

MUDGE LS 16
920' FNL x 1650' FEL Section 10, T31N, R11W

STEP RATE TEST

PRIOR TO STEP RATE TEST stabilize the injection rate to a constant rate of 1/2 BPM for at least 72 hours prior to the actual step rate test.

Using a pressure bomb capable of measuring pressures for a period of at least 96 hours between range of 4000 psig and 8000 psig, run in the with pressure bombs and land in seat nipple. Note: Run the pressure bombs at least 24 hours prior to the step rate test and attempt to run the bombs without shutting down.

Perform the step rate test as follows:

<u>Step</u>	<u>Injection Rate (BPM)</u>	<u>Duration (MIN)</u>
1	1/4	30
2	1/2	30
3	3/4	30
4	1	30
5	1-1/4	30
6	1-1/2	30
7	1-3/4	30
8	2	30

NOTE:

1. Continuously monitor surface injection pressure and rate in a digital format with a computer van. If computer van is unavailable ask that the treating crew keep a detail log and use a strip chart pressure recorder.
2. Surface injection pressure limit is 3000 psig. (Based on wellhead pressure limit. Confirm the wellhead is rated to 3000 psig.)
3. The 30 minute time step intervals are critical. Inconsistency such as shorter or longer time intervals are unacceptable.
4. Once an injection rate is established at or near the requested rate every effort must be made to keep the rate constant.
5. Make sure that the pumping equipment can handle the low rate steps. Several companies have had a problem with accommodating step rates less than 1-1/2 BPM.
6. Use produced Fruitland Coal water.