



THE Event For The Utility Infrastructure Industry

Underground Construction Technology
International Conference & Exhibition

Structural Repair of Water Lines with CIPP



Cedric Bergeron
DUO Rehabilitation inc.



Agenda

- 1- Construction Process
 - a- Site preparation; Traffic control, temporary water, excavation
 - b- Pipe preparation; Cleaning, laterals
 - c- Lining process; wet out, install, cure
 - d- Post-lining; Pressure tests, lateral connection reinstatement
- 2- Case Study
 - a- High pressure fire suppression line
 - b- Dealing with water infiltration





Construction Process – Site preparation

1- Temporary water and traffic control





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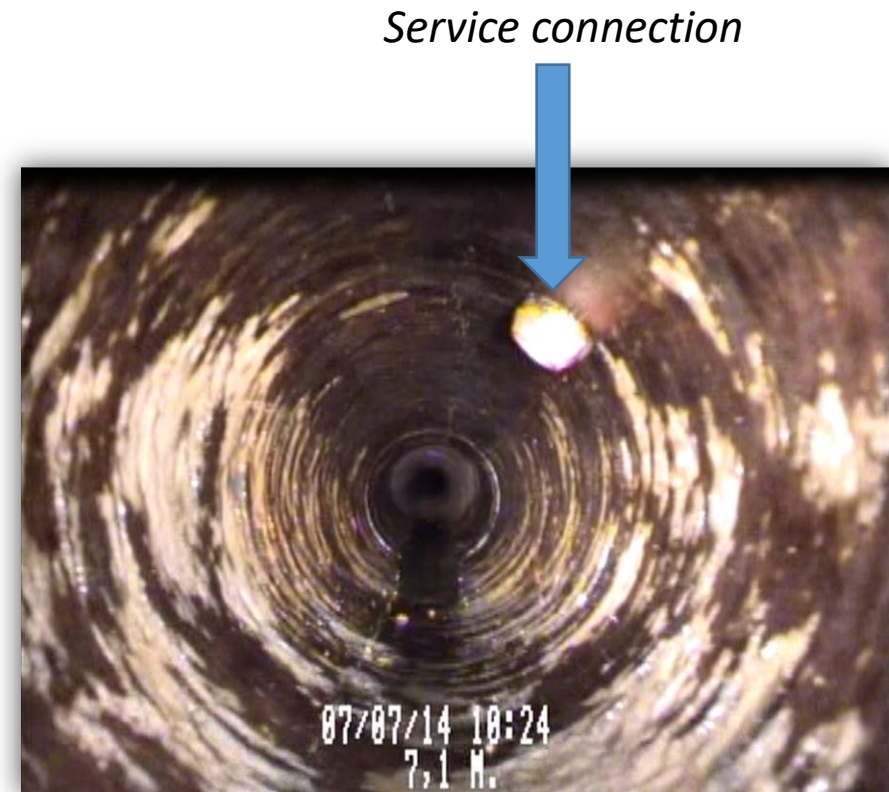
Construction Process – Site preparation

1- Excavation, shoring, opening the pipe



Construction Process – Cleaning

- 1- Cleaning options; Boring, Drag scraping, High pressure jetting, etc.
 - Dealing with service connections when cleaning.
 - Pipe measurements

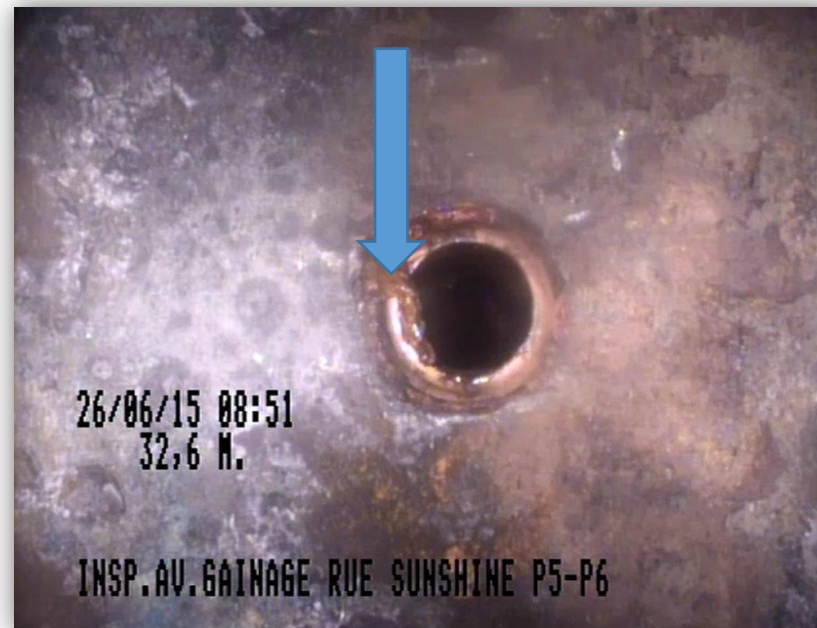
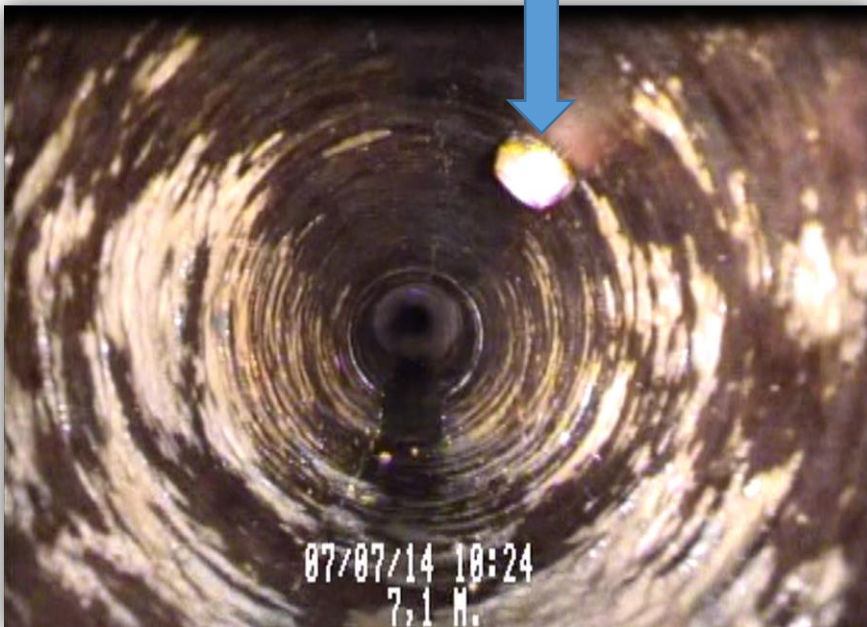


Construction Process – Service connections

- 1- Locating the service connections
- 2- Inspection et cleaning
- 3- Corking

Service connection

*Must clean properly to
prevent resin migration*





Construction Process – Lining process

- 1- Wet out; On site vs Off site facility
- 2- Video inspection; Corks, water infiltration
- 3- Quality control



Construction Process – Lining process

- 1- Install; Pull in, inversion, install speed, etc.
- 2- Cure; water, steam, resin migration
- 3- Quality control



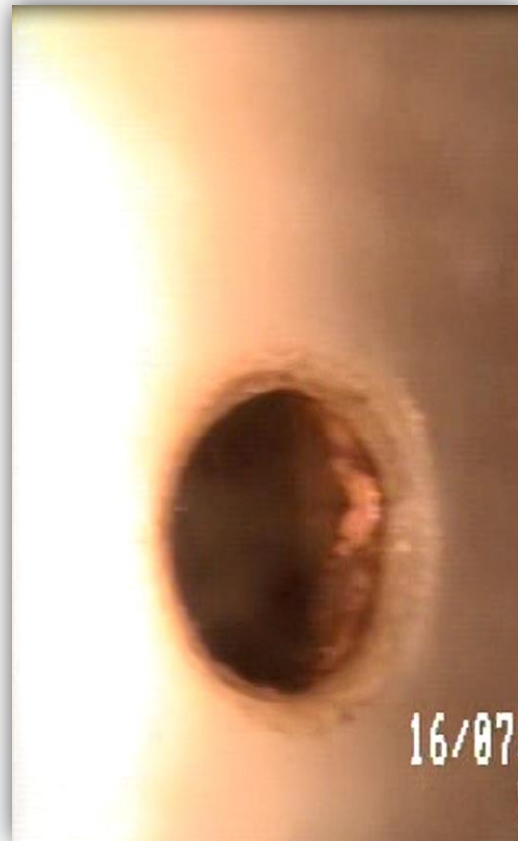
Construction Process – Post Lining

- 1- Pressure testing
 - Set up
 - End Seals
 - ASTM F-1216



Construction Process – Service connections

- 1- Locating the service connection
- 2- Opening the connection
- 3- Removing all debris from the service line



Case Study – Kruger inc.

Problem

- 1 - Just in time paper product manufacturer
- 2 - Multiple leaks under the loading dock
- 3 - High pressure fire suppression line, 170 psi, 10"
- 4 - Can't afford down time
- 5 - Minimal footprint on site required



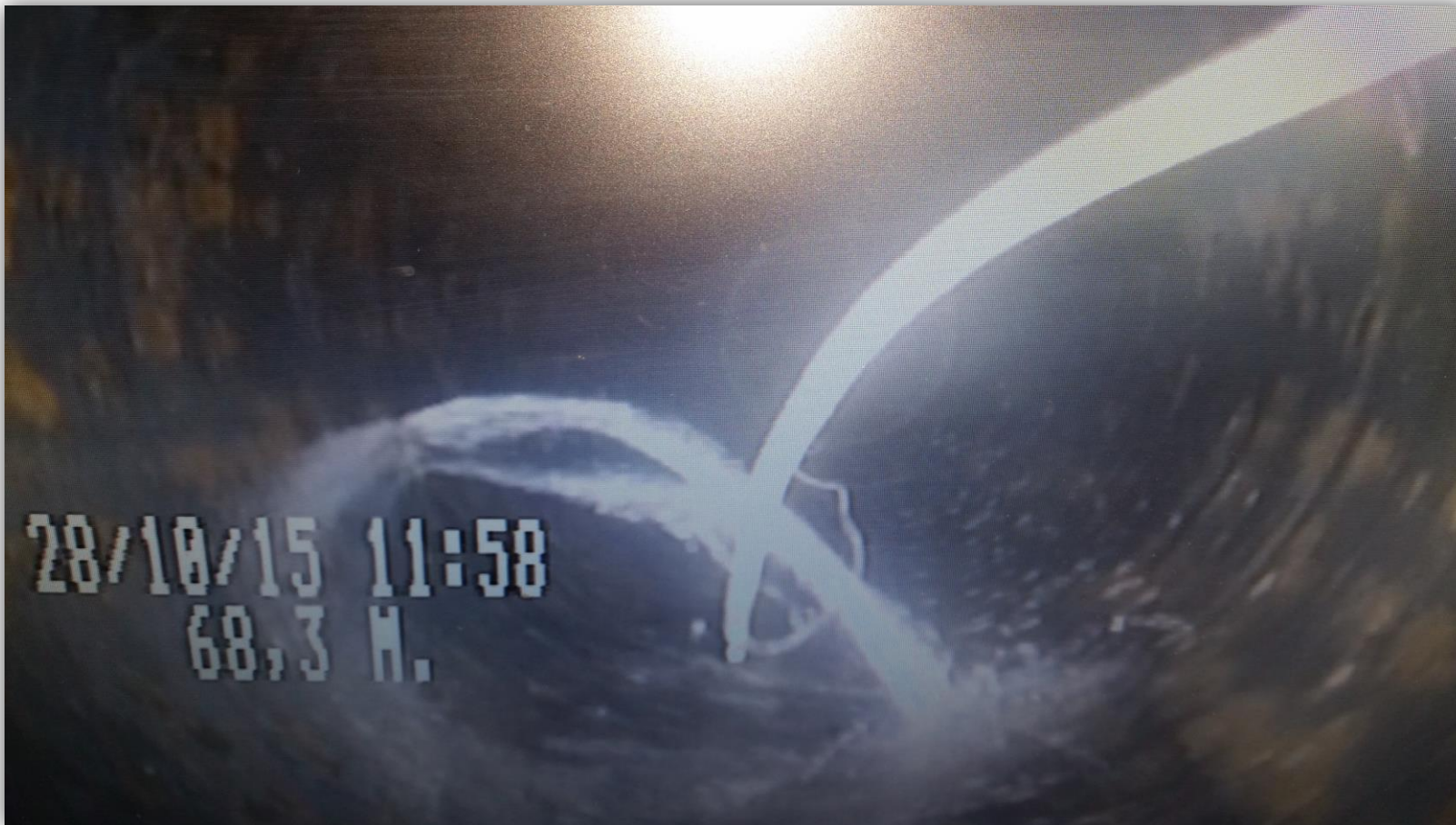


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Case Study – Kruger inc.

Unexpected problems





Case Study – Kruger inc.

Possible solutions for water infiltration

- 1- Sectional repair
- 2- Hydro excavate a small pit and pump
- 3- Line over the infiltration
- 4- Point repair

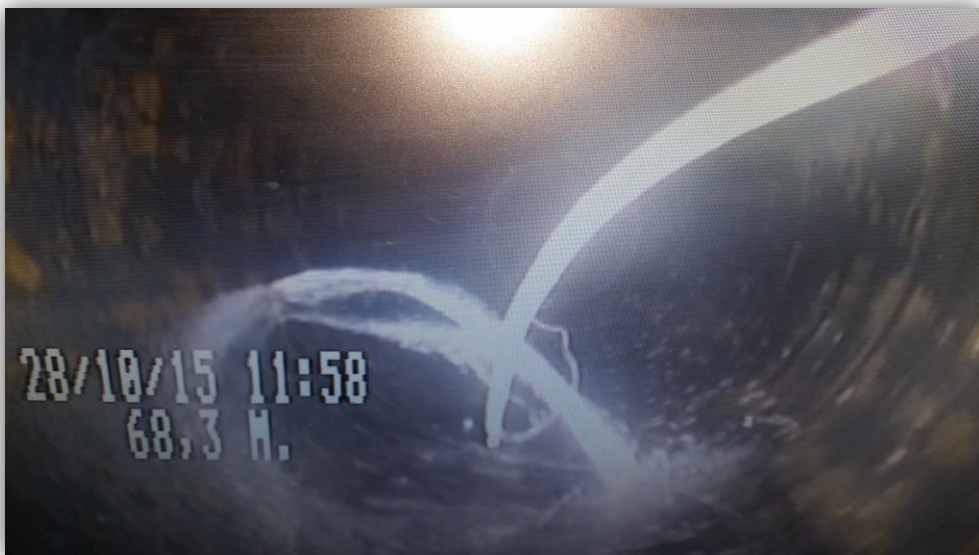
Other potential problems

Abandoned services and Tees
Voids
Offset joints

Case Study – Kruger inc.

Sectional point repair

- Quick
- Minimal footprint
- Effective
- Add structural capacity do damaged areas





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QUESTIONS / ANSWERS

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