

PROJECT SHEET

ANTOFAGASTA, CHILE
 ATI TERMINAL HARBOUR DEEPENING
 DRILLING AND BLASTING OF ROCK

INTRODUCTION

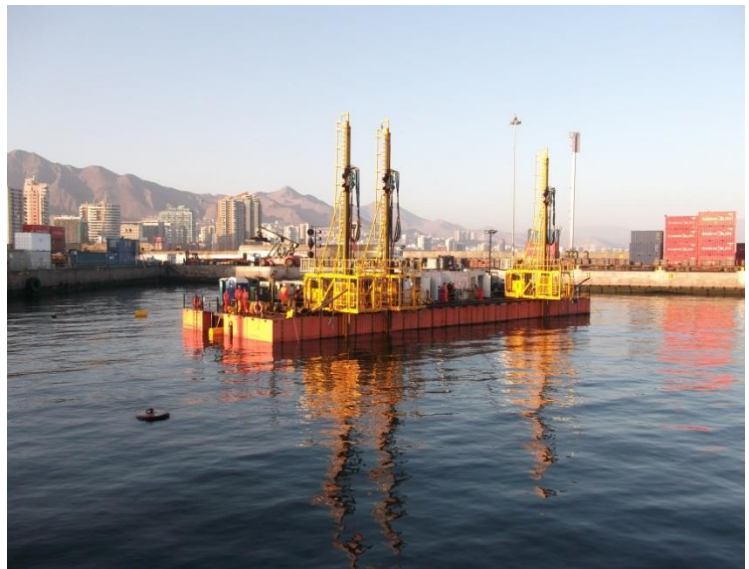
The dredging work in the ATI terminal was originally awarded to JDN in 2011. During the works, unexpected hard rock was discovered which could not be removed by the JDN backacter 'Vitruvius'. JDN contracted Rock Fall to drill and blast the rock which needed to be removed to ensure adequate clearance for large cargo ships. Before the dredging was complete, large cargo ships could only enter the port with ¾ of their total capacity due to the limited draft. The blasting and dredging of the rock meant the ships could enter with full capacity; this was a requirement from one of the large mining companies who were using the ATI terminal to export copper.

SCOPE OF WORK

The original quantities received estimated a volume of 7,500m³ and an area of 5,200m² required to be blasted to achieve a final design level of -13.6m. The rock was located on the edge of entrance to one of ATI's main berths

FEATURES

Client	ATI Terminal Puerto Antofagasta (Antofagasta Terminal Internacional S.A.)
Location	Antofagasta, Chile
Period	May 2013 – July 2013
Contractor	Jan de Nul (CCD – Compania Chilena de Dragados S.A.)



EXECUTION

The drilling and blasting of hard basalt rock was carried out while the port was still in operation receiving large cargo and bulk containers. Rock was pre-treated using 3 Atlas Copco OD system drill rigs. After blasting was completed, the pre-treated rock was then dredged by JDN using a large backhoe dredger. The final quantity pre-treated to achieve a design level of -13.6m was 5284m² and 5091m³.



ENVIRONMENTAL MANAGEMENT

The control of vibration was very important during the contract. Work was carried out up to 12m from an old quay wall where a rock layer of 5m was required to be blasted. Control blasting methods were used to ensure the limit of 50mm/s was never exceeded. Vibration was recorded using vibration monitors positioned on the quay wall.



Numerous sea lions were present within the port during drilling blasting operations. A combination of MMO, scare charges and precise blast designs were used to ensure no marine mammals were harmed.

HEALTH & SAFETY MANAGEMENT

The Boskalis safety programme NINA (No Injuries, No Accidents) was used during the contract with great success. Numerous toolbox talks were carried out and an open culture was encouraged where people can share ideas to improve safety and challenge unsafe operations.

