

DEEPWATER

DEEPWATER OVERSEES DOCK ANODE INSTALLATION: BEAUMONT ENTERPRISE MARINE TERMINAL

Some piles and sections of dock needed additional protection.

Deepwater was contracted by Enterprise Products to oversee the installation of galvanic anodes on the Beaumont Marine West (BMW) and Beaumont Marine East (BME) facilities which did not meet National Association of Corrosion Engineers (NACE) criteria for cathodic protection. Anode installation activities were completed in October 2021 by US Underwater and Zealous. A follow-up survey was performed in November, 2021, by Deepwater representatives to evaluate the effectiveness of the installed CP systems.

Deepwater designed retrofit cathodic protection (CP) systems for the docks which do not receive CP current from the site-wide impressed current cathodic protection (ICCP) system. Continuity cables were installed in 2020 from the ICCP system negative return to the near-dock dolphins and piles at the seven BMW and BME docks during Phase 1 of the project. The subsequent inspection found 330 out of 380 (86.8%) test points met NACE protection criteria, which did not meet NACE criteria in 2020. The majority of these structures are dolphins too far from their respective docks for bonding cables to be installed, so these systems received retrofit zinc anodes in 2021. Deepwater calculated the quantity of anodes required to protect assets which did not meet NACE criteria, and also designed an expanded continuity plan for the BME North Dock, BME Ship Dock and BME Barge Dock to lower the system resistance between the land-side ICCP system and several piles at the ship and barge docks. This will enable the land-side ICCP systems to provide CP current without installing zinc anodes for these structures.

The water level at several dolphins was shallower than expected. For these piles, the prescribed anode was cut in half, sheet metal brackets were designed and welded onto the dolphin, and then the total anode material was installed.

The 2020 inspection indicated that one section was discontinuous with the rest of the dock. Deepwater proposed pin brazing continuity cables between this discontinuous section of the dock with the remaining dock structure. Survey results show that the continuity cables were successful in shorting the dock together as a single unit.

Additional continuity cables installed at the North Dock were designed to create low-resistance routes for the land-side ICCP system to provide CP current to the near-dock piles, specifically the cluster of piles south of the dock structure. A second set of continuity cables were installed north of the dock to provide additional CP to the piles north of the dock.

More info at www.stoprust.com



GULF OF MEXICO LOCATION

The terminal is near Sabine Lake on the Texas/Louisiana border.



SHALLOW WATER

Some anodes had to be modified where water was shallower than expected..



PILING ON MORE CP

Some pilings required continuity cables to utilize existing land-side ICCP.