

Direct Current Voltage Gradient (DCVG) Survey

As pipelines age coatings deteriorate and if corrosion control is not being provided, the rate of corrosion can be excessively rapid in some soils, salt water or where it is exposed. For buried pipelines, coatings alone are inadequate and corrosion defects will likely occur. DCVG technique is being performed to detect coating defects, calculate the level of severity and measure the effectiveness of the cathodic protection in place without damaging the pipeline.

When DC signal is applied to a pipeline, current flow through the soil towards coating defect, generates a Voltage Gradient. By observing at the direction of these gradients, the location of coating faults may be identified. Once defect is located, one determine its importance by measuring the potential lost from the defect epicenter to remote earth. The PD is expressed as a fraction of total potential shift to the pipeline.

Strength of DCVG

- DCVG technique provides accurate and reliable. The high sensitivity of this technique permits even the smallest defect to be located.
- Accurate to the extent of ± 0.1 meter of their actual location.
- High resolution in “pinpointing and sizing” the coating defect.
- Determine Anodic and Cathodic behavior of the coating defect.

DCVG is a useful technique for;

- Location of pipeline.
- Detection of cable fault location.
- Delineation of coating defects.
- Behavior of coating defect.
- Severity & Nature of coating defect.
- Stray Current Interference.
- Checking of Insulating Flanges.

