

## Project: *Sydney Water Desalination Project – Bay Crossing*

Principal:

*MCB Partnership*

Location:

*Kyeemagh, Sydney, New South Wales*



Neumann Dredging were engaged as the dredging contractor for the Botany Bay pipeline crossing which was part of the construction of Sydney's de-salination plant at Kurnell, Southern Sydney.

When completed water from the desalination plant will be piped to the City Water Tunnel at Erskineville. This is part of the Potts Hill Water system, which services areas south of Sydney Harbour, to Bankstown in the west and Sutherland in the south.

Scope of Work:

- ◆ Mobilisation to site of the Nu Bounty and Nu Endeavour, 2000 hp booster station, 2 x purpose-built spreader barges, 3600m of 18" pipeline and multiple support vessels.
- ◆ The dredging of a berth pocket & navigation channel on the Kyeemagh foreshore to provide marine access to the shore based staging area. This involved dredging of approx. 70,000 m<sup>3</sup> and pumping the material 2.7 kms to a temporary underwater storage area.
- ◆ Dredging of the pipeline trench and concurrently backfilling of the trench post pipe lay across Botany Bay to a +/- 200mm vertical tolerance. The pipe laying programme required 120 lineal metres of trench to be dredged and backfilled per day. The volume of material involved to meet the programme required both the Nu Bounty and Nu Endeavour to be engaged on site. The trenching and pipe laying were undertaken with both Nu Endeavour and Nu Bounty, the pipe lay barge and both spreader barges working "in train" together working across Botany Bay. The pipeline trench was 6,970 metres long, starting from Kyeemagh on the northern side of Botany Bay finishing at Kurnell on the south west side of Botany Bay. The design of the pipeline trench required 710,000 m<sup>3</sup> of material to be dredged and backfilled during this phase of the project.

This part of the project required significant interfacing between the various marine operations and was undertaken on a 24/7 basis.





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- ◆ Backfilling of the final 1,500 linear metres of trench, post pipe lay, dredging 220,000 m3 of material from a temporary underwater storage location.
- ◆ Detailed dredging for removal of tunnel boring machines.
- ◆ Dredging of 70,000 m3 for the back filling and restoration of Kyeemagh berth pocket.

### Challenges:

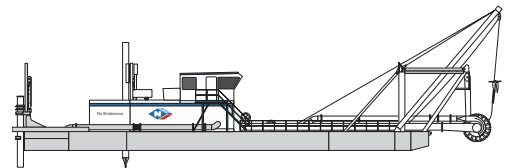
- ◆ Strict environmental limitations on noise, turbidity, sedimentation and waste.
- ◆ High profile project within densely populated residential area.
- ◆ Strict and critical tolerances on completed works for pipe lay operations.
- ◆ Sudden and extreme changes in weather and seastate conditions on Botany Bay.
- ◆ Strict program of works.
- ◆ Interfacing the dredging activities with the pipe laying activities in a concurrent operation.

### Outcomes:

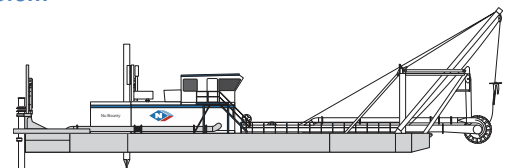
- ◆ The dredging works successfully completed in December 2009 well within construction programme.
- ◆ Neumann Contractors recorded zero LTI's during the project



Dredge **Nu-Endeavour – Cutter Suction Dredge**  
 Length **34.5 m** Gross Weight **201 tonne**  
 Pipe Dia. **450 mm** Digging Depth **2.5 – 15.0m**



Dredge **Nu-Bounty – Cutter Suction Dredge**  
 Length **34.5 m** Gross Weight **201 tonne**  
 Pipe Dia. **450 mm** Digging Depth **2.5 – 15.0m**



Dredge **Spreader Barge 1**  
 Length **24.8 m** Gross Weight **82 tonne**  
 Pipe Dia. **450 mm**



Dredge **Spreader Barge 2**  
 Length **24.8 m** Gross Weight **82 tonne**  
 Pipe Dia. **450 mm**