



## SALT AND CAUSTIC HANDLING DOCK

CLIENT - Confidential  
LOCATION - New Johnsonville, TN  
COMPLETED - 2013

### DESCRIPTION

Matrix PDM Engineering completed an opinion of probable cost (OPC) for the design of modifications to an existing dock to allow solid salt unloading and liquid caustic loading. Matrix was then awarded the next phase of the project.

The final design modifications to the dock and the design of the hopper and conveying system allowed for unloading solid salt from barges into a hopper using a hydraulic material handling machine. The hopper continuously feeds the salt onto a conveyor and discharges it into a slurry tank at a rate of 250 tph.

Matrix also designed the liquid caustic loading arm to load tanker barges. In addition to the design required for the dock modifications, project management services, including equipment procurement, document control, and scheduling were provided.

### PRINCIPAL FEATURES

- Layout and general arrangement drawings of unloading crane, hopper, belt conveyor system, salt slurry tank and caustic barge loading system
- Civil and foundation design, including pile foundations and pile caps for a hydraulic material handling machine, hopper, and salt slurry tank
- Marine structure design to support winch system to move salt barges during unloading operations
- Designed receiving hopper with knife gate to feed salt at a rate of 250 tph
- Designed 180 foot long belt conveyor with a design capacity of 250 tph to discharge salt into a 26 foot high salt slurry tank
- Designed caustic loading system with hydraulically adjustable loading arm capable of conveying 2000 gpm of 50 percent liquid caustic to a single barge loading point
- Designed washdown piping system for belt conveyor
- Provided electrical site plan drawing, one-line diagrams and lighting designs for portions of the material handling system

### FOR MORE INFORMATION:

[matrixpdm.com](http://matrixpdm.com) | 866 367 6879

