A Proactive Approach to Assessing and Managing The Wastewater Collection System, and a UV Cured CIPP Rehabilitation

Stamford, CT WPCA

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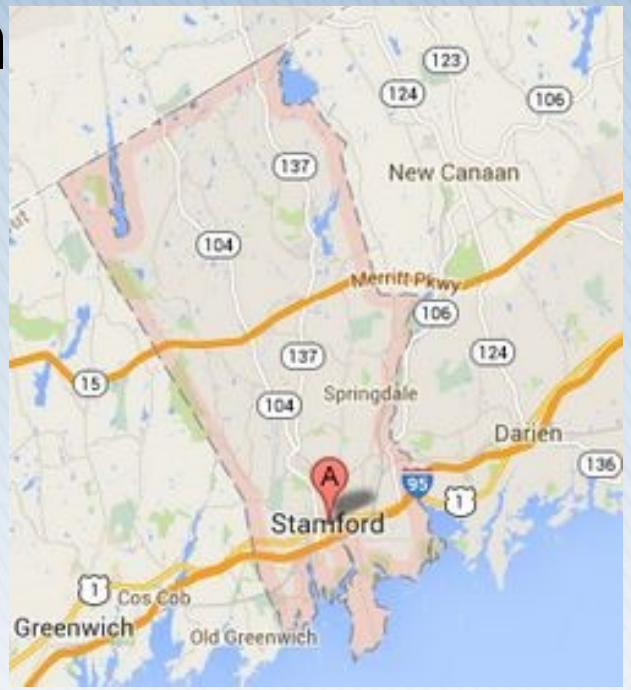
WRIGHT-PIERCE
Engineering a Better Environment

Introduction

- Overview of the Stamford WPCA's system
- Components of the CMOM plan
- Status and Goals of CMOM program
- Area of Corrosion Attack
- UV Cured CIPP Repair
- Questions and Answers

System Overview

- Serves Stamford and Darien
- ~300 miles of sewer
  - Up to 60” diameter
  - ~20 miles of sewer >24”
- 23 Pump Stations
- 24 MGD WWTF



CMOM Program Components

- CCTV/Laser/Sonar Inspection >24” sewer
  - Phased approach based on criticality
- GIS-based data storage program
- Pump Station & Force Main Evaluations
- Sewer Cleaning Develop a Capital Improvement Plan (CIP)

Select Tools that best fit your needs, budget and system

CMOM Program Components

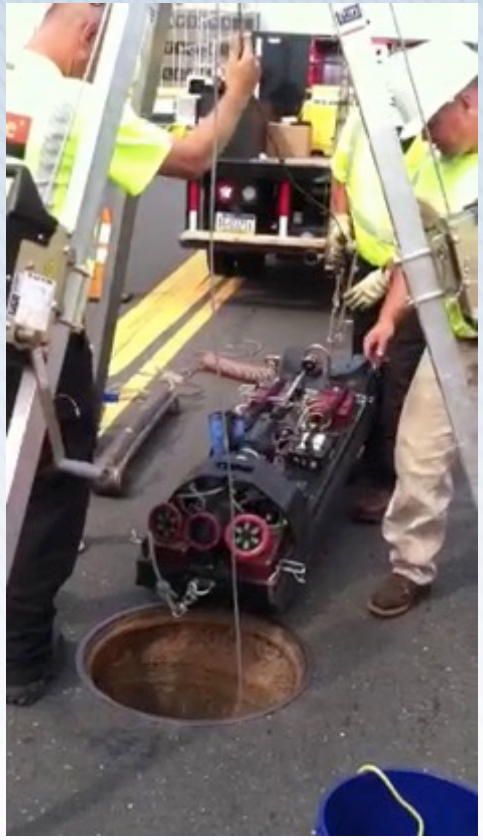
Criticality Assessment

- Focused on large diameter sewers:
  - Lack of WPCA inspection equipment >24”
  - Increased Environmental Risk
  - Increased Cost / Complexity of Repairs
- Prioritized interceptors along waterways
- Concrete and Clay Interceptors

CMOM Tools

CCTV/Laser/Sonar Inspection

- RedZone Robotics – Pittsburgh, PA



CMOM Tools

RedZone Robotics

CMOM Tools

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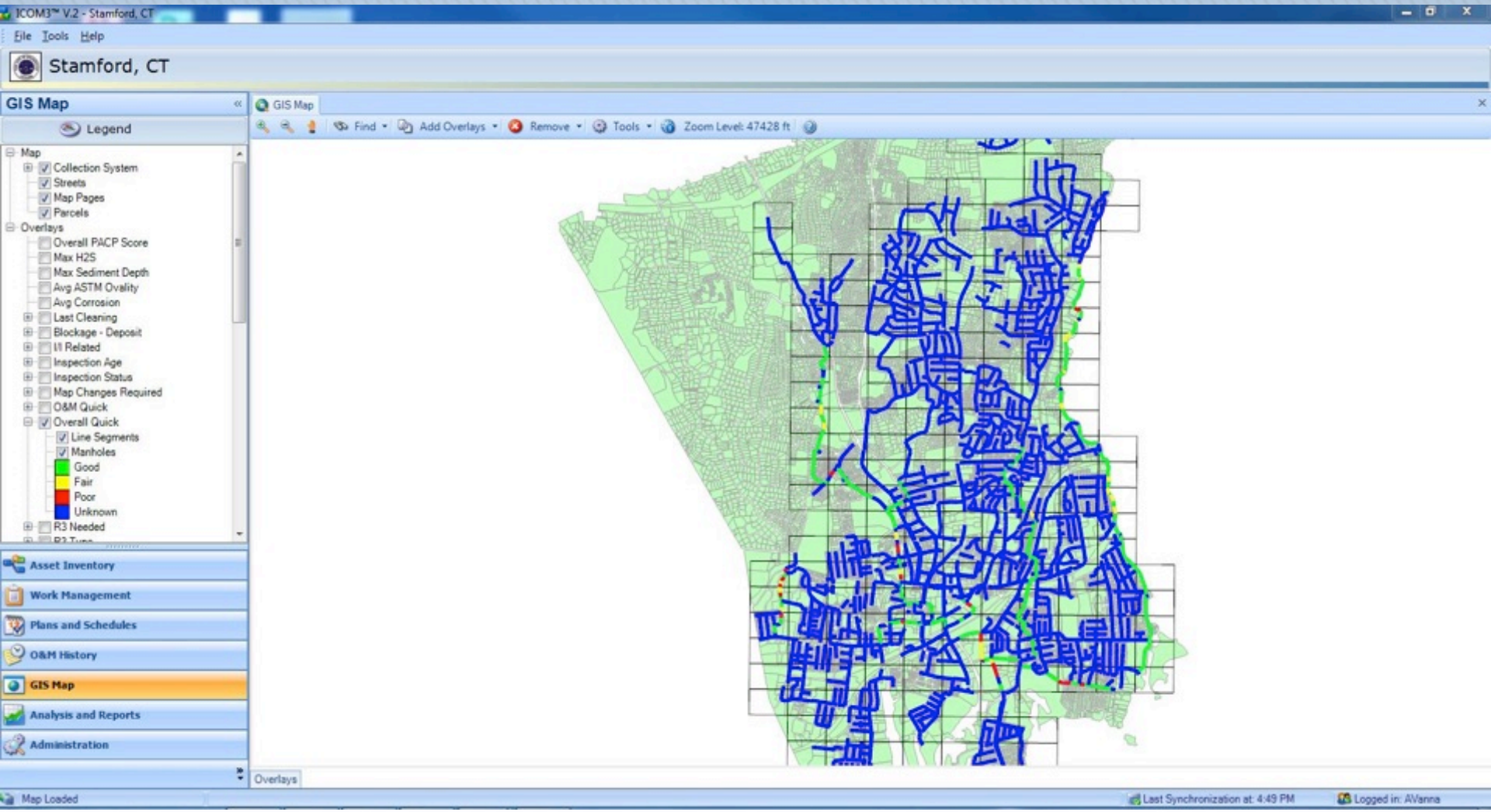


Current Status

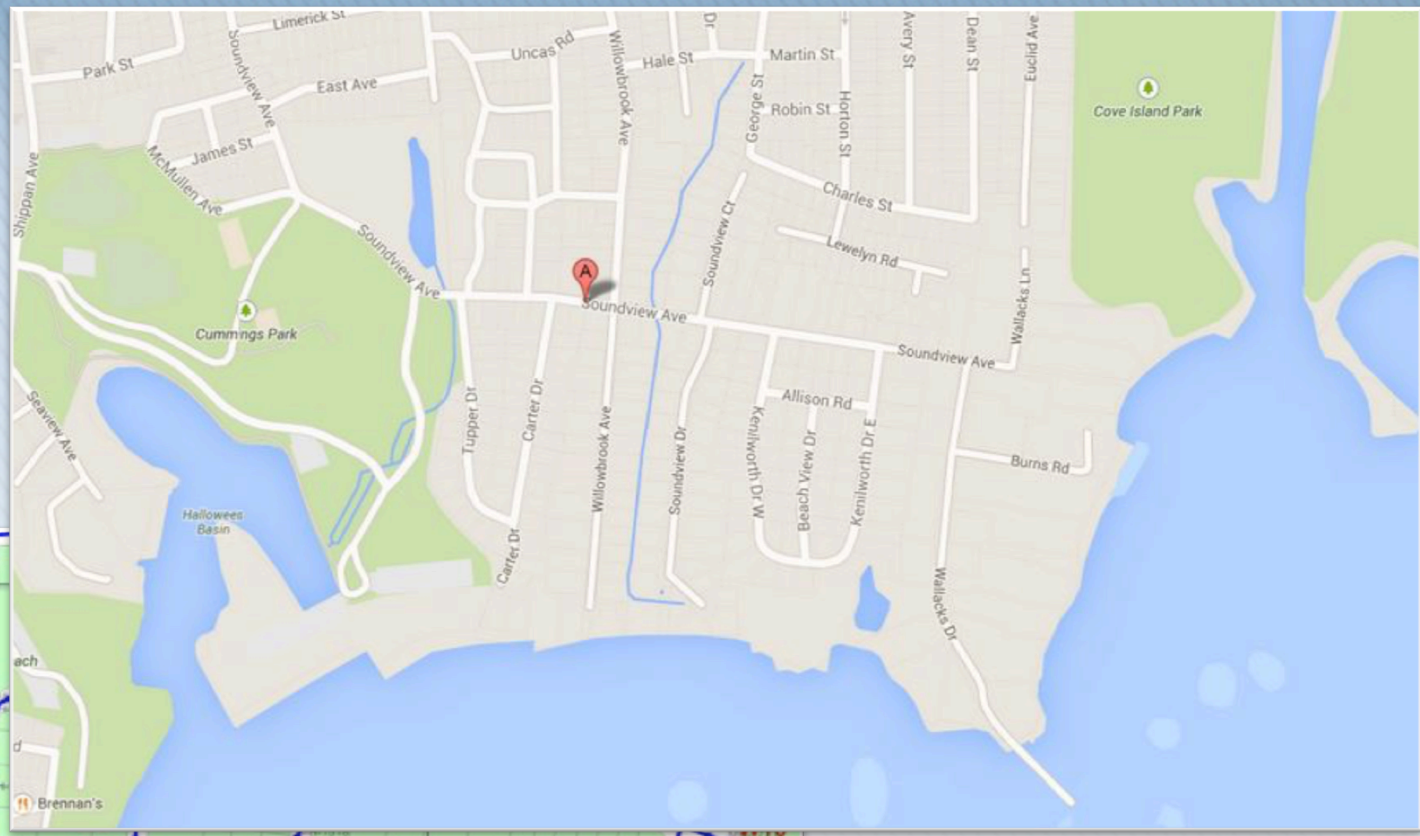
- Inspection Complete
  - 120,000 LF miles of <24”
  - 22 of 23 Pump Stations & Force Mains
    - 23rd station was just commissioned
- Reviewing Report
  - Evaluating the CIP
  - Timeline for repairs
- Performed 1 Immediate Repair
- Sewer cleaning in 2016
  - 13,000+ LF of 30” to 60” pipe
- Flow Monitoring shifted to a separate I/I Study by others

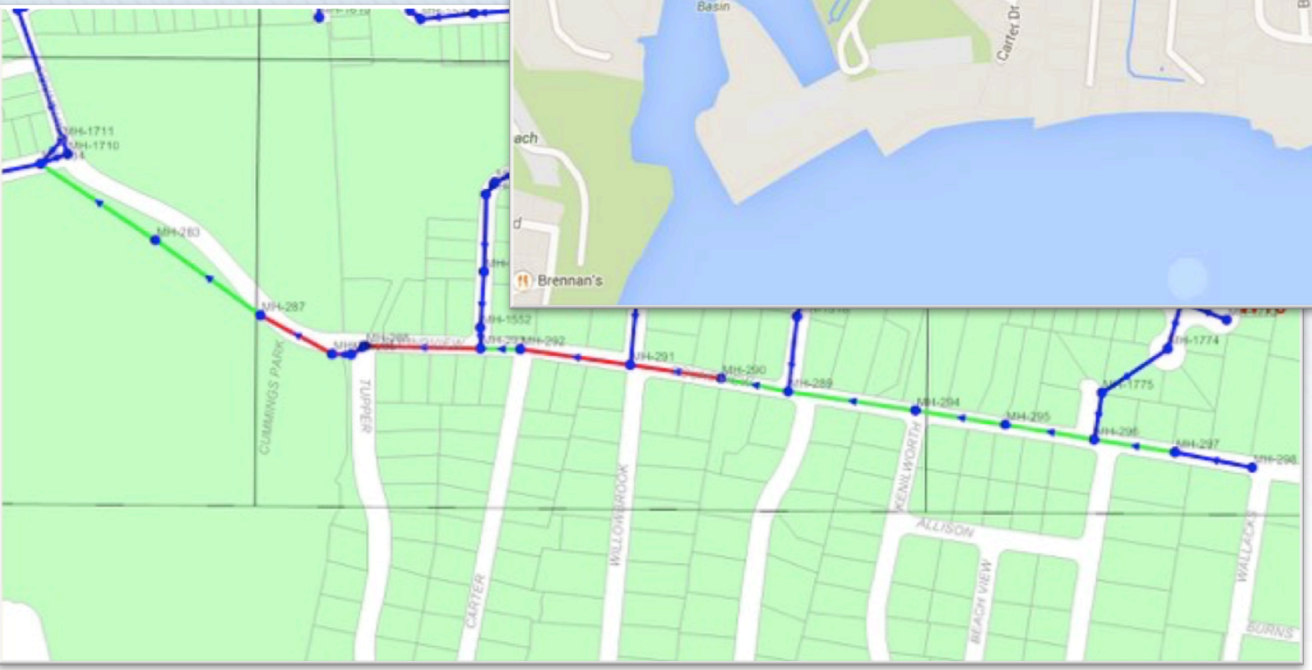
Completed Repair

Soundview Avenue

- 36” and 42” RCP Interceptor
- Rebar visible during inspection
- ~3,000LF of sewer in danger of collapse

Recent Results





Completed Repair

Soundview Avenue Rehabilitation

- WPCA and W-P initiated design immediately
- Lining was preferred method:
  - Too deep for open cut (Road Closures)
  - Laterals reduced sliplining's viability
  - Linestop on upstream forcemains for bypass
- Precision Industrial Maintenance
  - Selected as contractor - very competitive bid
  - UV cured CIPP liner

Completed Repair

Soundview Avenue Rehabilitation

- 4 phases / aspects of the work
  - Setup a bypass system and traffic control
  - Pre-inspect and pre-clean the lines
  - Perform the lining
  - Restoration

Completed Repair

Soundview Avenue Rehabilitation

<u>Bypass</u>

- 3,000 LF of 18” HDPE by-pass required
  - Used existing line stop of combined force mains upstream
  - Laid 18” bypass on double yellow line of road, buried in intersections for traffic

Recent Results

Completed Repair

Completed Repair

Completed Repair

Completed Repair

Soundview Avenue Rehabilitation

Completed Repair

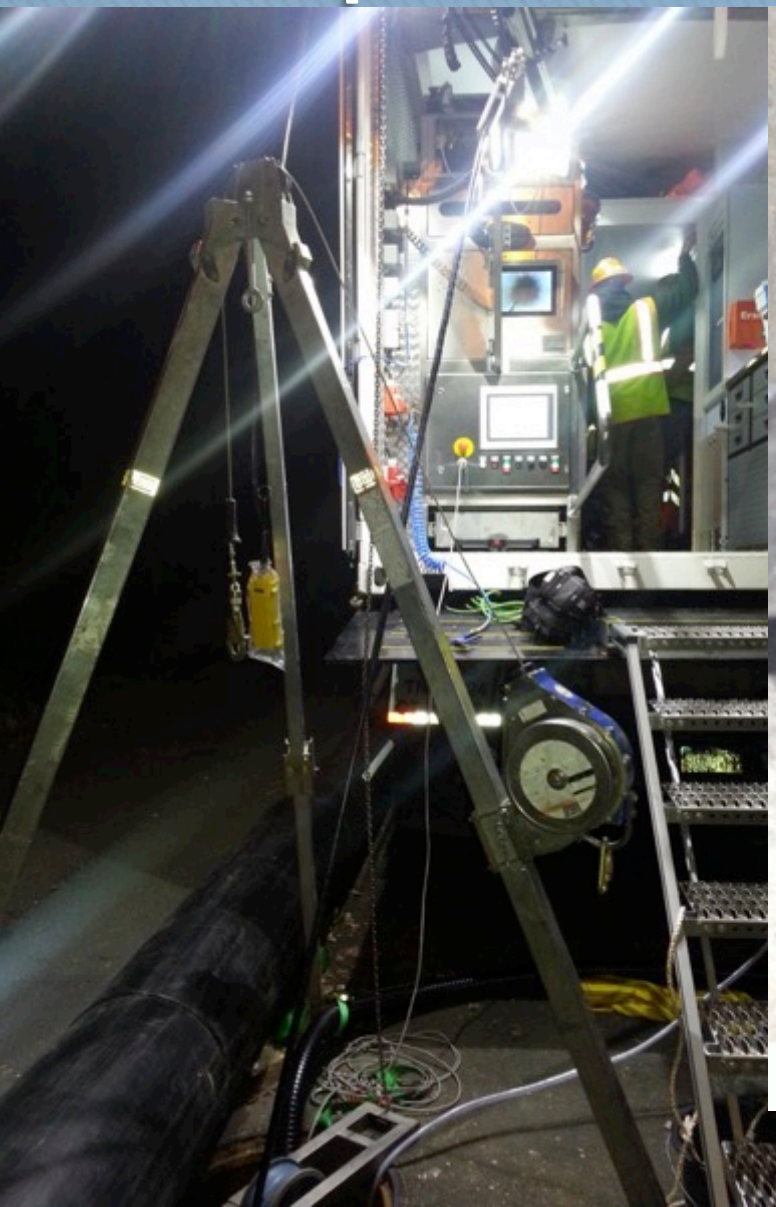
Liner Installation

- Differences with UV-cured CIPP
  - UV-Cured using fiberglass vs. “felt sock”
  - Winched into place vs. inverted
  - Quicker cure times are possible
  - Potential for less odor and noise complaints
  - No refrigeration needed for liner materials

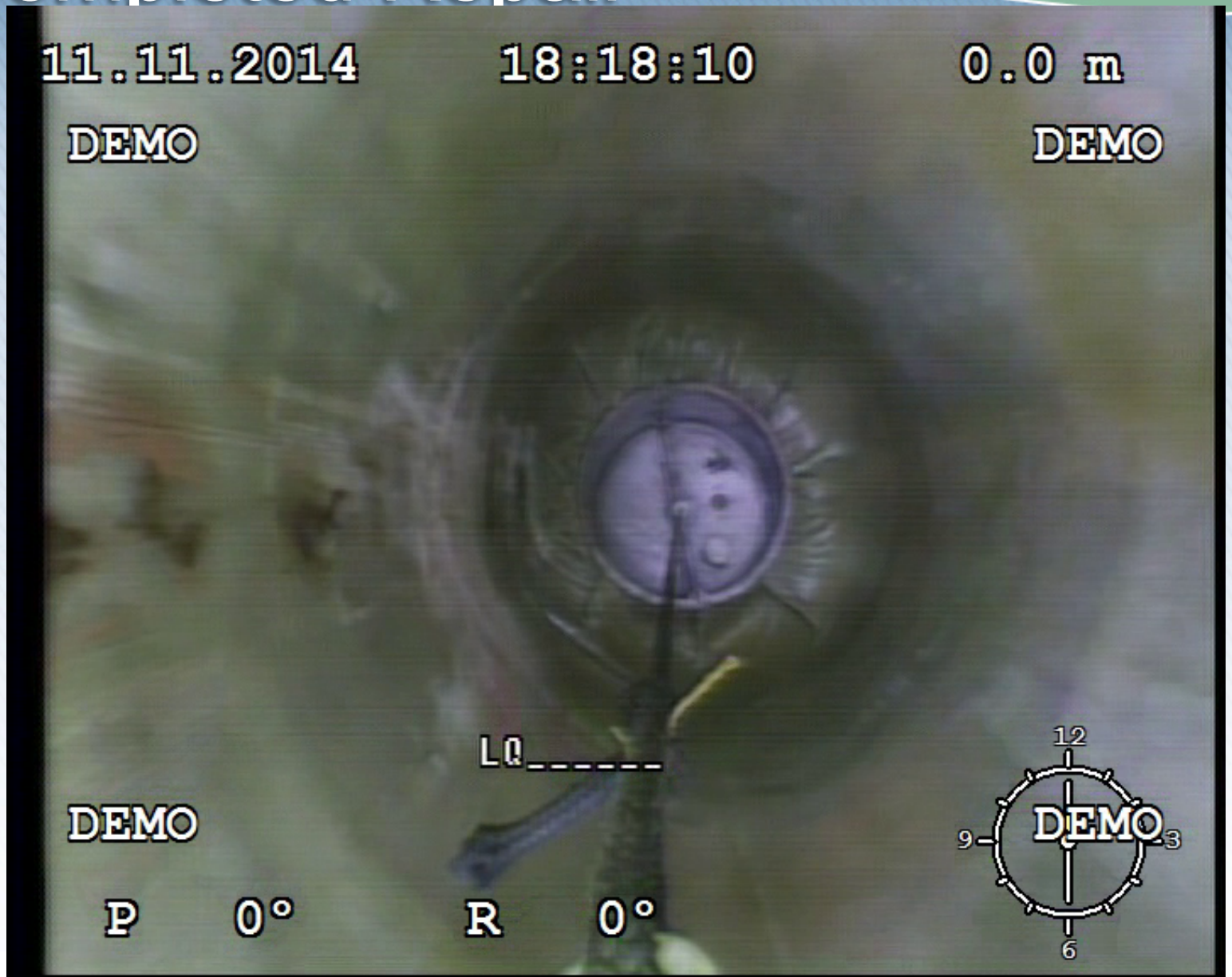
Completed Repair

Completed Repair

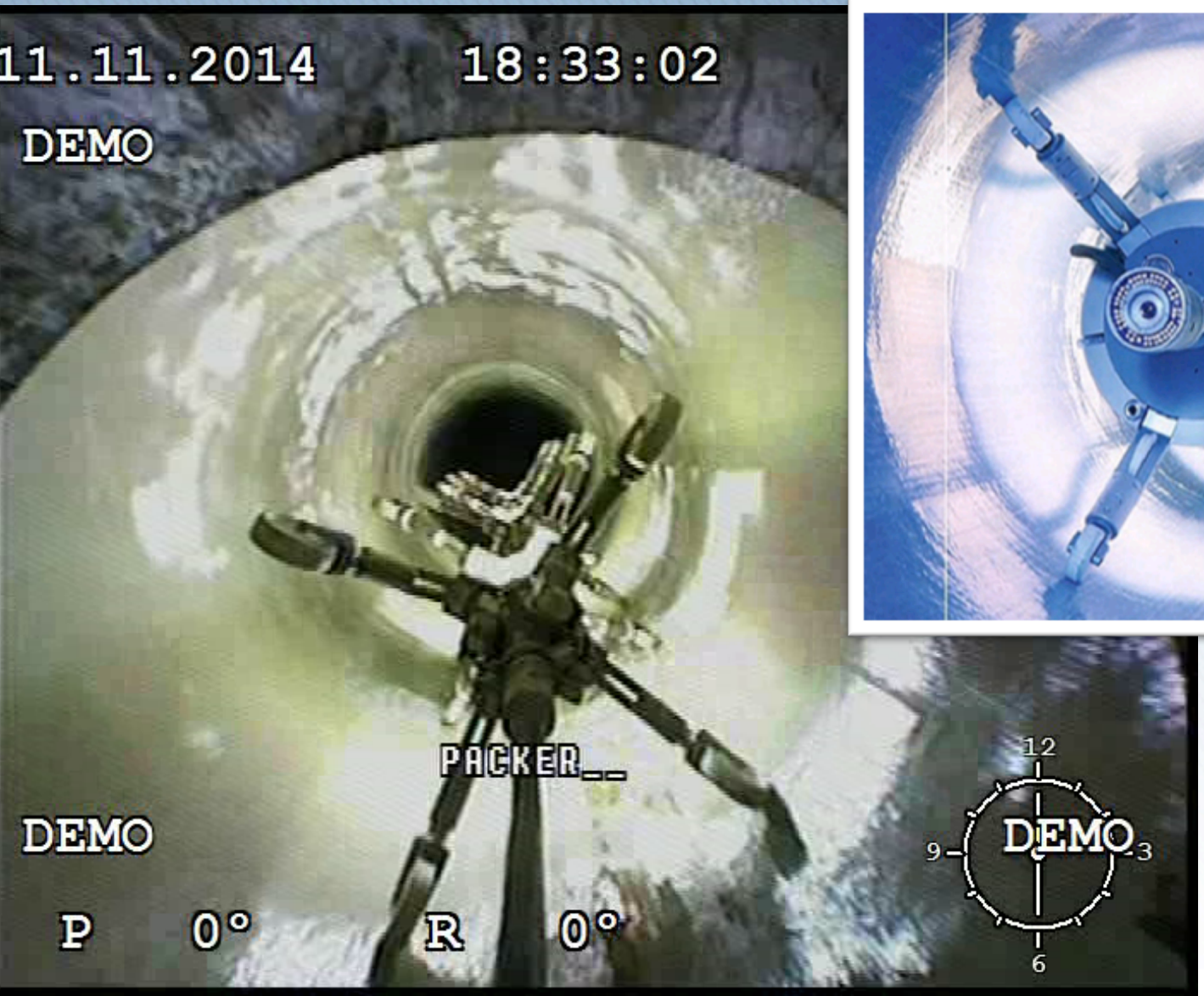
Completed Repair

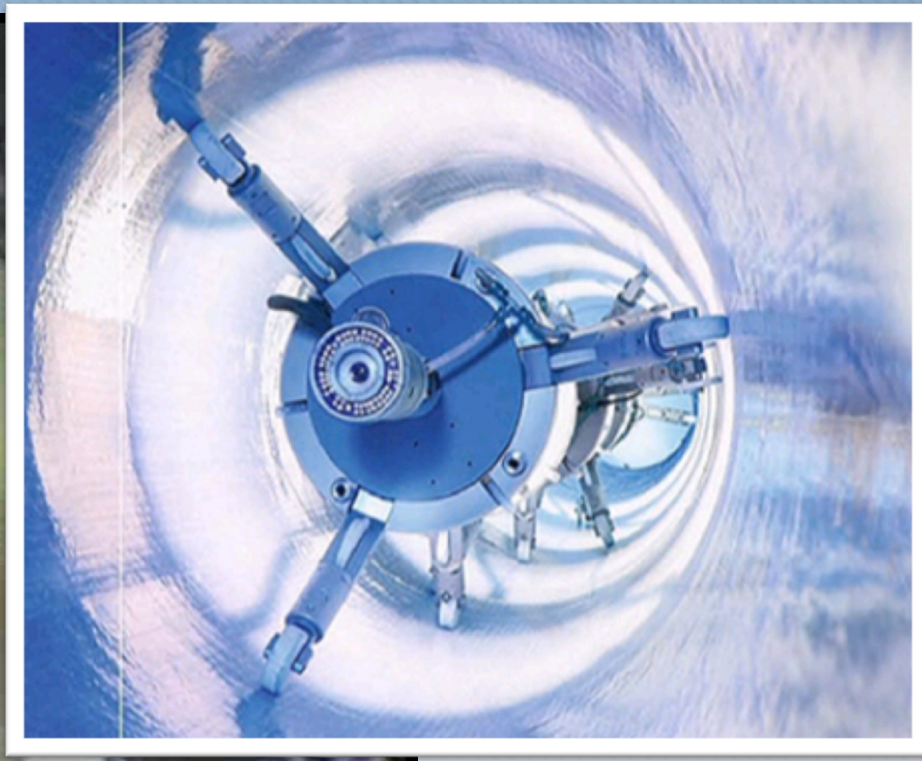


Completed Repair



Completed Repair





Completed Repair

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Acknowledgements

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Questions / Discussions