

Pipe Strain Analysis

Project Details

Client: Confidential

Industry: Oil & Gas

Scope of Services: Engineering, Project Development, Desktop Study, Standard Documentation

Governing Body: PHMSA, API 570

Customer Benefits

Savings:

Decreased likelihood of a pipeline failure from geohazard activity.

Environmental Safety:

With an improved and more robust inspection program, our client is making an effort to be more environmentally responsible.

Improved Company Practices:

Data correlation between strain and backfill practices at roads, casings, and other crossings allowed our client to improve those practices.

Knowledge:

Our client now has a better understanding of the effects of land movement on pipelines. They have a new program in place to mitigate potentially dangerous and injurious force acting on their pipe.

Standardization:

The new program was created into a standard for our client matching their prior format.

Let's Get in Touch

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Project Description

Pipe strain analysis is still in its infancy within the pipeline industry. As many have realized, it is one of the greatest threats on pipelines that remains relatively unmonitored. A midstream pipeline company approached LeanTrak for assistance with creating a Strain Evaluation Program. LeanTrak was requested to create standards, a process for pipe strain evaluation, and assimilate strain into the current in-line inspection tool data analysis. The objective of the program was to remove reporting variables from tool vendors and provide a consistent process in evaluating strain on each consecutive tool run.

LeanTrak Solution

- LeanTrak developed guidelines and a process to determine if the strain calls by an IMU (inertia movement unit) tool were due to geohazard activity (i.e., waterway encroachment, landslides, erosion).
- In concert with James Hart, PE, Ph.D. at SSD, Inc., LeanTrak engineers created new standards for IMU tool requirements and analysis.
- LeanTrak evaluated strain on over 2,000 miles of pipeline. This included pipelines that had failed due to strain from geohazard activity.
- A process was created to analyze strain calls and the strain change between consecutive tool runs.
- Documentation was created for close out and record keeping of strain calls.
- LeanTrak updated previous in-line inspection and integrity standards to include strain analysis for consistency.

