

Lead Detection: A Novel Technique

Goal

Simple, fast, easy to use instrument that answers:

- "Is Lead present? Yes or No"
- Amount of Lead present
- Level of confidence in the answers

Principle*

Measurement of the electrical resistance of the water distribution service line as:
Electrical Resistance of Lead \gg Electrical Resistance of Copper
Sensitive enough to detect 1 foot of lead pipe in a 20 foot service line.



Results Obtained

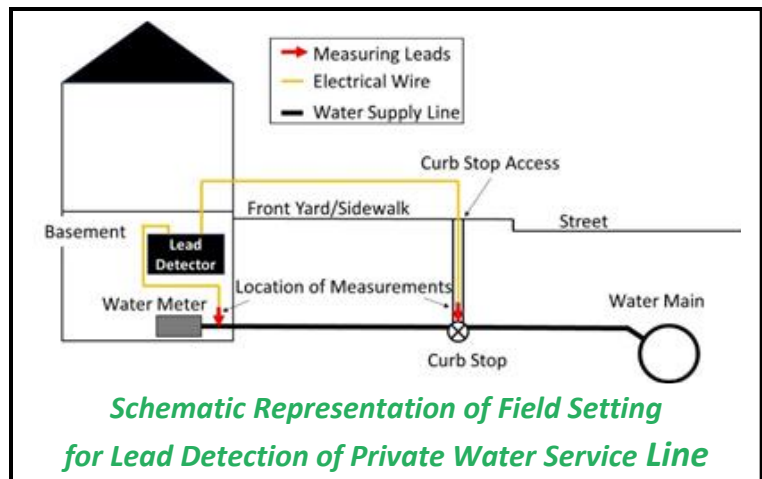
- Principle demonstrated during multiple field-tests on private side of water distribution lines in Boston metropolitan area.
- Measurements taken from curb stop access to water-meter revealed presence of lead.

Conclusion

- Confirm the presence of Lead.
- Very fast measurement: Results in less than a minute.
- Currently requires two operators to perform the measurement.
- No excavation.

Future work

- Validate next generation testing lead/equipment.
- Perform measurements on different parts of the water distribution system.
- Further analysis on different type of pipes, access points, connection between pipes, etc. to further prove concept and measurement device design.
- Determine location of the lead portion of the pipe within the water service line.



**Patent Pending*

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