



Case Study

12 February 2010

Project: Fitness For Service (FFS) on a 16" Main Oil Line

Problem: Failure of an additive injection quill had resulted in accelerated corrosion downstream of the injection point on a 16" Main Oil Line. Sonomatic were retained in order to ascertain if the line was fit for continued operation in the degraded condition.

Solution: In order to conduct a Fitness for Service that evaluates the safe future operation of the pipeline without being overly conservative, accurate measurements of both the extent and depth of the defect were required.

Corrosion mapping was conducted on the affected region in order to establish the extent of the defect (Figure 2). Time of flight diffraction (TOFD) was then carried out on the welds in order to establish that preferential weld erosion was not evident (Figure 3) and to confirm the minimum thickness.

The measurements were then used in conjunction with operating and design parameters to conduct a fitness for service according to API 579.

Benefits: The FFS concluded that the Main Oil Line could operate safely. The benefits of conducting a FFS with Sonomatic are:

- **Accurate measurement of defect**
- **Analysis of inspection data promotes better estimation of measurement tolerances**
- **The accurate measurement of the defect allowed a FFS to be conducted that was not overly conservative while still allowing safe operation.**
- **Rapid conclusion of the FFS prevented unnecessary operational delays**

Figure 1:



Figure 2:

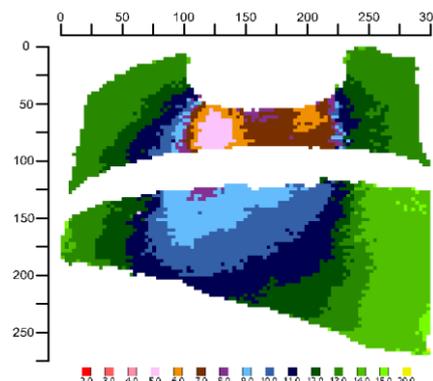


Figure 3:

