

# A “Hole” New Look at Corrosion

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# PROBLEM!

- Approval of an alternative assessment criteria (other than internal inspection) prior to an upgrade by cathodic protection.
- Approval had additional requirements and contingencies.
- Had reports of releases from USTs who utilized the alternative assessment criteria. Approval was not followed.

# RESULTS

- Issue went all the way to the Michigan Supreme Court. Michigan won.
- Notified 256 facilities (875 tanks) that USTs were not properly upgraded. Outlined requirements to come into compliance. Given a year to comply.
- Hit with a Class Action Lawsuit.

# REQUIREMENTS

- Notification required internal inspection of all the tanks in question.
- Internal inspection required the use of ultrasonic testing.
- Must have a minimum 75% of the original wall thickness and meet NLP A 631.

# RESULTS

- 64 USTs turned out to be FRP or working STI p3's that had impressed current CP added to them. Owner had no idea.
- 499 USTs internally inspected.
- 82 facility confirmed releases reported.
- 299 USTs removed







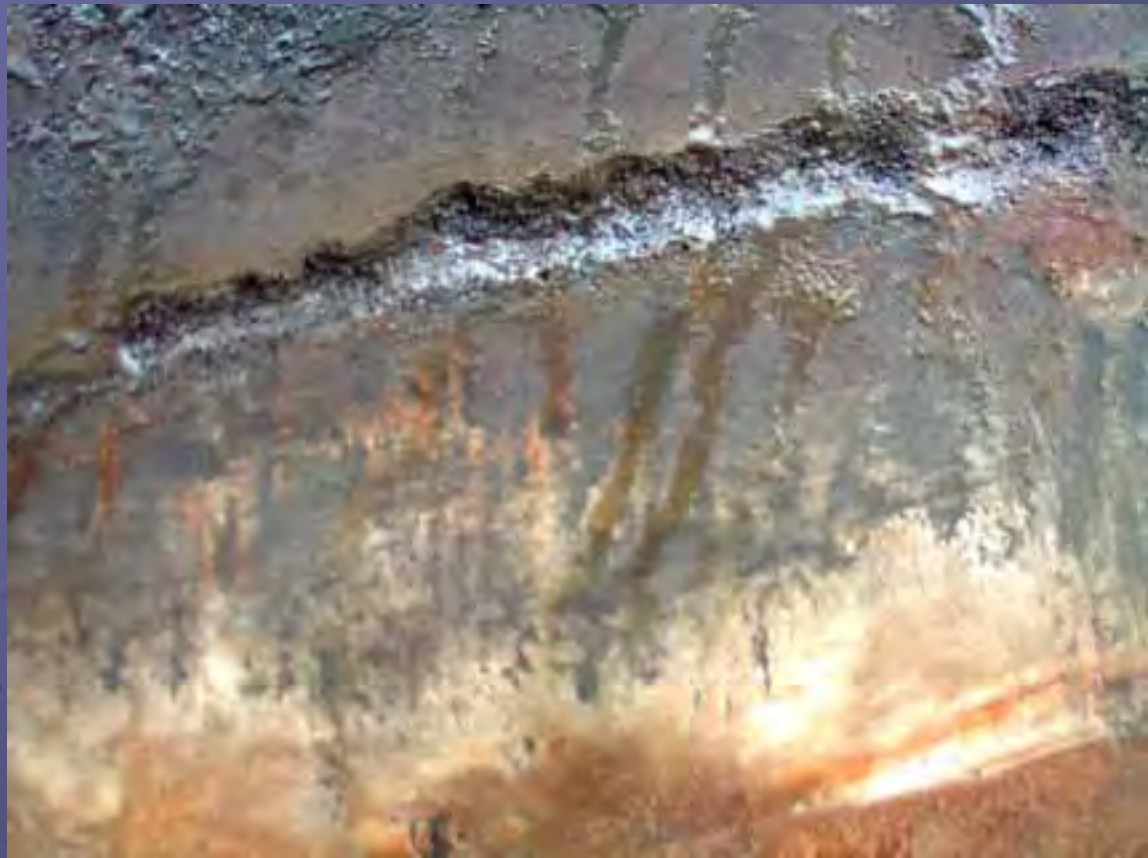






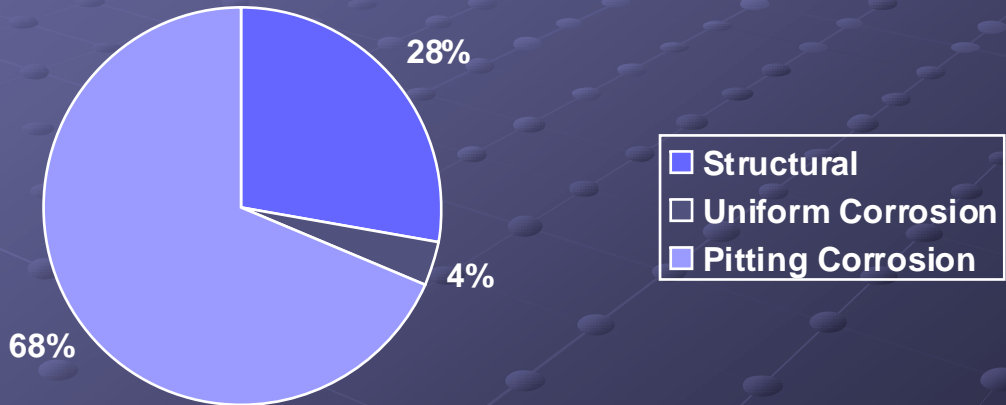








# Type of Condition for (83) Failed USTs



# Tank May Not Continue in Use:

- Tank is greater than 2% out of round.
- Tank has a flat spot which has a cross measurement greater than the radius of the tank endcap.





# Tank May Not Continue in Use:

- The tank has a dent which has a cross measurement greater than the radius of the tank endcap or which protrudes into the tank greater than one inch for every foot of tank radius.
- The tank has a split seam.

# Out-of-Round – One Axis at a Time

- When a tank deflects, if it shortens on one axis, it must lengthen on some opposing axis. One would compare any one axis to its normal to determine excess (1 – 1 ½ % or more) and thus unacceptability.

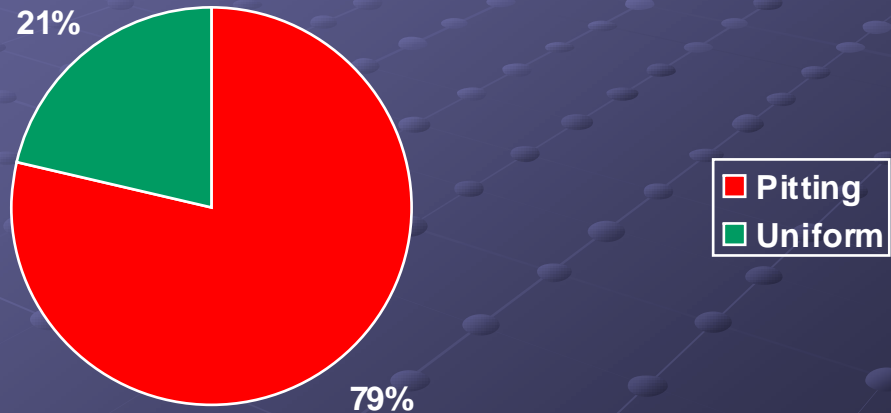
# Excavated UST Systems

- 298 USTs removed from the ground.
- 157 USTs were not visually inspected.
- 141 USTs were visually inspected.

# Visually Inspected

- 111 or 79% of the USTs showed evidence that pitting corrosion was the operative mechanism.
- 30 or 21% of the USTs showed evidence that uniform corrosion was the operative mechanism.

# Type of Corrosion Mechanism Present on Visually Inspected Excavated USTs

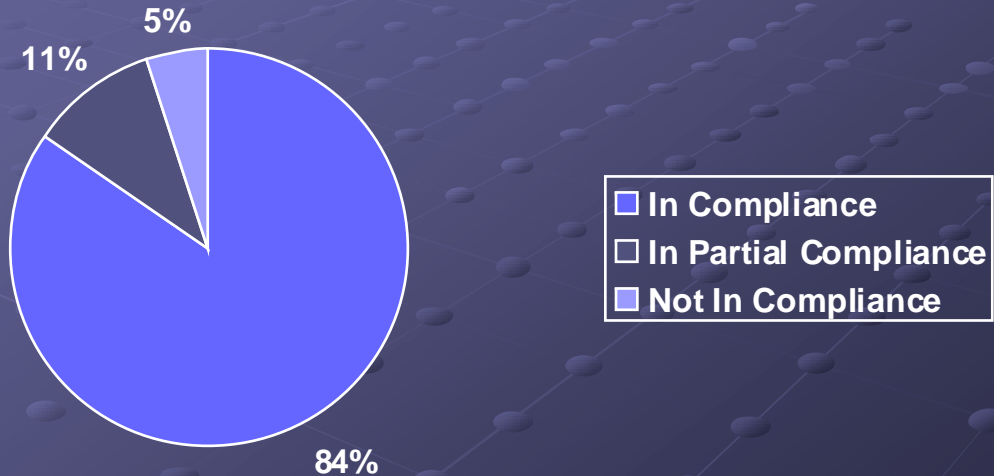


# Lining Problems

- Disbondment
- Flaking
- Bubbled



# Initiative Compliance Rate for Facilities



# Questions

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