

Conducting Part I Mechanical Integrity Tests (MITs) Without an EPA Representative Present – Unwitnessed MITs

It is the practice of Region 5 to witness MITs. On occasion, Region 5 will allow an owner/operator to perform an MIT unwitnessed by EPA, if it proves impossible to resolve EPA scheduling conflicts AND the owner/operator can produce either a mechanical, digital, or third-party record (this includes a test witnessed by a State UIC inspector). When EPA tells an owner/operator that they can conduct an unwitnessed MIT, the owner/operator should follow the procedures outlined below to facilitate EPA review of the test results.

1. Before proceeding, submit proposed test procedures to EPA, including the information that no EPA representative is available, and receive acknowledgement from the EPA.
2. Ensure the packer is set within 100 feet of the top of the injection zone. Packers not set within 100 feet of the top of the injection zone will be evaluated by EPA on a case-by-case basis. Note any approved deviations in well construction.
3. Document the test using a mechanical or digital device or a service company job record which records the value of the parameters of interest as measured during the test.
 - a. Submit along with the test results a gauge calibration certificate for the mechanical or digital device used to record test parameters. All calibration (for new or recalibrated gauges) must have been performed within a year of the test.
 - b. Place a gauge on the wellhead to measure pressure. The recording device serves to backup the data witnessed on the wellhead gauge.
 - c. Use an appropriately scaled gauge which has a measurement range that is 1.2 – 2 times the maximum pressure measured.
 - d. Measure and document pressure using a gauge and a chart record that can be read with sufficient accuracy to identify pressure change which would result in a failure of the test and to record accurate intervening values required per the test procedures. For example, if the test pressure is 300 psig, the gauge and chart record should be marked in increments of 5 psi or less.
4. Completely fill the tubing/casing annulus with liquid. No unapproved fluids or substance which may affect test outcomes are allowed. Measure and report the volume of fluid added to the annulus.
5. Stabilize the temperature of the well and the annulus liquid, either by ceasing injection or injecting at a constant fixed rate. Ensure that the injection/tubing pressure is at least 100 psi different from the annulus test pressure.
6. Annulus Test Pressures:
 - a. Class II and 5X16 wells – Pressurize the annulus to a surface pressure greater than 300 psig. A net gain or loss of more than 3% during the test indicates a failed test.
 - b. Class I wells - Pressurize the annulus to the greater of 300 psig or the maximum permitted injection pressure plus 100 psi. A positive pressure differential of greater than 100 psi should be maintained between the annulus and the injection tubing. If EPA does not approve any waivers from this criteria prior to testing, the test results might be considered as not demonstrating mechanical integrity and a new test will be needed. A net gain or loss of more than 3% during the test indicates a failed test.

- c. Following pressurization, isolate the annular system (no leak) from its pressure source and, if present, the sealpot or surge tank being sure to prevent any leaking across the shut-off valves.
7. Duration and Measurement Intervals:
 - a. Class II and 5X16 wells – Test for at least 30 minutes
 - b. Class I well – Test for at least 60 minutes
 - c. Note the time, the annulus pressure, and the injection/tubing pressure at the start of the test and measure and note these same parameters at least every 10 minutes thereafter up to the end of the required test duration.
8. After the test is complete, all Class II and 5X16 wells should have their annulus pressure bled back to atmospheric pressure and the volume of the expelled fluid should be measured, recorded, and reported.
9. Send a report of the testing including any other data or documents available at the conclusion of the test which support the test results, such as gauge calibration certification, third-party service ticket, and/or original chart recordings, to EPA within 10 days of the completion of the test unless the permit specifies a different due date.
10. If the tested well was reworked in association with the test, submit a rework record.
11. Include the certification statement and signature on the transmittal letter or on the individual MIT results form and, if submitted, the rework record to comply with the requirements of 40 CFR § 144.32(b). [<https://www.gpo.gov/fdsys/pkg/CFR-2012-title40-vol24/pdf/CFR-2012-title40-vol24-sec144-32.pdf>].