of incoming shipments arriving on their own keel, by semi-submersible vessels, cargo vessels, and regular air freight, sea freight and road transport. All regular freight was received at the Consortium's Central Storage Yard, a designated area for distribution of equipment to the dredgers and all other floating units. In a period of 12 months, the site handled and dispatched over 850 containers, approximately 500 incoming airfreights and thousands of local transports.

Another challenge for the logistics department was the complete demobilization of the project site within three months after completion of the dredging works. While the last dredging vessels were still being mobilized, demobilization was underway of over 200,000 m<sup>3</sup> auxiliary equipment, 28 dredgers and numerous other floating units, such as accommodation barges and support craft.

### SAFETY

A high safety level was maintained throughout the project period and no fatal injuries or permanent disabilities occurred. The high safety levels were due to the skills and experience of the project personnel, who were supported by locally hired and competent SHE-Q officers. All Boskalis vessels used the Boskalis SHE-Q system. Dredging took

place whilst the normal shipping traffic (daily convoys) continued without interruption through the existing Suez Canal. There were also various interfaces with third party contractors and public transport routes crossing the project site.

### TIME PRESSURE

The main challenge for the Consortium was the time frame in which all dredging had to be completed. A project of this scale was initially estimated to take three years to complete, but the President of Egypt had set the limit for completion at one year. The period from tender to contract award was only one month, and dredging started within a month. The New Suez Canal was open for shipping in just five days after completion of the dredging works.

### FACTS AND FIGURES

- 35 km long canal with bottom width 147 to 177 m and design depth -24 m CD
- 2 Service Channels (width 80 m and design depth -10 m CD), and 2 Cross Channels (width 50 m and design depth -6 m CD)
- 9 months execution period including preparations
- 28 dredgers on site including 21 Cutter Suction Dredgers, 5 Trailing Suction Hopper Dredgers and 2 Water Injection Dredgers
- 85 km soil conveying pipeline (floating and shore pipeline)
- 16 disposal basins located on the east and west banks of the New Suez Canal
- Approximately 2,000 people from 45 countries employed on site; over 4.5 million man-hours, over 3,700 project safety inductions, and no fatal injuries or permanent disabilities
- The New Suez Canal was opened for shipping on 6 August 2015, 5 days after completion of dredging
- Extension of time was not possible

**C** One of the transports for the Suez demobilization

**D** Cutter suction dredger Cyrus II

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