



UNITED STATES

Choctaw Point Container Terminal Wick Drains



Owner

Alabama State Port Authority

Engineer

Alabama State Port Authority

General contractor

Phillips & Jordan, Inc

Dates of work

2005/08 2005/09

Description

Menard completed one of its largest prefabricated vertical drain (wick drain) projects, at the Alabama State Port Authority's Choctaw Point Container Terminal in Mobile, Alabama. The state-of-the-art container handling center terminal combines a deep-water container terminal with a container handling intermodal yard and a distribution facility capable of being serviced by five Class I railroads. To improve the weak soils at the site, a land reclamation and site stabilization project was undertaken. A sand fill, up to 25 feet thick, was placed within a driven sheet pile wall containment structure. Because the weight of the sand fill and the proposed surface loads would cause significant long-term settlement due to the consolidation of the underlying soft clays, Menard implemented ground improvement using wick drains.

Main figures

Wick drains

94000 EA. 4.3 million linear feet

Ground conditions

The project site was underlain with a layer of highly compressible, very soft marine clay that had in-situ shear strengths ranging from 65 to 125 psf. This layer varied from approximately 17 to 33 feet in thickness across the site. Settlement was estimated to range from 2 to as much as 10 feet across the site under final grade loading.

Solution

Menard installed the wick drains through the sand fill and the underlying strata, which consisted of silty sands, clayey sands and thick soft clay layers. The wick drains served to reduce the amount of time required for the consolidation settlement to occur and also accelerate the strength gain of the clays as they were undergoing consolidation. More than 94,000 drains were installed, for a total of nearly 4.3 million linear feet. The use of wick drains resulted in significant project cost savings for the client.