

Popular Initial Testing alternatives include Perforation, Fracture Fall-off, and Formation Leak-off technologies. Impulse and Closed Chamber theory combine to offer simple, economic options for satisfying AER (ERCB, AEUB) initial compliance regulations. There are several different scenarios, depending on your completion operation logistics. Because tests are analyzed for p^* the 2 kPa/h and > 14 day rules are waived.

Minimum 8 h of Data

With a minimum eight hours (8 h) of subsurface transient pressure data, *it doesn't matter whether-or-not the test meets the 2 kPa Rule*. If the data are analyzable the p^* will be compliant.

Perforation Build-up or Fall-off

Underbalanced conditions result in fluid inflow causing a closed chamber pressure build-up. Overbalanced wells react by feeding well kill fluids into the formation causing a pressure leak-off or fall-off. If possible, install subsurface pressure recorders before perforating, or attach gauges to a shock absorber on the drop-bar. Otherwise try to run gauges in the hole as soon as possible. Landing gauges below a plug will help mitigate wellbore storage issues in low permeability systems. Shut-in time will be dictated by permeability.

Critical Edit Mnemonics:

~TEST DATA,INTRP.,Y,Test Interpretation Present

~PRESSURE RESULTS - SUMMARY,PEXTR.KPAA,9558.00,Representative Extrap/ False Pressure

That innocuous 'Y' flags the business rules to ignore the 2 kPa Rule and search instead for the p^* (PEXTR).

Fracture Fall-off Tests

Mini-frac' or DFIT (doubles for initial test) is one method, as written up in another TechTips sheet. One more strategy is to complete the multi-stage frac', clean up the well some, install gauges below the pump and rods, and monitor the pressure for a few weeks, before pump start-up. Schedule a pump workover within 90 days to pull gauges. Analyze the build-up or fall-off for p^* .

These are only a few test permutations that achieve compliance.

Formation Leak-off Tests

Simple but effective, these tests are an economical strategy for Initial Pressure compliance. After landing a horizontal multi-stage frac' string, run recorders, open the toe hydro-port, and monitor the pressure leak-off or fall-off feed into the reservoir. Analyze for p^* .

D40 Misconceptions

What's not specifically clear in D40 is that Pressure Transient Analysis (PTA) is an acceptable method for estimating Initial Pressure Oil and Initial Pressure Gas conditions (p^*).