

UNDERGROUND LEAK DETECTION

*Current Practices in Leak Detection – Assessing
Sources of Leaks, Pin-Pointing Excavations,
Mitigating Risks and Claims”*



CORIX®

Cleveland
Thermal

Cleveland Thermal History

- ▶ District Steam operations began in 1894 & commissioned the District Cooling system in 1993
- ▶ Cleveland Thermal, a Corix owned business, is a district energy company that now utilizes 100% CNG to produce steam
- ▶ Supply thermal energy to more than 125 public, private and institutional properties downtown (over 30 million sq. ft.) thru approx. 16 miles of pipe
- ▶ Over 12,000 Ton of Cooling Capacity, 450 MLBs/Hr. Steam Capacity
- ▶ Public Utilities Commission of Ohio (PUCO) regulated



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Leak Detection

“The Process”

- ▶ Understand Your Facilities
- ▶ The investigation
 - ▶ Manhole inspections
 - ▶ Including other utility vaults
 - ▶ Thermal Imagery Scans
 - ▶ Visual Surveillance
 - ▶ Sounding Reports
 - ▶ Drawing Reviews
 - ▶ Ground Ultra Sounding (Pin pointing)
 - ▶ Other Factors
 - ▶ Public Safety
 - ▶ Damage Liability Claims
 - ▶ Loss of Revenue



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Manhole Inspections



AERIAL INFRARED SCAN

BEFORE

AFTER



AERIAL INFRARED SCAN

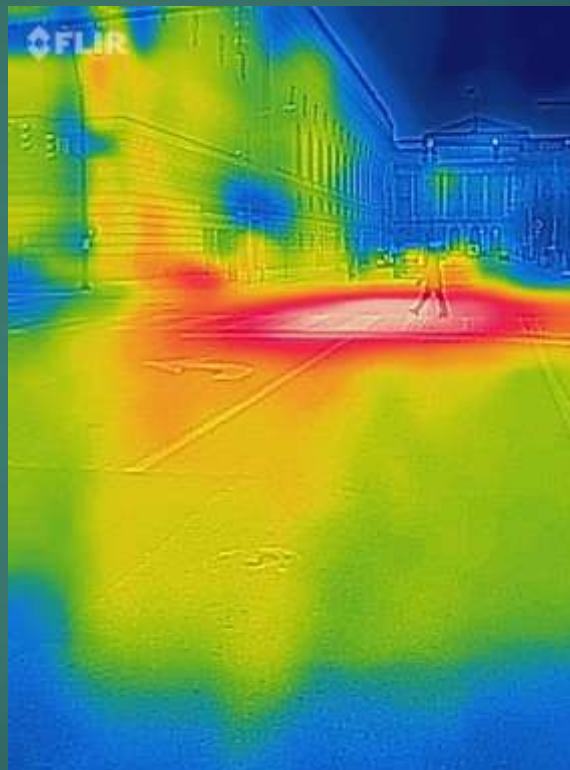
BEFORE



AFTER



Use of Portable Infrared Technology



Ground Sounding & Investigation



City Water Leaks



Water Leak Traveling thru MCI Conduit onto the Steam Main



Ground Water?



Sewer Leak??







QUESTIONS??

