CETCO ENERGY SERVICES

A Minerals Technologies Company

SUCCESS STORY

Pipeline Fluid Management

CLEAR SOLUTIONS for complex fluids

Success through Ingenuity and Innovation: Treating 1.25 million BBL at 55 BPM

CHALLENGE

- Provide water treatment system to accommodate minimum smart pig velocity through 20” pipeline resulting in water flow rate of 55 BPM
- Deliver treated water to mandated discharge point over 6,000’ away from project site
- Recover over 5,000 BBL of oil from previously idled pipeline

SOLUTION

- Employ CETCO Energy Services (CETCO), vast engineering and project management capabilities along with critical technology and equipment to meet flow rate and NPDES discharge requirements
- Innovative design to recover more than 5,000 BBL of oil from pipeline while treating water at 55 BPM
- Install temporary pipeline to accommodate 55 BPM of water delivery to discharge point over 6,000’ away through swamp and numerous municipal culverts and access roads

RESULTS

- Safely recovered more than 5,000 BBL of oil for recycle
- Met required flow rates during numerous pig runs resulting in treating and discharging greater than 1.2 million BBL of water
- Strict adherence to NPDES permit resulted in all water discharged in compliance with permit

Success through Ingenuity and Innovation: Treating 1.25 million BBL at 55 BPM

CHALLENGE

As part of a project designed to re-commission a pipeline in the southern United States, CETCO has successfully treated approximately 1.25 million BBL of contaminated fluid at a rate of 55 BPM. Pipeline testing and inline inspection of the pipeline resulted in a large volume of effluent water requiring treatment. The 20" pipeline transports oil from a Gulf of Mexico coastal terminal in Empire, LA to a refinery more than 100 miles away in Pascagoula, MS.

The line had been idle since 2003 and there were concerns the pipeline may have endured damage as a result of hurricanes during the period of abandonment or that the line had physically moved during a series of mudslides. To what extent the line had been damaged was relatively unknown.

To assess the pipeline's integrity and potentially re-commission the line, the pipeline owner instructed an inspection with pumped water and inline inspection tools. CETCO was then contracted to provide environmental services to process the resulting contaminated water.

Due to stringent environmental regulations, CETCO faced a number of challenges, one of which included determining how to deliver the treated water from the pipeline to the only discharge point: a bayou situated 6,800 feet from the refinery.

CETCO SOLUTION

CETCO successfully completed the project by constructing a 12" diameter, 6,800 ft. pipeline that stretched from the treatment system to the discharge point, crossing several roads, levees and a swamp.

To assess the integrity of the line, a "stand up test" was first performed at 375 psi. Hydraulic analysis then determined the pressure levels required for tool runs. Each tool run involved pumping 210,000 BBL of water (one line fill volume).

However, given the number of tool runs, flushing and testing, by the end of the project CETCO had treated approximately 1.3 million BBL of water.

In order to carry this out successfully, smart tools were required to maintain a constant speed of 1.5 mph, resulting in a fluid treatment rate of 3,300 BPH (55 BPM). The project scope accounted for a minimum of five pig runs including

RESULTS

Commenting on the project, Mitch Brandon, project engineer for CETCO said: *"This project presented us with a number of challenges but ingenuity and initiative allowed us to successfully process all of the resulting contaminated fluid from the pipeline without an environmental incident. On completion of the project, we had treated and discharged 1,277,567 BBL of water, all within the Mississippi Department of Environmental Quality water discharge permit criteria, effluent limitations and monitoring requirements."*

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