South Carolina Underground Storage Tank Program

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Corrosion Protection Issues

Corrosion Protection Systems

- Galvanic System
  - Sacrificial Anodes
  - sti-P3
- Impressed Current System
  - Uses a rectifier to inject electrical current into the soil to halt corrosion on the tank system

South Carolina has conducted a study to test corrosion protected tanks.

- We were encountering systems that were not functioning
- We were concerned with the quality of tests that we found during inspections

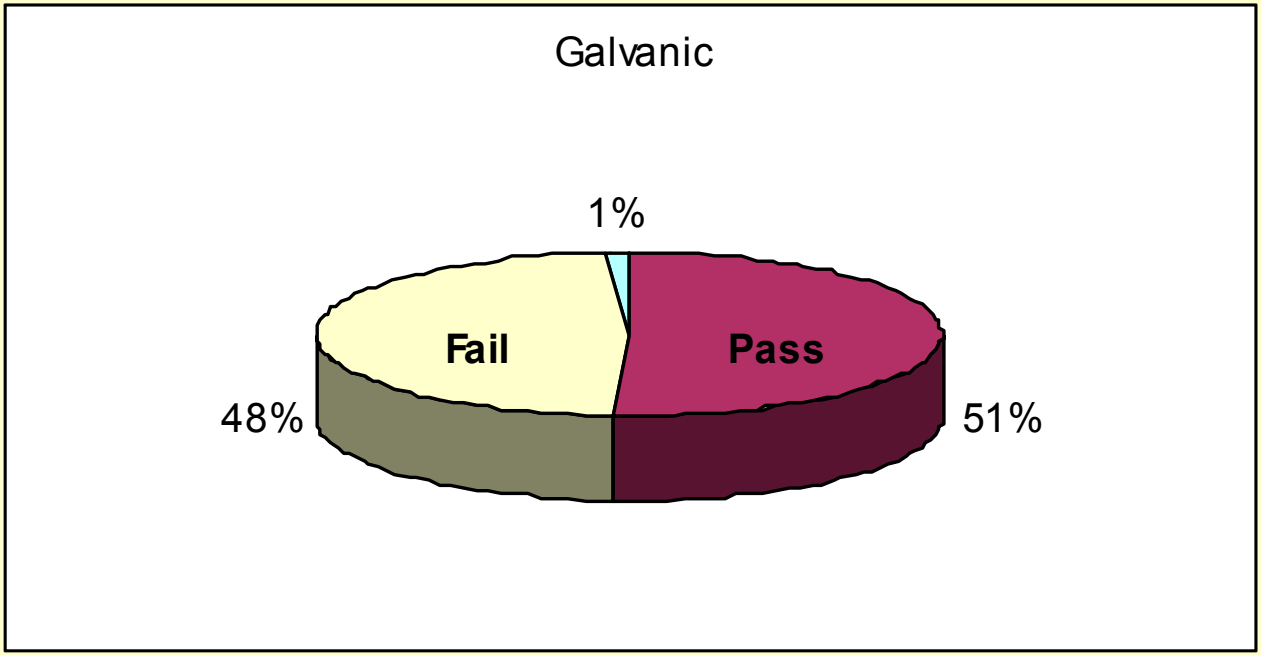
Corrosion Protection Study

- Utilize the testing system developed by EPA Region 4
- The test cannot be used in place of required testing by the owner
- We use the results to gauge the performance of each type system throughout the population
- 1231 sites tested – 736 impressed current
  495 galvanic

Galvanic Test

- Continuity testing required: 2mV or less
- Remote potential used for continuity
- Must be more negative than –850mV on local and remote reading to pass
- Must pass both NACE and STI testing criteria for tank to called “pass”

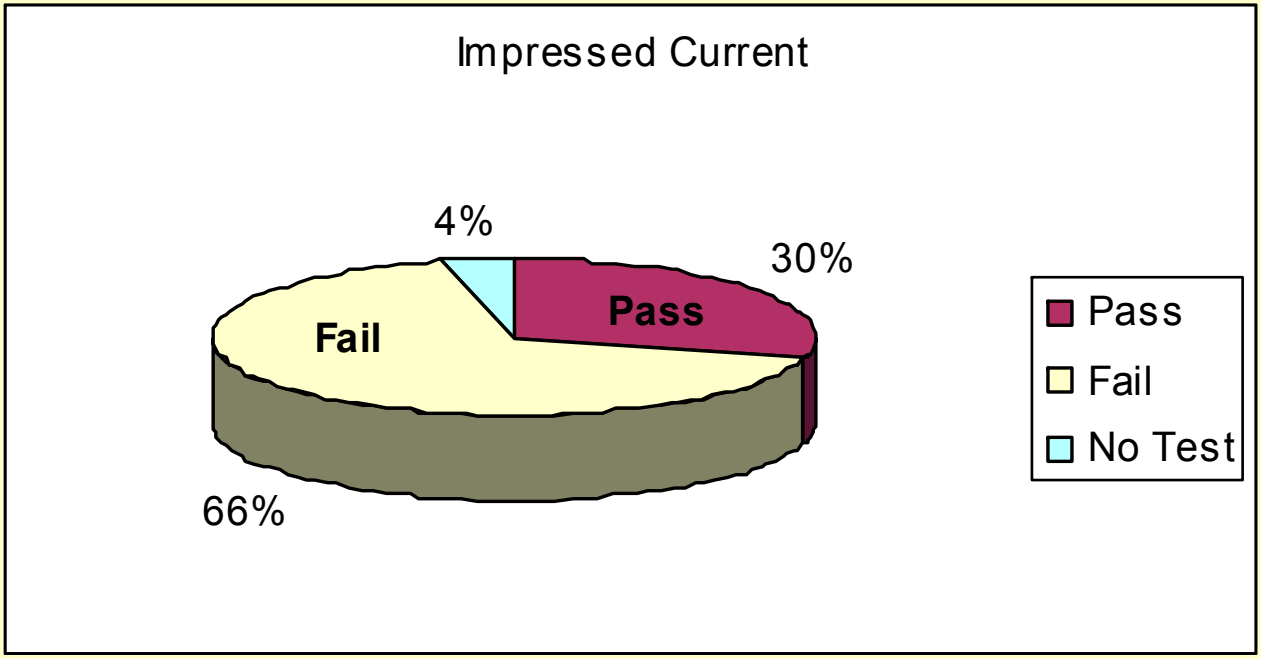
Galvanic System Results



Impressed Current Test

- Continuity testing required: 2mV or less
- Local and remote instant-off readings required
- All metal components must be continuous and all readings more negative than 850mV at instant-off to pass
- We do not perform the 100mV shift test

Impressed Current System Results



Results

- 66% of impressed current systems fail the test
- 48% of galvanic systems fail the test

Conclusion

- Corrosion protection systems do not seem to be performing as well as expected

Questions?