

Entek Grb LLC
Battle Mountain Federal 14-10L Stage: 1
Frontier
Delta 200

DATE: 8/21/2011
SO#: 8410585
Mid Perf (ft): 7,333

Stage	Fluid Type	Proppant Type	Clean Volume (gal)	Prop Conc (ppg)	Prop Total (lbs)	Slurry Vol (bbls)	Clean Rate (bpm)	Slurry Rate (bpm)	Max Press (psi)	Min Press (psi)	Gelling Agent	X-Linker	X-Linker	Buffer	Buffer	Buffer	Clay Cont / Surfactant	Surfactant/ Foamer	Surfactant/ Foamer	Breaker/ Activator	Breaker/ Activator	Breaker/ Activator	Breaker/Activ itator	Conductivity Endurance	Conductivity Endurance	Other	Other			
1	Treated Water		1,916			45.6	5.2	5.2	2158	425																				
2	15 % HCL Acid		931			22.2	9.2	9.2	2143	1799																				
3	26 vis Delta 200		8,906			212.0	23.7	23.7	2881	2000	6.00	2.20	1.00	0.90				0.50	2.00								0.30			
4	26 vis Delta 200	100 Mesh	5,003	0.50	2,502	121.8	29.0	29.7	2886	2790	6.00	2.20	1.20	0.90				0.50	2.00			3.00	2.00				0.30			
5	26 vis Delta 200	20/40 Ottawa	4,518	1.00	4,518	112.5	28.3	29.6	2850	2799	6.00	2.20	1.20	0.90				0.50	2.00			3.00	2.50				0.30			
6	26 vis Delta 200	20/40 Ottawa	5,520		11,040	143.4	27.0	29.5	2806	2745	6.00	2.20	1.20	0.90				0.50	2.00			3.50	3.00				0.30			
7	26 vis Delta 200	20/40 Ottawa	5,518		16,554	149.3	26.0	29.5	2766	2584	6.00	2.20	1.20	0.90				0.50	2.00			4.00	3.00				0.30			
8	26 vis Delta 200	20/40 Ottawa	6,721		26,884	189.1	25.0	29.5	2600	2433	6.00	2.20	1.20	0.90				0.50	2.00			4.00	3.00				0.30			
9	Hydro @ Flush	Flush	12042			286.7	28.7	28.7	3100	2610								0.50	2.00											
Prop Total:					61,498	lbs	Calc Amt (gal-lb):					217.12	79.61	41.64	32.57	Actual Amt (gal-lb):					221.0	79.0	42.4	33.0	Variance (%):					1.8%

Gel System: 36,186 (gal)
% Pad: 42.9% (including breakdown)
Total Fluid: 51,075 (gal) 1,216 (bbls)
Total Slurry: 53,866 (gal) 1,283 (bbls)
Prop Laden Fluid: 30,071 (gal) 716 (bbls)
Total Fluid to Recover: 1483,649 (bbls) includes csg

Casing Vol: 12,755 (gal) 304 (bbls)

18 bbls to fill the well. Extended pad 4000 gal waiting on xlink. BE-7 LA bounced throughout the job due to vaporizing. Job was pumped to completion all prop was placed. Sand bin was stuck open in final sand stage pumped and extra 9000 lbs of 20/40.

BREAKDOWN / ISIP DATA
Int. WHP: 425 psi
Break: 2154 psi @ 9.3 bpm
Break down Vol: 1517 gal 36.1 bbl
Base Fluid: 8.34 ppg

TREATMENT SUMMARY
Max Rate: 29.7 bpm
Min Rate: 5.2 bpm
Avg Rate: 25.8 bpm
Max Pressure: 3100 psi
Min Pressure: 425 psi
Avg Pressure: 2577 psi

ISDP: 2615 psi
Frac Gradient: 0.790 psi/ft

PROPPANT INFORMATION
!! Use weight slip values !!
VARIANCE (%)
Prop Type / Mesh Quantity
100 Mesh 2500 lbs 0.1%
20/40 Ottawa 48000 lbs 22.9%
Total Prop on Location: 50500 lbs 21.8%
Variance From Weight Tickets
Sand Screw Total 59053 lbs 16.9%
Densometer Prop Total 59990 lbs 18.8%
59990 lbs. of proppant placed 118.8% Proppant placed

Crew- Black
Halliburton Engineer- Alex Mayhew
Treater- Chris Gleim
Production Co. Rep- Kristen Stocks
Consultant-

START JOB: 2:54 PM
END JOB: 4:00 PM

Shut In
5 min 2410 psi
10min 2355 psi
15min 2323 psi

JOB COMMENTS