



## **PROCEDURE FOR CONDUCTING THE ALTERNATE TEMPERATURE LOG FOR EVALUATING EXTERNAL MECHANICAL INTEGRITY OF A CLASS I WASTE DISPOSAL WELL**

**Procedure #: UICI-9(b)**  
(2/19)

Narrative:

The purpose of this test is to evaluate the external mechanical integrity of the well. A well has external mechanical integrity if there is no fluid movement behind the casing through vertical channels adjacent to the wellbore. One method of checking external mechanical integrity is to conduct a temperature log following the procedures listed in this document.

A plan for this test shall be submitted to KDHE for review and approval prior to conducting the test. In order to provide KDHE opportunity to witness the test, the schedule for conducting the test shall be mutually agreed upon. Plan approval shall be obtained from KDHE before commencing the test. The plan shall include a schematic of the well configuration for the test, a prognosis and a schedule for conducting the test. The procedure listed is general in nature. When developing a test procedure for an individual well; the well configuration, geology, hydrology, and operating conditions must be considered. K.A.R. 28-46-33 establishes mechanical integrity requirements.

Procedure:

1. Clear the wellbore of any material that would be corrosive to the logging tools and ensure that there are no obstructions that will prevent the passage of the temperature tool.
2. The temperature log must be conducted through the injection tubing to obtain "real condition" data and to be protective of human health and the environment.
3. An appropriate scale for the temperature log must be selected. Frequent shifts in the log will be required if the scale selected is too small which makes the log difficult to interpret. If the scale is too large, the log is again difficult to interpret because temperature changes and gradients are difficult to discern. A scale range of 4°F/inch to 10°F/inch is generally the best.
4. The temperature log shall be conducted in tandem with a collar locator log and a gamma-ray log. A differential temperature curve shall be included.
5. The temperature tool shall be sensitive to temperature changes of at least 0.1°F.
6. The temperature log shall be run going into the well. The logging speed should be between 20-35 feet per minute. Stopping the tool during a log run should be avoided.

7. Record the beginning and ending clock times on the log pass.
8. Run the base log from surface to total depth after the 24-hour shut-in period.
9. Submit the temperature log to KDHE with the following information on each log:
  - a. time log was run
  - b. well conditions, shut-in
  - c. scales
  - d. logging speed
  - e. depth and size of various casings, depth and size of tubing, packer seat depth

A report shall accompany the log describing the procedure, and well construction data. The report shall also include an interpretation of the logs and a description of the temperature log results by a person with the technical expertise to evaluate the log.

10. If the well is determined to be lacking external mechanical integrity, injection shall cease immediately, and the permittee shall submit the following to KDHE for review and approval: 1) an evaluation of the impact to the environment which may require additional testing approved by KDHE, 2) an environmental remediation plan and implementation schedule, and 3) a repair plan and implementation schedule for the well. No work is to commence until plan and schedule approval has been obtained from KDHE.