

west virginia department of environmental protection

Division of Water & Waste Management 601 57th Street SE Charleston, WV 25304 GctriTc{ "Vqo drkp, Governor """Tcpf { "J who cp, Cabinet Secretary www.dep.y xtl qx

POLICY Effective Date: November 1, 2001 Revised: November 1, 2005 I dXUhYX. 5 df] % ž&%

TEST REQUIREMENTS FOR GALVANIC SYSTEMS

- I. Purpose: To ensure that tests on galvanic systems are properly conducted according to the required protocols and that certified testing personnel are able to be held fully responsible for testing procedures.
- II. Policy: The following protocol shall be followed and documentation provided:A. Certification:

Test conducted by a West Virginia certified Class D or E tester.

B. Testing procedures:

• Take readings using a copper-copper sulfate reference cell in the following locations:

Both ends and the middle centerline of each tank and Both ends of each piping run and/or the location on the pipe farthest from the anode.

A Sti-P3® tank may have a monitoring wire (usually green in color) coming out of the ground with the test terminal mounted on the submersible pump riser, the automatic tank gauge riser, the fill pipe riser or located in a special cathodic protection test station. If no wire can be found you must make contact with the bottom of the tank through the fill pipe or access the tank shell through a manway at the bottom of a containment sump. Some drop tubes are equipped with tank bottom protectors that will prevent contact with the tank bottom. Good contact is indicated by a steady reading on the voltmeter. (Note: A Sti-P3® tank installed in 1993 or later may have a test station. The central terminal connects to a buried reference cell and the four terminals around the center connect to one or more tanks.)

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For Sti-P3® *tanks only:* An alternative testing method may be applied.

Readings using a copper-copper sulfate reference cell may be taken in the following locations:

Local - In the soil at the mid-point over the tank and

<u>Remote</u> - Place the reference cell at a location where there is no metallic structure between the tank and the electrode. In order to ensure that remote earth has been achieved, place the reference cell at least 25 feet away from the tank and observe the potential. Move the reference cell out away from the tank another 10 feet or so and observe the potential. If there is no significant difference in the two potentials, it can be assumed that remote earth is achieved. If there is a significant difference, continue moving the reference cell out away from the tank until no significant difference is observed.

Both readings are required.

- If a minimum voltage of -850 mV is not recorded verify that all metallic components of the tank system (i.e. riser pipes, vent lines, piping, tank to tank) are not electrically continuous.
- In excessively dry or frozen conditions pour a large amount of water into the tank backfill.
- Do not take readings in soil that is saturated with petroleum.
- No measurements are to be made through concrete or asphalt. Readings are invalid if test holes are not present.
- To pass, the -850 mV or more negative must be met at <u>all</u> reference cell locations along the length of the tank and piping.

For Sti-P3® tanks, <u>both</u> the local and remote readings must meet the -850 mV or more negative in order for the tank to pass. The test must be deemed inconclusive and additional testing performed if both the local and remote readings do not meet the -850 mV criteria or if only one reading can be obtained. W]åæe∿Ái⊕FÍ⊕FH page 3 of 3

C. Frequency of Testing

- Within 6 months of installation
- At least every 3 years after initial test
- Within 6 months following any repair to the system

D. Required Documentation

The test must be sufficiently documented so that any knowledgeable person can make the same measurements at the same places.

• Site sketch including:

All reference cell locations; Distances from the tank to remote readings (Provide sufficient distances from landmarks to allow replication of the remote testing point); All structure connections; and Tank and piping locations.

- All volt meter readings
- Conclusions (i.e. protected, not protected, inconclusive)