



BJ Services Company — Treatment Report

Date 2-16-98 District Brighton F. Receipt 051187 Operator HS Resources
 Lease HSR Brown Well No. 33-24 Field Wattenberg Location Sec 24-T3N-R66W
 County Weld State Colo Stage Number 1 This Zone ☒ This Well ☒

WELL DATA OG ☐ NG ☐ NO ☐ OO ☐ WD ☐ IW ☐ Misc. ☐ Depth TD/PB 7303 Formation Codell
 Tubing Size 2 7/8 WT. 6.5 Set at: 6805 Type Packer Baker-Luks Set At 6805
 Casing Size 4 1/2 WT. 11.6 Set From Surface To 7303 Liner Size Wt.
 Liner Set From To Open Hole: Size From To Casing Perforations: Size .38
 Holes Per Foot 4 Intervals 7212-7222 40 Holes
 Previous Treatment Prior Production

TREATMENT DATA Pad Used: Yes ☐ No ☐ Pad Type Terra Frac HT 38"
 Treating Fluid Type: Foam ☐ Water ☐ Acid ☐ Oil ☐ Treat. Fluid Vol. 123,774 Gal.
 Base Fluid Type 2% KCL H₂O Base Fluid Vol. 163,674 Gal.
 Foam Qual.: % Mitchell ☐ Slurry ☐ Surface ☐ Downhole ☐ Total Prop Qty. 276,140 Lbs.
 Prop Type: Sand ☐ WP-1 ☐ WP-3 ☐ Baux. ☐ Other 15,000 lbs 100 mesh
 Prop Mesh Sizes, Types and Quantities 26,000 lbs 20/40 mesh
 Hole Loaded With 2% KCL H₂O Treat Via: Tubing ☐ Casing ☐ Anul. ☐ Tubing & Anul. ☐
 Ball Sealers: In Stages of
 Types and Number of Pumps Used 2 TM 1300 1 BL 1250
 Auxiliary Materials 10 PPG GS-1A, .5 GPT NE-940, 1.0 GPT Flo back 30, 1.2-20 PPT GBL-17, 10 PPT GBL-5
100 test 3000 gal, 5.0 PPT GBL-5 (1" 1000 gal Flo-back)
PROCEDURE SUMMARY 12000 PPT Pad, 337 bbl Inj test, 49 bbl Pad, 238 bbl 5 PPG 100 mesh, 258 bbl 10 PPG 100 mesh,
357 bbl spacer, 238 bbl 10 PPG 20/40, 357 bbl 20 PPG 20/40, 929 bbl 3.0 PPG 20/40, 619 bbl
10 PPG 20/40, 117 bbl Flush.

LIQUID/GAS PUMPED AND CAPACITIES IN BBLs.

Tubing Cap. 39.40
 Casing Cap. 6.31
 Annular Cap. 51
 Open Hole Cap.
 Fluid to Load 30
 Pad Volume 293
 Treating Fluid 2947
 Flush 47
 Overflush 1.29
 Fluid to Recover 3240
 Total N₂
 Total CO₂

Time AM/PM	Treating Pressure-Psi		Surface Slurry BBLs. Pumped		Slurry Rate BPM	Surface CO ₂ BBLs. Pumped		CO ₂ Rate BPM	Surface Pumped		N ₂ Rate SCFM	Comments
	STP	Annulus	Stage	Total		Stage	Total		Stage	Total		
8:57	550	520	-	49	0-3.7				-	49		Safety MTC & Test Lines
9:10	1410	500	49	-	5-0				49	-		Pre Pad - Load Hole
9:27	110	800	-	238	0-12				238	-		Shut Down
9:48	2260	500	238	238	11.4-0				238	238		Start Inj test
10:27	1120	1480	55	-	0-13.1				55	-		Shut Down
10:33	3830	830	239	55	13.0				231	55		Start Pad
10:53	4090	470	260	284	11.7				249	286		Start 5 PPG 100 Mesh
11:16	4130	510	340	554	11.6				249	286		Start 1.0 PPG 100 Mesh
11:43	4210	460	260	894	11.7				335	535		Start spacer
12:08	4020	450	384	1157	11.7				247	870		Start 1.0 PPG 20/40
12:41	4100	510	1149	1540	11.6				349	1117		Start 2.0 PPG 20/40
14:11	4680	570	680	2229	11.7				917	1466		Start 3.0 PPG 20/40
15:09	4370	490	47	3269	11.8				571	2033		Start 4.0 PPG 20/40
15:13	3930	470	-	3816	11.8-0					2054		Start Flush
										3000		Shut Down

Treating Pressure: Min. 550 Max. 4680 Avg. 4270 Customer Representative MR Bob Seegenbaugh
 Rate on Treating Fluid 0-13.1 Rate on Flush 11.8 BJ Representative Marvin Romke
 Avg. Inj. Rate 11.7 I.S.D.P. 3930 Flush Dens. lb./gal. 8.43 Distribution
 Final Shut-in Pressure 2130 in 30 Minutes
 Operator's Maximum Pressure 8,000

Job Number

Recommendation ID # DV000478