

WERF Report on Sewer Electro-Scan:



The report: An Examination of Innovative Methods Used in the Inspection of Wastewater Environmental Research Foundation. December 2004.

The report provides a comprehensive review of the current state of the art investigation technology for sewers as well as reviewing the needs and current methods used for pipe condition assessment.

An in-depth technology review and field monitoring of the sewer electro-scan system is part of the report.

Sewer Electro-Scan was selected as one of the six innovative gravity sewer test methods for this detailed investigation.

Some of the findings of the report were:

Applicability

...”Electro-Scan can detect service connection problems (tapping problems), leaky offset joints, radial and longitudinal cracks in any non-conductive pipe typically with diameters between 3 and 60-inches.”

Objective Results

...”The results obtained using the Electro-Scan test are more than qualitative in that they do not require operator interpretation as to

whether a leak could occur in a pipe at a particular location. The fact that an electrical current did flow from the pipe and was measured indicates that water can flow into or out of the pipe at this location. The results produce a relative measure of the defect size and can be used in conjunction with the location to establish a probable cause for the leak.”

CCTV Comparison

...”CCTV inspection methods only identify inflow problems if they occur at the time of the inspection. Likewise, infiltration can only be observed if the water table is sufficiently high above the defect at the time of the inspection to drive water through the defect. Finally, pipe surface below the water level in a flowing pipe cannot be observed using CCTV, so leaks in this region go undetected. The Electro-Scan method will pick up leaks in all of the above situations.”

Quantitative Prioritization

...”The inspection technology is well suited to providing an initial quantitative evaluation of the leak tightness of the pipe system and

prioritizing pipe segments for further evaluation.”

Part of Routine Maintenance

(Electro-Scan used with) “the sliding plug method can also be used in conjunction with a jet truck and integrated into routine sewer maintenance operations.”

Validation of Results

...”CCTV, smoke testing and joint pressure testing have been used to validate the analysis of the Electro-Scan technology. Results have been validated to show good correlation with pressure testing and smoke testing results. Validation with CCTV also confirmed the results of the Electro-Scan with the Electro-Scan identifying substantially more leak defects than CCTV.”

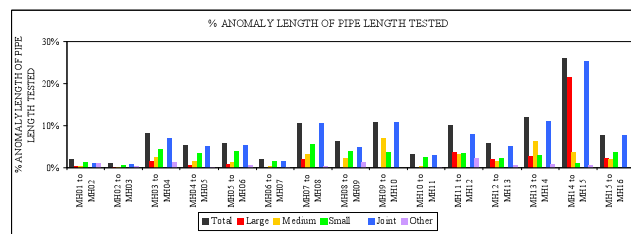
Versatility

...”The size of the equipment and set up minimize traffic disruption and allows entry into areas with limited space.”

The report may be ordered through the website www.werf.org or www.werf.org

DEFECT SUMMARY BY MH TO MH SECTION

Vitrified Clay Pipe
Diameter: 6 inch
Total length of pipe sections 4,225 ft



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