

# Oceaneering Ensures Integrity of Pressurized Well Pad Equipment for an Onshore Operator in Texas

Bespoke inspection and integrity program drives measurable production efficiencies and reduces the risk of safety and environmental incidents.



## Project Overview

An onshore operator with a limited OPEX budget but a resolute focus on safety contracted Oceaneering to facilitate the inspection and integrity requirements for its operations in Eagle Ford Shale (South Texas).

Oceaneering has provided inspection and integrity services to the operator since early 2015, originally providing mechanical integrity services to manage the condition of more than 500 well pads in the region. In 2018, Oceaneering presented a systematic way to manage the integrity of remote infrastructure that previously had a simplistic integrity approach.

## Issues

The operator did not have the resources, equipment, or personnel to manage the well pads over such a large geographical spread and asked Oceaneering to develop a centralized solution to oversee the ongoing mechanical integrity and inspection routines. Run-to-failure could have led to safety issues including loss of primary containment which had the potential to adversely affect reputation, key performance indicators (KPIs), and production targets. The operator knew there was a shortage of quality integrity and inspection companies operating in the Eagle Ford Shale region. They sought out our differentiated solution that would provide them with qualified, certified, trained, and competent personnel who practice the *safety-first* mentality.

## The Oceaneering Solution

Oceaneering developed a robust and cost-effective mechanical inspection and integrity program for the operator, approaching the issues systematically. We implemented a planned inspection routine and applied a proactive approach to managing the integrity of the operator's infrastructure, including their process piping, pressure vessels, pressure safety valves (PSVs), and pipelines.

Our integrity and inspection programs are ISO 9001:2015 certified and we provide ASNT level 3 subject matter experts for each inspection methodology used. We also have access to and operate the latest inspection technology and collect, process, and store all mechanical integrity data on our web-based reporting portal. These factors ensured the operator had the correct data to make informed, value-adding decisions.

Oceaneering also provided the operator with an IDMS (Inspection Data Management System) to store the data generated by onsite inspections. The IDMS was designed to be accessed via a user-friendly web-portal, alleviating the headaches of data management, and provided the operator with real-time information and a complete view of all assets' data, including anomaly reports, remaining

life calculations, inspection photographs, and drawings. This enabled the operator to eliminate the onerous task of manipulating data via multiple reports and spreadsheets.

## Execution Plan

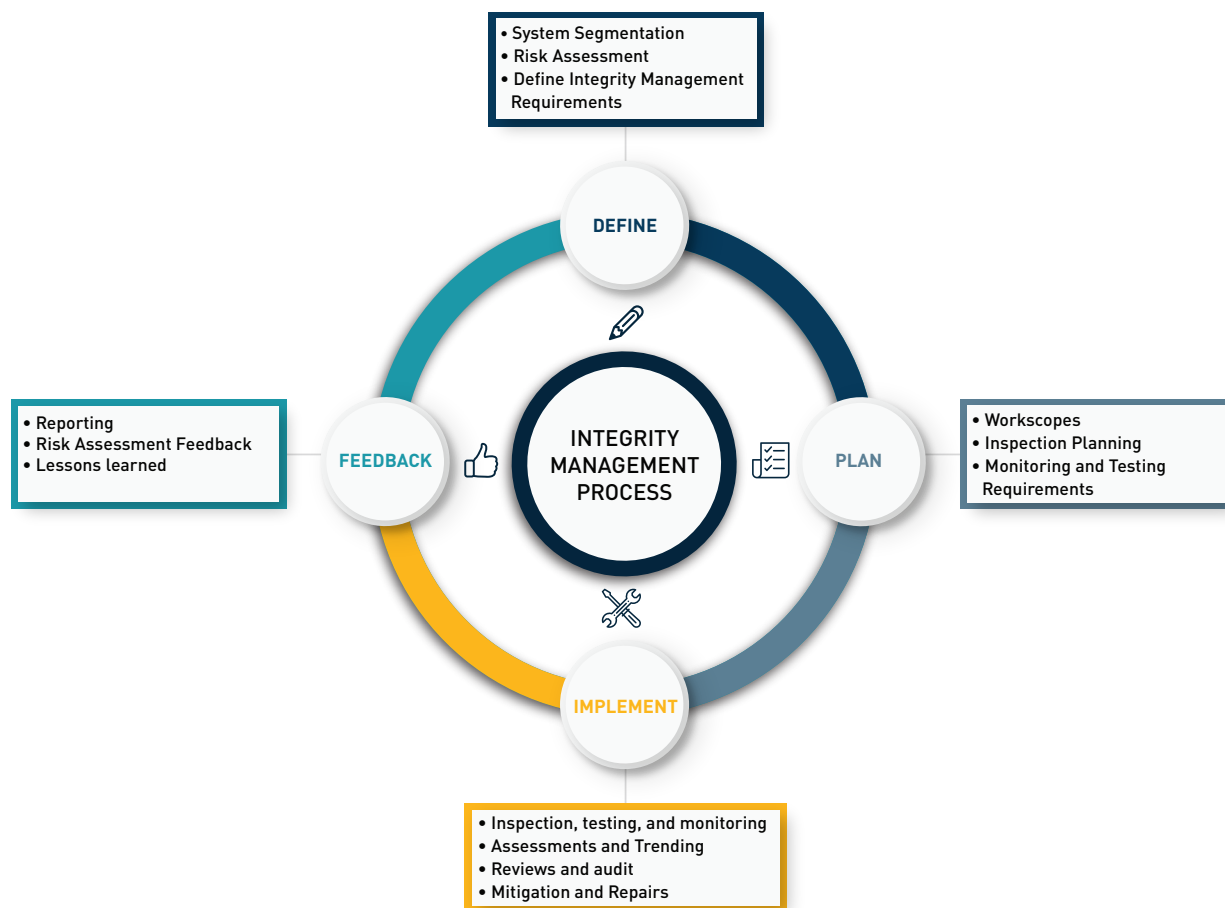
The current inspection plan was developed in Q1 2018 using a *risk-based* and *time-optimization* approach. The geographic spread of assets meant that some well pads take up to four hours to reach, so Oceaneering ran a desktop analysis of the infrastructure to identify the main areas of concern. This data provided a baseline guide to the integrity of the well pads in these remote locations. Once on site, our pool of multi-skilled inspection personnel including API Inspectors, non-destructive testing (NDT) technicians, integrity engineers, and project managers generated a baseline survey using ultrasonic and radiography. The produced pressurized equipment inspection report provided measurement of the existing corrosion and identified present corrosion mechanisms.

Also included in the initial inspection was the identification of any cracking, erosion, corrosion, and other characteristics required to calculate the remaining asset life. The inspection data was uploaded to the IDMS and used to further develop the inspection plan and categorize the issues. Recommendations for corrective actions were highlighted as a to-do list, enabling the operator to produce work orders to resolve the most pressing of issues. The full implementation of the program was completed in Q2 2018.

## Challenges

Managing facilities and a large amount of equipment spread over a large geographical area (80,000 acres or 323 km<sup>2</sup>) can be very complex. In the unconventional oil plays, run-to-failure is not uncommon and the equipment and infrastructure acquired by the operator were in varying conditions.

The Oceaneering team did not have access to as-built, isometrics, or piping and instrumentation



drawings for some of the equipment. The absence of design information resulted in the inability to complete initial fitness-for-service calculations. Site visits early in the project lifecycle were used to generate these diagrams and validate the information that was available.

In remote locations, even minor failures can have a severe impact on production, safety, and the environment and a historic “find and fix” approach can prove to be costly, unproductive and unsafe. By using Oceaneering to manage the integrity and inspection program, and applying a preventative approach to the integrity effort, the operator is now achieving more efficient, economical operations which are resulting in reduced inspection and remedial OPEX.

### Result

Oceaneering integrity engineers will continue to meet with the customer yearly to identify the

well pads and facilities requiring attention. The plan will evolve each year as new information and inspection data is collected. These activities will cover approximately 100 well pads per year and will use a range of methodologies including ultrasonic thickness inspection, API 510/570 visual inspection, digital radiography, and advanced NDT.

### Project Highlights

By developing and implementing a bespoke integrity and Inspection management plan, Oceaneering has helped the operator maximize its yearly budget spend and focus on critical workscopes.

The data collected from the on-site inspection has been incorporated into the existing model which enables us to optimize the program for subsequent campaigns.



[oceaneering.com](http://oceaneering.com)