

# PREVENT PIPELINE FAILURE WITH CORROSION MONITORING

Maintaining pipeline integrity is a top priority of every pipeline operator. Recent pipeline failures have put pressure on pipeline operators to make every effort to ensure that pipelines are safe, especially in high consequence areas. Due to government regulations pipeline operators are required to follow two processes, the External Corrosion Direct Assessment (ECDA) and the Internal Corrosion Direct Assessment (ICDA). Rohrback Cosasco Systems new Soil Corrosion Rate Monitor and redesigned Ultracorr Ultrasonic Pipe Thickness Monitor provide effective corrosion monitoring solutions that help satisfy ECDA and ICDA standards.

## CORRATER® LPR SOIL CORROSION RATE MONITOR

### Preventing Pipeline Failure With Corrosion Monitoring

If you install & maintain underground pipelines, pipeline corrosion and corrosion monitoring must be a top priority. Proactive testing at the time of installation as well as ongoing monitoring of the corrosive soil environment help prevent catastrophic failure. The Soil Corrosion Rate Monitor is a low cost investment and will represent significant savings of the high cost of pipeline failure.

### Government Regulations & NACE Recommended Practice

Recent safety regulations, enforced by the government, require that pipeline operators mandate enhanced protection of pipelines in high-consequence areas, in the form of pipeline integrity programs.

These regulations improve safety by assessing and reducing the impact of external corrosion on pipeline integrity. Pipeline operators are now required to follow a process called the External Corrosion Direct Assessment (ECDA). Such a program is laid out in the NACE International Recommended Practice RP0502-2002.

Soil Corrosivity is a key factor to be considered in the ECDA pre-assessment process and influences where corrosion is most likely to occur. Previously soil corrosivity was estimated, or inferred from soil resistivity measurements, but this is not quantitative and prone to error. RCS has designed a state of the art solution to this problem.

### Why use a Corrater Soil Corrosion Rate Monitor?

The new Corrater® Soil Corrosion Rate Monitor allows a quantitative measurement to be made quickly and easily at the time of the pipe excavation and inspection. Multiple readings can be taken, at different locations around the pipe to check the consistency of the soil corrosivity. These readings conform to ECDA regulations and NACE RP directives.

### Corrater® Aquamate™ Instrument

The Aquamate™ LPR (Linear Polarization Resistance) instrument provides an electrochemical corrosion rate measurement with an added patented Solution Resistance Compensation (SRC). The instrument gives a quantitative direct corrosion rate measurement.

The Soil Corrosion Rate Probes heavy-duty construction makes it suitable for field use. The carbon steel probe head is easily replaceable and interchangeable with other alloys heads if required. Exact matching to the pipe grade is not typically required as this usually has little effect on corrosion rates.



### The Soil Corrosion Rate Monitor Features:

- Fast & accurate quantitative corrosion rate measurements
- Rapid soil corrosivity determination
- Weather proof & heavy duty construction for field use
- Low cost investment for high consequence areas
- Quick & easy multiple probing determines corrosive consistency
- Replaceable probe head with selection of alloys
- RCS patented Solution Resistance Compensation system



**ROHRBACK COSASCO SYSTEMS**

Corrosion Management Solutions

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# ULTRACORR® ULTRASONIC PIPE THICKNESS MONITOR

The Ultracorr® system combines very high sensitivity monitoring sensors with the non-consumable nature of inspection devices. It represents a breakthrough for internal corrosion monitoring at locations that are difficult to access. Once installed, Ultracorr® provides years of continuous service without the need for replacement.

Internal Corrosion is one of the leading causes of pipeline failure – and one of the most difficult to detect. Pipeline accidents have caused catastrophic injury and destruction, resulting in the US Department of Transportation imposing integrity management requirements on pipeline operators. To aid operator compliance, RCS has developed an efficient, reliable means of monitoring internal corrosion before it causes problems.

Ultracorr® will help solve the problem of monitoring in locations where sensor access is difficult, and will particularly suit buried pipeline operators faced with the problem of ICDA\* activities. After the initial dig to expose and ultrasonically examine HRHC (high risk, high consequence) locations, Ultracorr® sensors can be installed on the line, and the excavation backfilled. They can subsequently be accessed for measurement via a test post, located at ground level, above the line. Readings can then be taken every 3-6 months to verify the corrosion behavior thereby minimizing or eliminating the need for costly future excavations.

\*ICDA – Internal Corrosion Direct Assessment

**The Ultracorr® System is a combination of permanently mounted transducers and portable reading instrument. The system offers the following features:**

- **Non-intrusive Sensor**

The sensor is simply attached to the exterior of the pipe/vessel surface, using a proprietary transfer adhesive, assisted by the magnetic shell of the sensor. While requiring a clean metal surface for attachment, no special surface preparation is needed.

- **High Resolution**

The resolution of the technique is more than an order of magnitude greater than conventional ultrasonic sensors. Estimation of corrosion rates are made in a matter of weeks, rather than years. The Ultracorr® sensor is a true monitoring device, for permanent installation, providing frequent updates on corrosion rates in the user's system.

- **ICDA Compliant**

Ultracorr® is ideally suited to form the backbone of an ICDA asset integrity system for pipeline operators. The high resolution of Ultracorr® enables pipeline operators to detect changes in corrosion rates and readjust scheduled reassessment intervals to suit.

- **User Friendly Measurement**

Sensors are electronically tagged, to avoid confusion, when periodic measurements are made, and stored in the hand held, portable reading instrument.

- **Non-Consumable**

Unlike electrical resistance probes, the Ultracorr® sensor does not require replacement, and will provide many years of uninterrupted service, without the need for routine maintenance. It is ideally suited for inaccessible locations, such as buried pipelines.



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