

ZERUST® Corrosion Mitigation for Underground Pipe Casing with Residual Water Presence

Location: Illinois, USA | Date: Dec 2024 | Contractors: TerraWorks LLC | Client: Confidential

Project Summary

ZERUST® Integrity Solutions (ZIS), in partnership with TerraWorks LLC, implemented a corrosion mitigation system for a 36-inch x 30-inch underground pipe casing. The project included site assessment, injection of a customized corrosion inhibitor solution, and installation of monitoring equipment. The goal was to extend the service life of the casing and provide ongoing monitoring capability.

Asset & Site Details

Asset ID: Pipe Casing
Casing Diameter: 36 inches (914 mm)
Pipeline Diameter: 30 inches (762 mm)
Length: 198 feet (60.3 meters)
Vent Pipes: 2 - 2-inch (51 mm) on Top
Elevation Changes: Minimal (None)
Notes: Underground pipe. Residual water present at time of injection.
Weather During Application:
Visit 1: 17°F (-8°C), 45% humidity, Sunny
Visit 2: 43°F (6°C), 70% humidity, Fog, Cloudy



Solution Implemented

ZERUST® Products Used

- ZERUST® Zerion™ FVS-S15 Corrosion Inhibitor Powder
- ZERUST® Zerion™ PGH-300 and PGH-400 Gel Powder

Monitoring

Electrical Resistance (ER) Corrosion Monitoring Probe (CT-20, 20-ft cable length)
Enardo Lever-Type Pressure Relief Valve

Implementation Details

Injection was delayed until excavation was complete. During the second visit, residual water was identified and treated with a 10% corrosion inhibitor solution formulated with ZERUST® Zerion™ FVS-S15 Corrosion Inhibitor Powder and ZERUST® Zerion™ PGH-300 and PGH-400 Gel Powders, injected in 250-gallon intervals using a 2-inch Eductor system. A total of 975 gallons (3,690 liters) was applied, displacing ~5 gallons (19 liters) of water. The ER Probe and Pressure Relief Valve were installed, and site personnel received IDS training.

Outcome

The corrosion mitigation solution was successfully implemented at adjusted concentrations. Monitoring equipment is now in place, and ongoing data collection from the ER Probe will enable continued performance analysis. The project positions the asset for extended service life and reduced corrosion risk.

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project case studies

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Project Photos



† DECLARATION

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Contact Us



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A product of:
Northern Technologies
International Corp
4201 Woodland Road
Circle Pines, MN 55014 USA
Toll-Free: +1 (800) 328-2433
www.ZerustIS.com

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With over 50 years of experience, ZERUST® Integrity Solutions™, a division of Northern Technologies International Corporation (NTIC), creates unique inhibitor-based corrosion prevention solutions to serve terminals, pipelines, exploration and production, equipment suppliers, transportation sectors, and more.

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