SOIL TESTING FOR CONDITION EVALUATION OF BURIED WATER MAINS

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SUMMARY

The role of traditional soil testing techniques such as resistivity, soil pH, presence of sulphides and redox potential is discussed in relation to corrosion processes and their ability to accurately quantify corrosion rates of buried ferrous pipes. In addition the role of electrochemical techniques, such as the linear polarisation resistance (LPR) technique is similarly discussed.

Laboratory-based galvanostatic LPR is considered to be an effective technique in quantifying corrosion rates, whereas utilisation of individual results from traditional testing are considered unreliable and inappropriate, and a combination of the results, using such methods as AWWA-C105, are also of limited value.

Keywords: Corrosion Rate, Soil Testing, Water Mains.

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