



SWD Test Procedure

Well: Gunderson 13-13

Dan Fouts

August 30, 2018

WELL INFORMATION:

Well: Gunderson 13-13
API #: 05-077-09011-00
Pad: Gunderson 13-11
County, State: Mesa, Colorado
Surface Hole: 1636 FSL & 1720 FWL NESW S13 T096S R94W
Surface Coordinates: 39.274028, -107.834779
Bottom Hole: 663 FSL & 675 FWL S13 T09S R94W

Elevation: RKB: 7286
KB: 20
GL: 7266

PBTD: 8246 MD / 8044 TVD
TD: 8300 MD / 8098 TVD

Casing: Conductor: 16" @ 60
Surface: 8-5/8" 32# J55 8rd STC @ 1231 (TOC @ surface)
Production: 4-1/2" 11.6# I80 8rd LTC @ 8292 (TOC @ 1020 / Top Good Bond @ 1350)

Perforations: Completion @ 6034-8149

Tubing: None

Geology: Ohio Creek 4412
Williams Fork 4752
Cameo 7074
Rollins 7470
Cozette 7899
Corcoran 8084

CONTACTS:

Health & Safety Coordinator	Laura Lancaster	970 644 1259
Production Coordinator	TJ Cordova	970 250 9519
Production Coordinator	Rory Mortensen	970 778 5161
Wellsite Consultant	Dan Hacking	970 778 1063
Wellsite Consultant	Troy Roehm	970 852 1806
Production Engineer	Dan Fouts	970 852 1170
Completions Manager	John Grubich	970 589 9496
Production Manager	Milt Johnson	970 230 1011
Senior Regulatory Manager	Wayne Bankert	970 985 5383
Operations Manager	Chris Clark	970 462 8375

DIRECTIONS: Contact TJ Cordova or Rory Mortensen.

PROCEDURE:

Prep Well for Wireline Work:

1. Hold pre-job safety meeting with all personnel involved in this operation.
2. Blow well dead.
3. ND tubing head.
4. NU 7-1/16" 5m gate valve.
5. Shut well in.
6. Allow well to sit idle until casing pressure builds to at least 500 psi and preferably closer to 800 psi.
7. Shoot fluid level. Note: fluid level needs to be at 5000' or deeper to proceed.

Abandon Williams Fork, Cameo, and Corcoran Perforations:

8. Hold pre-job safety meeting with all personnel involved in this operation.
9. Do not bleed down well; maintain pressure while setting CIBP and dump bailing cement.
10. MIRU DLD wireline.
11. NU and test wireline BOPE.
12. Run gauge ring to 6020'.
13. Set 4-1/2" 10K CIBP @ 6000'.
14. Dump bail 50 linear feet (4 sacks in 2 runs) neat Class G cement on CIBP.
15. Bleed off casing pressure.
16. Shut well in and observe for 48 hours to ensure casing pressure is not building.
17. Shoot fluid level. Note: fluid level needs to be at 5000' or deeper to proceed.

Perforate Ohio Creek and Prepare for Injection Test:

18. Hold pre-job safety meeting with all personnel involved in this operation.
19. MIRU wireline perforators TBD.
20. Run gauge ring to fluid level.
21. Set 4-1/2" 10K CIBP 50' above fluid level.
22. Correlate to PureEnergy CBL dated 6/20/06. Note: CBL is 4 feet deep.
23. Selectively perforate from 4412'-4752 with 3-1/8" HSC guns loaded 3 spf 120 deg with Owen 19g HERO SGH-3119-330 charges. Note: perforation intervals TBD.

Collect Injection Zone Water Samples for Analysis:

24. Hold pre-job safety meeting with all personnel involved in this operation.
25. Collect (3) x 1 quart samples of formation water using wireline bailer.
26. RDMO wireline.
27. Send water samples to lab for analysis.

Pump Step Rate Test:

28. Hold pre-job safety meeting with all personnel involved in this operation.
29. Use completion tanks (or MI portable tanks) to store 4500 bbls of lease water.
30. Plumb tanks in (2) parallel trains with a central take-point.
31. Fill portable tanks with lease water.
32. Install dual company owned memory pressure gauges on casing set to collect data at 2 second intervals.
33. MIRU 500 hp triplex pump, charge pump, 2 parallel sets of 2 water filter housings, and flow meter.
34. Install 25 micron filters in first set of filter housings and 5 micron filters in second set of filter housings.
35. Pump Step Rate Test as follows:

Step Number	Notes	Step Time Duration (minutes)	Step Time Duration (hours)	Time Cumulative (minutes)	Time Cumulative (hours)	Pump Rate (GPM)	Pump Rate (BPM)	Step Volume (BBLs)	Volume Cumulative (BBLs)
1	Zero Rate	60	1	60	1	0	0.00	0	0
2	Min Rate	60	1	120	2	21	0.50	30	30
3		60	1	180	3	31.5	0.75	45	75
4		60	1	240	4	42	1.00	60	135
5		60	1	300	5	56	1.33	80	215
6		60	1	360	6	70	1.67	100	315
7		60	1	420	7	84	2.00	120	435
8		60	1	480	8	105	2.50	150	585
9		60	1	540	9	126	3.00	180	765
10		60	1	600	10	168	4.00	240	1005
11		60	1	660	11	210	5.00	300	1305
12		60	1	720	12	252	6.00	360	1665
13		60	1	780	13	294	7.00	420	2085
14		60	1	840	14	336	8.00	480	2565
15		60	1	900	15	378	9.00	540	3105
16	Max Rate	60	1	960	16	420	10.00	600	3705
17	Fall Off	4320	72	5280	88		0.00	0	3705
TOTAL		5100	88	5280	88				3705

36. After pumping, shut in well upstream of casing pressure gauges.
37. Continue collecting data until surface gauge reads 0 psi for 24 hours.
38. Shut in and secure well.