

WELL NAME: HSR-Farrar 16-19A  
OPERATOR: Kerr-McGee Rocky Mtn Corp.  
OFFICE NUMBER: 970-330-0614  
LOCATION: SE/SE 19-3N-66W  
Weld County, CO

SPUD:  
Deepen TD: 6/15/01 @ 7959'  
REPERF: Cdl. 98.0310  
REFRAC: Cdl. 98.0311  
Perf: J Sand 6/20/01 Frac: J Sand 6/21/01  
DOWNLINE: JNBCD 7/02/01

FAX daily to:

IF PROBLEMS WITH FAX TRANSMITTAL CONTACT - 1-303-296-3600

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- 03/09/98 **MIRU S&S Rig #2.** Blow down well to mud tank. Pump 20 bbls 2% KCL water to control well. ND well head. NU BOP. PU 4 jts tbg and tag sand fill at 7440' (64' below bottom of Codell perf). TOOH. PU RBP and TIH. Hydrotest tbg to 5000 psi while TIH. Found 1 bad joint. Set RBP at 6882'. ND BOP. NU well head. Test casing to 5500 psi where it held OK for 15 minutes. ND well head. NU BOP. LD tbg. ND BOP. Install BJ 4 1/2" frac valve. **Rig down and release rig.**
- 03/10/98 Brandex reperforated the Codell formation from 7360' to 7372' with 4 spf (44 holes). .38" EHD. The well was shut in awaiting refrac.
- 03/11/98 BJ refrac'd the Codell down 4 1/2" casing. A breakdown pressure of 2810 psi was observed during the pad. The well was treated with Terra Frac gel. Average treating rate was 13 bpm, average treating pressure was 3300 psi, ISIP was 3650, Well was force closed on a 14/64ths choke at thirty minutes the pressure was 3215 psi. The well continued to flow back on a 18/64 choke. Totals included 10,060# 100 mesh, 261,860# 20/40 Jordan sand, 162,036 gals Terra Frac gel. Total load to recover was 3339 Bbls.
- 03/12/98 **MIRU S&S Rig #2.** ND frac valve. NU well head and BOP. PU 2 3/8" notched collar, seating nipple and 195 joints of tbg SI. SDFN.
- 03/13/98 Finish PU tbg to tag sand fill at 7320'. Clean sand to 7455' KB. Land with 223 joints at 7320' KB. ND BOP. NU well head. SI. **Rig down and release rig.** **MIRU** Action swab rig. ITP vac; ICP vac; FTP 175; FCP vac; IFL surf; FFL flowing; the well was swabbed for 3 hours recovering 50 bw. The well was left flowing to the flowback tank overnight. SDFN.
- 03/14/98 Turned down line at 3:30 pm following a Codell refrac. PSI was 450/850 and it is producing from the Codell/Niobrara formations.



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21:00 21:30 Circulate bottoms up.

21:30 23:30 TOOH and LD bit #1.

23:30 01:30 PU BHA #2 as; 1-3 7/8" DPI MP3AM and BHA and TIH.

01:30 02:00 Establish circulation

02:00 06:00 Drill new hole down to 7735'

Start the rig and drilling equipment. PU BHA #1 as; 1-3 7/8" HTC OHR #703030, bit sub, 6-3 1/8" collars, cross-over, 10 jts 2 3/8" PH-6, cross-over. RU HS Testing and test the 2 3/8" tubing in the hole to 6000 psi all tubing tested good. RD the test truck. Establish circulation and tag @ 7368'.

Wash down to the float collar at 7454'. Drill the float collar the cement in the shoe jt and the shoe at 7487'. Drill new hole down to 7510'. Circulate bottoms up. TOOH and LD bit #1. PU BHA #2 as; 1-3 7/8" DPI MP3AM and BHA. TIH and establish circulation and drill new hole down to 7735'.

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6/14/01 DEPTH @ REPORT TIME: 7947 Feet MD  
YESTERDAY'S DEPTH: 7735 Feet MD  
PROGRESS: 212 Hours Drilled: 23 FT/HR: 9.217391304  
BIT RECORD: SIZE: 3 7/8" BRAND: DPI TYPE: MP3AM  
Serial No.: JETS: 5 x 10  
Depth In: 7510 Depth Out: CUM FOOTAGE: 437 Cum Hours: 27  
DRILLING PARAMETERS: Wt on Bit: 2-6,000 RPM: 102  
Pump GPM: 120 Pressure: 1200  
String WT UP: 44,000 String WT Down:  
ACTIVITY @ REPORT TIME: Drilling  
TIME ACTIVITY  
FROM TO  
06:00 12:00 Drill down to 7824'  
12:00 18:00 Drill down to 7868'  
18:00 00:00 Drill down to 7912'  
00:00 06:00 Drill down to 7947'  
Drill new hole from 7735' down to 7947 3' from TD.

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6/15/01 DEPTH @ REPORT TIME: 7951 Feet MD  
YESTERDAY'S DEPTH: 7947 Feet MD  
PROGRESS: 4 Hours Drilled: 3/4 hour  
BIT RECORD: SIZE: 3 7/8" BRAND: DPI TYPE: MP3AM  
Serial No.: JETS: 5 x 10  
Depth In: 7510 Depth Out: 7951 CUM FOOTAGE: 441 Cum Hours: 27 3/4  
DRILLING PARAMETERS: Wt on Bit: 3-6,000 RPM: 103  
Pump GPM: 120 Pressure: 1200  
String WT UP: 45,000 String WT Down:  
ACTIVITY @ REPORT TIME: RDMO

TIME	ACTIVITY
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FROM	TO	ACTIVITY
06:00	06:45	Drill down to TD=7951'
06:45	07:45	Mix mud and circulate
07:45	08:15	Short trip up into the casing with no fill.
08:15	09:45	Mix mud and circulate
09:45	12:00	TOOH and LD BHA.
12:00	14:45	RU Schlumberger. Run a complete set of open hole logs, RD wireline.
14:45	15:25	PU the Weatherford 2 7/8" liner.
15:25	17:10	TIH with the 2 3/8" tubing.
17:10	18:30	Tag high establish circulation and get to TD
18:30	19:15	Space out the liner.
19:15	20:15	RU BJ and cement the liner. RD BJ.
20:15	21:30	Set and shear the hanger and roll the hole clean.
21:30	22:00	LD 8 jts leave 224 jts in the hole.
22:00	23:00	ND the BOP's and NU the wellhead.
23:00	06:00	RDMO.

Drill down to TD=7951'. Mix 20 sks gel, 2 sks soda ash, 5 gal 123-L and circulate. Short trip up into the casing with no fill. Mix 20 sks gel and circulate. TOOH and LD the BHA. RU Schlumberger and run a complete set of open hole logs, loggers TD=7959'. RD wireline. PU the Weatherford 2 7/8" liner as; 1-2 7/8" guide shoe, 1-jts 2 7/8" 6.5# N-80 tubing, Latch in collar, 7 jts 2 7/8" 6.5# N-80 tubing, 1-2 7/8" x 8' 6.5# N-80 tubing sub, 7 jts 2 7/8" 6.5# N-80 tubing, 1-4 1/2" x 2 3/8" SLP with an on-off tool. TIH with the 2 3/8" tubing and tag high. Establish circulation, wash down to TD. Space out the liner. Mix 4 sks mica and circulate at 1 1/2 bbls per min @ 600 psi. RU BJ and pump 10 bbls KCL, 10 bbls Mud Clean II, 35 sks G cement with .2%R-3, .45% R-8, .2% CD-32, 1% FL-25, 35% S-8. Drop the plug and displace with 32.1 bbls water. Bump the

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plug with 3600psi. Hold for 2 min and release with flow back. Re-pressure to 3000 psi and hold for 2 min. Release the pressure and have no-flow back. Set and shear the hanger and release the on-off tool and circulate out 4 bbls cement. Roll the hole with clean 2% KCL water. LD 8 jts 2 3/8" tubing leave 224 jts in the hole. ND the BOP's and NU the wellhead. SWI RDMO. SHOE @ 7951', LATCH IN COLLAR @ 7920', TOP OF THE LINER @ 7425'.

6/18/01 MIRU HS Services service unit. Tubing pressure 0#, casing pressure 0#. NDWH, NU BOP'S, TOOH with 224 jts. 2 3/8 4.7# J-55 production tubing laying down. RU ASAP to run cement bond log. Could not get to TD with logging tools. Tag @ 7660, RD ASAP. Trip in hole with 2 1/4" bit, bit sub, 17 jts. 1 1/4" IJ NU and 35 jts, 2 7/8 N-80 frac string. SDFN

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6/19/01 Tubing pressure 0#, casing pressure 0#. TIH with 207 jts. 2 7/8 N-80 frac string. Tag cement with 244 jts. @ 7684' KB. Drill out to TD. Insert collar @ 7920, circulate hole clean. TOOH 18 jts. to 7360'. SDFN

6/20/01 Tubing and casing pressure 0#. RU ASAP, run CBL from TD @ 7918 to LT. TIH seal nipple, XO, 236 jts. 2 7/8 N-80 frac string hydrotesting to 8500 PSI, sting into LT @ 7425 KB. Pressure test liner to 5500 PSI, held 15 min. OK. ND BOP'S, NU Halliburton frac valve. RU ASAP perforate J-Sand from 7794-7804 and 7816-7852, 2 SPF, 120 deg. phasing, 3.5 gram Owen raptor charges, .21 diam., 92 shots all fired. RD ASAP. RU Halliburton for injection rate, break down @ 3600 PSI, pump 30 bbls. average pressure @ 2650 @ 5 BPM, ISIP 1100 PSI, 5 min. 260 PSI, 10 min. 0 PSI. RD Halliburton, RDMO

6/21/01 Formation : J- Sand  
Frac Date: 6/21/01  
Frac Company: Halliburton  
Method: 2-7/8" tbg into 2-7/8" liner  
Fluid: Frac Gel  
Water Source: Well Wtr-2%  
Gel Loading: 20,17  
Avg Vis (Hi>Lo): 14.4,13.2  
Pad Volume (gals): 40,006  
Sand Laden Volume (gals): 210,579  
Total Treating Volume (gals): 250,585  
Flush Volume (gals): 1,853  
Total Load to Recover (Bbls): 6,010  
Sand Size: 20/40  
Sand Volume: 501,520  
Max Sand Concentration: 4  
Formation Break Pressure: 2358  
Formation Break Rate: 5  
PreFrac ISIP: 1,319  
Average Treating Pressure: 5,470  
Average Treating Rate: 24.3  
Max Treating Pressure: 6,103  
PostFrac ISIP: 2,460

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Special Test: No

Comments: Slightly climbing NPS throughout frac. Dropped gel loading from 20 to 17 at start of 4 ppg. Cut crosslinker 12,285 gals prior to flush. Did not force close, begin flowback on an 18/64" choke.

Forced Close Choke: Did not force close

Initial Recovery (Bbls): 38,388

Flowing Pressure: 100

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6/22/01 Turned well on at 12:15 PM with 2000# PSI on 18/64 choke, watched until 5:00 AM, 100# PSI made 914 bbls.  
1st hr. 2000# PSI made 132 bbls.  
2nd hr. 1100# PSI made 121 bbls.  
3rd hr. 700# PSI made 101 bbls.

6/23/01 Flowback continued on an 18/64" choke recovering 121 Bbls in 24 hours with ending pressure of 0 psi.

6/24/01 Flowback continued on an 18/64" choke recovering 37 Bbls in 24 hours with ending pressure of 0 psi.

6/25/01 Flowback continued on an 18/64" choke recovering 12 Bbls in 24 hours with ending pressure of 0 psi.

6/26/01 Flowback continued on an 18/64" choke recovering 0 Bbls in 24 hours with ending pressure of 0 psi.

6/26/01 MIRU, tubing and casing pressure 0#. ND WH, NU BOP'S, TOO H laying down 236 jts. 2 7/8 N-80 frac string and seal nipple. TIH with 1 1/4 heavy duty seating nipple notched, 16 jts. 1 1/4" tubing = 546', XO, 2 3/8 SN and 226 jts. 2 3/8 4.7# J-55 tubing = 7338' hydrotesting to 6500 PSI. Tag @ 7857' KB. Lay down 3 jts. SDFN

6/27/01 Shut in

6/27/01 Tubing and casing pressure 0#. TIH 3 jts., tag @ 7857' KB. Pump 300 bbls. 2% KCL and could not break circulation. Land tbg. @ 7763' KB with 1 1/4" heavy duty seating nipple notched, 16 jts. 1 1/4" tubing = 512', X-Over, 2 3/8 SN, 221 jts. 2 3/8 4.7# J-55 tubing = 7241'. ND BOP'S, NU WH, RDMO

6/28/01 Shut in 0/0 psi.

6/28/01 MIRU Key Swab Unit #209. No PSI on well, IFL 800', FFL 800'. Swab back 32 bbls., shut well in, SDFN

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6/29/01 Shut in 680/800 psi.

6/29/01 Check pressures tubing 70#, casing 70#. Blow down tubing, IFL 1200', FFL 2000' gas cut. Swab back 125 bbls., end PSI tubing 20#, casing 450#. Shut well in, SDFN

6/30/01 Shut in 0 psi.

6/30/01 Check pressures tubing 540#, casing 1000#. Blow down tubing, IFL 1200' scattered, FFL 3800' gas cut. Flow test 1 hr., total bbls. 63. Leave tubing open to tank on 18/64 choke. End PSI tubing 350#, casing 800#. RDMO

7/1/01 Shut in 550/800 psi.

7/2/01 Shut in 700/900 psi.

**7/02/01 The Farrar 16-19 was returned to production on 7-02-2001 at 8:45am, pressures were 850/950. Well is producing from the Codell, Niobrara, J-sand formation after a J-sand deepening. Well is located in Area 1, Route 146, CDP 11, S.N. 745327, HS Gathering Line 0720-04.**

7/03/01 MIRU HS Services swab unit #8. Check pressures blow/1000#. IFL 3000', FFL 3000' gas cut. Flow test 1 hr., total bbls. back 40, end PSI 220# tubing, 750# casing. Leave well open to tank on 18/64 choke, RDMO

10/24/02 MIRU Cable Wireline Service. RIH and fished plunger and bumperspring from 7230. RIH with toolstring and tagged at 7751, 1 1/4 seating nipple landed at 7763. Dropped ballcheck and pressured up to 1000# with B&J Hot Oil Service. Tubing bled off 100# in 5 min. RIH and fished ballcheck. Returned well to production. RDMOL

12/23/02 MI and spot S & S Rig #1. Drain-up and SDFN.

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12/26/02 Finish MIRU S & S Rig #1, control well w/2% KCL, ND wellhead assembly, NU BOPE, and tag fill/bottom @ 7,857' KB. TOO H and tally w/221 jnts (7,235.76') 2 3/8" tubing, 2 3/8" SN & XO (1.67'), 16 jnts (513.30') 1 1/4" tubing w/1 1/4" Notched collar (.97'). RU H-S Testers, PU Precision 1 1/4" bailer, and TIH w/17 jnts 1 1/4" and 2 3/8" tubing to fill/bottom @ 7,857' KB – lost 1 jnts 1 1/4" w/hole jnts. Will finish hydro-test in hole in the AM and bail. Drain-up and SDFN.

12/27/02 Finish hydro-test in hole w/production tubing and bailer – tag fill @ 7,857' KB and bail to 7,949' KB (bailed 92' – hard bottom). RD H-S Testers (note: lost one jnt of 1 1/4" tubing and found 2 collar leaks in 2 3/8") and TOO H w/tubing and bailer. Lay down 5 jnts 1 1/4" tubing and TIH w/12 jnts (open-ended – 383.05') 1 1/4" tubing, 2 3/8" SN and XO (1.67'), and 226 jnts (7,393.78') 2 3/8" production tubing - EOT @ 7,789' KB. Land Tubing, ND BOPE, NU wellhead assembly, and will broach tubing to SN @ 7,405' KB and swab-in on Monday AM. Drain-up and SDFN.

12/30/02 Well had 500 psig over 550 psig, this AM – will broach at another time. RDMO S & S Rig #1. Drain-up and SDFN.

4/04/03 MIRU Cable wire line service. RIH with fishing tool and fished Bumper spring at 7406ft. RIH with tool string and tagged at 7933ft. Dropped standing valve and pressure tested with B&J hot oil service. Tested to a 1000lbs. **Well held pressure.** RIH and fished standing valve at 7406ft RDMO Est. Turned well back to production.

5/02/03 MIRU S & S Well Service #1. Pump 10 bbls 2% KCL water w/ biocide down annulus and 7 bbls 2% KCL water w/ biocide down tbg to control well. ND tbg head and lay down one jt. Tbg now landed at 7,758' w/ 225 jts of 2-3/8" tbg and 12 jts of 1-1/4" tbg in hole. NU tbg head and RD service unit.

4/16/04 MIRU Cable Wireline service RIH and fished plunger at 7381ft. RIH and fished bumperspring at 7382ft. RIH and tagged at 7929ft. Perforations are at 7794-7804ft and 7816-7852ft. Dropped ballcheck and MIRU B&J Hot Oil service pressured up well to 1000psi Well did hold pressure. RIH and fished ballcheck at 7382ft.