



NEWS RELEASE

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NORTH DAKOTA OIL OPERATION WINS

PLASTIC PIPE INSTITUTE PROJECT OF THE YEAR

Salt Water Disposal Facility Takes
Honor in Association's Energy Piping Systems Division

MCKENZIE COUNTY, N.D. - **(DATE TO COME)** - To process the extremely hot and corrosive saltwater from oil and gas drilling operations here, the Gondor Saltwater Disposal (SWD) facility used a network of high-density polyethylene (HDPE) pipe that required almost 700 hundred Victaulic couplings even though the system had fewer than 1,800 feet of pipe. The application and complexity of the piping system was named Project of the Year by the Energy Piping System Division of the Plastics Pipe Institute, Inc. (PPI). The association's annual awards program recognizes projects and members for exceptional contributions to the industry. Submissions in the association's divisions are reviewed, evaluated and voted upon by the PPI members. PPI is the major North American trade association representing the plastic pipe industry.

Permitted to accept up to 50,000 barrels a day of produced water, the Crestwood Midstream Partners LP (Houston, TX) facility has two wells, two separators, two oil storage tanks, and 10 produced water storage tanks across nearly three acres in western North Dakota. The project, which was constructed using both onsite installation and in-shop fabrication, consisted of nearly a third of a mile of two to 12-inch diameter, DR 9 HDPE pipe and hundreds of Victaulic Style 905 Installation-Ready™ and Victaulic Style 907 Transition Couplings. Water temperature is typically

120°F. The facility processes the liquid and separates the oil and water. The water then can be injected back into the ground, and the oil sold to the market.

“This is one of the most intensive valve and fitting installations that we have ever seen,” stated David M. Fink, president of PPI upon presenting the award to the coupling manufacturer, Victaulic, a PPI member company. “Plus, all the pipe was installed above ground in vertical and overhead runs in just three days. The nature of the Gondor facility and the success of the Victaulic couplings in this highly specialized pipe system combined to make this the Project of the Year.”

Crestwood chose to use HDPE pipe due to its cost certainty, constructability, and system longevity. As the team began planning for construction, Crestwood’s producing partners continued to forecast an increase in produced saltwater volume, making it imperative for them to identify an efficient option to keep the project under budget and manage the tight construction timeline demands. Crestwood knew they would need to deliver productivity gains and labor efficiencies to meet their requirements and turned to Victaulic for help.

“HDPE was the best choice from a cost, constructability and longevity perspective,” stated Mark Donnelly, a senior project manager at Crestwood. “Gondor is compatible with HDPE because of the way our system is laid out. There is a continuous inlet flow through the pipes that helps keep them warm, so even when we get those really cold North Dakota days, the cold won’t settle into the pipes.”

Victaulic assisted with the design and fabrication of the Gondor project, cutting weeks off of the original construction estimate. The HDPE couplings installed with minimal effort, and onsite assembly required only simple hand tools, without the risk of weather delays. The use of Victaulic couplings eliminated challenging fitting-to-fitting connections, and vertical and overhead installation was quickly and easily accomplished. Victaulic mechanical joining solutions also enabled simple field corrections of alignment errors, mitigating onsite delays and schedule interruptions. The Victaulic Style 907 Transition Coupling facilitated the installation of the valves within the system,

eliminating flanges. Victaulic fabricated, assembled, and shipped the mechanical piping to the jobsite. Using prefabricated parts is up to four times more productive than field fabrication, and twice as much work can be completed per manhour. On the Gondor project, the combination of Victaulic's prefabricated HDPE pipe and onsite fit-ups using Victaulic HDPE couplings required virtually no rework in the field.

"The efficiencies realized through the use of HDPE, both in the field and in the fabrication shop, enabled owners to achieve multiple wins," said Randy Knapp, Ph.D., engineering director of the Energy Piping Systems Division of PPI. "This included uncovering opportunities for cost savings and risk reduction, while improving construction quality plus delivering on time and within budget. Assembling the system took three days, with the Victaulic couplings installed using simple hand tools.

"Doing this correctly is critical to the environment. The saltwater is a waste product that is produced and separated from oil during the production process. In North Dakota, a little more than one barrel of saltwater is produced for every one barrel of oil. Generally, this saltwater is too salty to be recycled so it must be injected underground well below the underground sources of groundwater, and SWD's are the only approved method for disposing of saltwater in North Dakota.

"Crestwood had considered stainless steel, fiberglass, and HDPE pipe when designing the Gondor facility," Knapp continued. "HDPE pipe was selected for the project due to its durability and cost, but traditional installation methods would have been challenging due to the difficult onsite fit ups and schedule constraints. Along with this, Crestwood wanted assurance that every joint was properly assembled to mitigate onsite risk. Victaulic HDPE system solutions were an ideal choice for this project due to the ease and speed of installation and visual verification of proper installation on every joint. Overall, the use of Victaulic exceeded owner expectations, providing Crestwood and the area with a safe, efficient, and reliable system solution that they will consider for low pressure tank farm applications moving forward."

More information can be found at www.plasticpipe.org.

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About PPI:

The Plastics Pipe Institute, Inc. (PPI) is the major North American trade association representing the plastic pipe industry and is dedicated to promoting plastic as the materials of choice for pipe and conduit applications. PPI is the premier technical, engineering and industry knowledge resource publishing data for use in the development and design of plastic pipe and conduit systems. Additionally, PPI collaborates with industry organizations that set standards for manufacturing practices and installation methods.