

EP WELLS DAILY OPERATIONS REPORT

Report 16

11/19/2017

Company	PERMIAN
Well Type	Development
Well	UNIVERSITY 19 PW UNIT 1404H
Wellbore	UNIVERSITY 19 PW UNIT 1404H
WBS No/API No	30266568 / 4230133215.00

Event Summary

Event Type	Completion only	Event Start Date	10/31/2017	Days on Location	16.00
Objective	Install Completion	Original Spud Date	06/17/2017		
Est. Days	65.00	Contractor	PERMIAN WELL SVC		
Work Unit	PERMIAN COMPLETIONS	Days To Release			
		Rig Phone/FAX No.			

Well Status

Supervisor	John Bevans	Measured Depth(ft)	
Engineer	Bobby Ramos	TVD(ft)	
Other Supervisor	Mike Johnson	24 Hr Progress(ft)	
Depth Ref/Grd Elev/Water Depth(ft)	DFE: 2,800.10 / 2,772.10	Hole size(in)	
THF Datum			
Daily NPT(hr/%)	0/0	Last Casing MD	
Days Ahd(-) Bhnd(+)(50/50)		Next Casing MD	
Actual cost to date/AFE	2,443,023/5,029,301.00	Current MW / BH EMW(ppg)	/
Actual divided by AFE	0.49	LOT/FIT EMW(ppg)	
Daily Cost	285,560	Lithology	
		Formation/MD Top	

HSE Summary

Last Incident	Date	Days	Last Incident	Date	Days	KPI's	
LWC RWC MTC FAC Last casing pressure test			PSI NII HPI GOAL ZERO DAYS PS BARRIER EVENT PS barrier bowtie review			TRCF LWCF Safety Cards - Safe Safety Card - Unsafe SSE% Last casing pressure(psi)	
Safety Comments:							
14 JSA's							
10 saFEWORK PERMITS							
72 ee'S							

HSE Drills

Drills/Tests	Date	Days Since Last		
Last Derrick Inspection			JSA's/Toolbox Talks	14
Last BOP function test			Days Since Last Drill	15
Last BOP Test				
Next BOP Test				

Operations Summary

24 Hour Summary
fRAC 27THRU 30
Update Since Report Time
READY TO FRAC STGE 31
24 Hour Forecast
CONTINUE PERF AND FRAC OPERATIONS.

EP WELLS DAILY OPERATIONS REPORT

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11/19/2017

Well UNIVERSITY 19 PW UNIT 1404H
Wellbore UNIVERSITY 19 PW UNIT 1404H

Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
0:00	2.50	FRAC	WLF			0		Perf stage 27 23:00 Handover from frac to WL. 2330 Pick up lubricator. Remove night cap. PU tools. 2340 Stab lubricator. Fill lubricator. 2345 PT lubricator to 8000psi 2350 Open well with 4200psi. 1720 "Stage #27 Plug and Perf RIH with (4) 1' Keane guns: 2.75" OD HSC at 6SPF with 60* phased perforating guns and Boss Hog composite ball-drop frac plug. Tie into liner top @10966'. Pump down as follows: 3bpm @ 4315psi11600 6bpm @ 4778psi11700 9bpm @ 5453psi11800 10bpm @ 5897psi12300 bpm @ psi 10bpm @ 6079psi Set plug @ 16319ft Perforate as follows: 16294' - 16295' 16249' - 16250' 16204' - 16205' 16159' - 16160' Stabilized pressure after perf: 5100psi Pump down volume: 99bbl" 00:53 POOH 0140 Shut in well with 4800 psi. Bleed off. 0145 Break lubricator. All shots fired. Drop ball. MU night cap. LD tools and lub. Secure crown and wing valves. 0230 Handover from WL to frac.
2:30	2.07	FRAC	WLF			0		Stage 27 Summary University 19 PW Unit 1404H Interval 16159 - 16295 Open Well Pressure 5,043 psi Max Treating Pressure 9,199 psi Max Slurry Rate 59.9 bpm Average Treating Pressure 8,642 psi Average Slurry Rate 49.9 bpm Breakdown Pressure 7,068 psi Breakdown Rate 5.0 bpm Breakdown Volume 210 gal Avg HHP 10,570 hp Final ISIP 5,269 psi Frac Gradient 0.886 psi/ft Pad Volume 1,470 gal Main Body Volume 170,520 gal Flush Volume 26,838 gal 100 MAZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 141,820 lbs 100 M Sand Pumped 279,600 lbs Proppant in Formation 421,420 lbs Avg Proppant Concentration 3.10 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover (incl. pumpdown) 4,159 bbls Load to Recover w/o Acid 4,159 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 3,980 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 99 bbls pump down rate 10.0 bpm Max pump down pressure 6,079 psi Fluid Temp 72.0 ?F Total Pump Time 1:33 hr:min Pumps Lost During Job 0 Treatment Start Time 3:01 0:00 0:00 Treatment End Time 4:34 0:00 0:00

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Well UNIVERSITY 19 PW UNIT 1404H
Wellbore UNIVERSITY 19 PW UNIT 1404H

Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Diverter Slurry bbls -Proppant was pumped as a ramp from 0.50 PPA to 3.0 PPA then a 3.0 PPA, 3.5 PPA, and a 4.0 PPA step. - Ran two 40 bbl shots of gel with a 20 bbl spacer. - Ran NO 15% HCl this stage - This stage utilized a ball in seat plug. Time for Prop on Perfs 19.0 minutes Time between Stages (TBF) 1:30 Hours/min
4:34	0.68	FRAC	FWL			0		Shut in well w/5269 psi. Handover from Frac to WL. Wait on other pad ops. Remove nightcap. PU tools. Stab lubricator. Fill lubricator. Pressure test lubricator to 8000 psi. Good test
5:15	2.10	FRAC	WLT			0		WL Start perf University 1404H Stage 28 Tie into liner top at 10966 ft Initial WHP 4850 psi Pumpdown Pressures 3bpm 4100 6bpm 4500 psi 9bpm 4900 psi 9bpm psi 9bpm psi Max Pressure 5100 psi Total Fluid to recover 87 bbls Plug set @ 16134 Plus 5' Boss Hog Composite Frac Plug/ Ball in place plug Plug OD 3.65 in Pre-set Tension 1950 lbs Post-set Tension 1620 lbs Pre-Perf Pressure 4700 psi Perforation Summary: (4 count) 1' Keane Guns: 2.75" OD HSC at 6 spf @ 60 deg phasing 16114' - 16115' 6 shots 16069' - 16070' 6 shots 16024' - 16025' 6 shots 15979' - 15980' 6 shots Post-Perf Pressure 4700 psi WL POOH 6:18 POOH with Wireline. Bump up. Grease UM valve. Shut in well with 4500 psi. Bleed off. Break lubricator. All shots fired. MU night cap. Secure crown and wing valves. Grease crown valve Handover from WL to frac. Wait on other pad ops.
7:21	3.23	FRAC	FRT			0		Prime and pressure test frac. Stage 28 Summary University 19 PW Unit 1404H Interval 15979 - 16115 Open Well Pressure 4,460 psi Max Treating Pressure 9,315 psi Max Slurry Rate 60.0 bpm Average Treating Pressure 8,876 psi Average Slurry Rate 52.0 bpm Breakdown Pressure 8,573 psi Breakdown Rate 13.6 bpm Breakdown Volume 378 gal Avg HHP 11,313 hp Final ISIP 5,531 psi

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Wellbore UNIVERSITY 19 PW UNIT 1404H

Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Frac Gradient 0.908 psi/ft Pad Volume 1,764 gal Main Body Volume 164,346 gal Flush Volume 26,754 gal 100 MAZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 0 lbs 100 M Sand Pumped 423,780 lbs Proppant in Formation 423,780 lbs Avg Proppant Concentration 3.26 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover (incl. pumpdown) 4,000 bbls Load to Recover w/o Acid 4,000 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 3,833 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 87 bbls pump down rate 9.0 bpm Max pump down pressure 5,700 psi Fluid Temp 72.0 ?F Total Pump Time 1:34 hr:min Pumps Lost During Job 11 Treatment Start Time 8:04 0:00 0:00 Treatment End Time 9:38 0:00 0:00 Diverter Slurry bbls -Proppant was pumped as a ramp from 0.50 PPA to 3.0 PPA then a 3.0 PPA, 3.5 PPA, and a 4.0 PPA step. - Ran two 40 bbl shots of gel with a 20 bbl spacer. - Ran NO 15% HCl this stage - This stage utilized a ball in seat plug. - lost pump 10097 due to mechanical issues Time for Prop on Perfs 14.0 minutes Time between Stages (TBF) 0:59 Hours/min Shut in well w/ 5216 psi. Handover from Frac to WL. Wait on other pad ops. Remove night cap. PU tools. Stab lubricator. Fill lubricator. Pressure test lubricator to 8000 psi. Good test
10:35	1.72	FRAC	WLT			0		WL Start perf University 1404H Stage 29 Tie into liner top at 10966 ft Initial WHP 4600 psi Pumpdown Pressures 3bpm 4200 6bpm 4600 psi 9bpm 5100 psi 9bpm psi 9bpm psi Max Pressure 6300 psi Total Fluid to recover 84 bbls Plug set @ 15959 Boss Hog Composite Frac Plug/ Ball in place plug Plug OD 3.65 in Pre-set Tension 1700 lbs Post-set Tension 1450 lbs Pre-Perf Pressure 5300 psi Perforation Summary: (4 count) 1' Keane Guns: 2.75" OD HSC at 6 spf @ 60 deg phasing 15934' - 15935' 6 shots 15889' - 15890' 6 shots 15884' - 15885' 6 shots

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Wellbore UNIVERSITY 19 PW UNIT 1404H

Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								15799' - 15800' 6 shots Post-Perf Pressure 5220 psi WL POOH 11:23 Bump up. Grease UM/LM valve. Shut in well with 4300 psi. Bleed off. Break lubricator. All shots fired. MU night cap. Secure crown and wing valves. Handover from WL to frac. Wait on other pad ops.
12:18	1.17	FRAC	WLF			0		Prime and pressure test frac.
13:28	1.40	FRAC	FRT			0		Stage 29 Summary University 19 PW Unit 1404H Interval 15799 - 15935 Open Well Pressure 5,055 psi Max Treating Pressure 9,232 psi Max Slurry Rate 61.0 bpm Average Treating Pressure 8,664 psi Average Slurry Rate 53.2 bpm Breakdown Pressure 7,848 psi Breakdown Rate 8.4 bpm Breakdown Volume 126 gal Avg HHP 11,297 hp Final ISIP 0 psi Frac Gradient 0.433 psi/ft Pad Volume 2,226 gal Main Body Volume 157,962 gal Flush Volume 26,712 gal 100 MAZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 14,000 lbs 100 M Sand Pumped 406,280 lbs Proppant in Formation 420,280 lbs Avg Proppant Concentration 3.39 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover (incl. pumpdown) 3,845 bbls Load to Recover w/o Acid 3,845 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 3,681 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 84 bbls pump down rate 9.0 bpm Max pump down pressure 6,300 psi Fluid Temp 72.0 ?F Total Pump Time 1:22 hr:min Pumps Lost During Job 1 Treatment Start Time 13:28 0:00 0:00 Treatment End Time 14:50 0:00 0:00 Diverter Slurry bbls -Proppant was pumped as a ramp from 0.50 PPA to 3.0 PPA then a 3.0 PPA, 3.5 PPA, and a 4.0 PPA step. - Ran two 40 bbl shots of gel with a 20 bbl spacer. - Ran NO 15% HCl this stage - This stage utilized a ball in seat plug. - lost pump 10087 due to mechanical issues Time for Prop on Perfs 14.0 minutes Time between Stages (TBF) 1:25 Hours/min
14:52	1.00	FRAC	FWL			0		Shut in well w/ 5309 psi. Handover from Frac to WL. Wait on other pad ops. Remove night cap. PU tools. Stab lubricator. Fill lubricator. Pressure test lubricator to 8000 psi. Good test
15:52	2.38	FRAC	WLF			0		WL Start perf University 1404H Stage 30 Tie into liner top at 10966 ft Initial WHP 4550 psi Pumpdown Pressures

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								3bpm 4200 6bpm 4500 psi 9bpm 5100 psi 9bpm psi 9bpm psi Max Pressure 6100 psi Total Fluid to recover 79 bbls Plug set @ 15782 Minus 3' Boss Hog Composite Frac Plug/ Ball in place plug Plug OD 3.65 in Pre-set Tension 1700 lbs Post-set Tension 1440 lbs Pre-Perf Pressure 5200 psi Perforation Summary: (4 count) 1' Keane Guns: 2.75" OD HSC at 6 spf @ 60 deg phasing 15754' - 15755' 6 shots 15709' - 15710' 6 shots 15664' - 15665' 6 shots 15619' - 15620' 6 shots Post-Perf Pressure 5218 psi WL POOH 16:50
18:15	2.58	FRAC	WLF			0		Frac stage 30 Stage 30 Summary University 19 PW Unit 1404H Interval 15619 - 15755 Open Well Pressure 4,620 psi Max Treating Pressure 9,303 psi Max Slurry Rate 60.7 bpm Average Treating Pressure 8,684 psi Average Slurry Rate 49.7 bpm Breakdown Pressure 6,316 psi Breakdown Rate 5.4 bpm Breakdown Volume 294 gal Avg HHP 10,578 hp Final ISIP 5,322 psi Frac Gradient 0.890 psi/ft Pad Volume 840 gal Main Body Volume 147,756 gal Flush Volume 26,418 gal 100 MAZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 233,940 lbs 100 M Sand Pumped 186,380 lbs Proppant in Formation 420,320 lbs Avg Proppant Concentration 3.65 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover (incl. pumpdown) 3,597 bbls Load to Recover w/o Acid 3,597 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 3,438 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 79 bbls pump down rate 9.0 bpm Max pump down pressure 6,100 psi Fluid Temp 72.0 ?F Total Pump Time 1:27 hr:min Pumps Lost During Job 0 Treatment Start Time 19:10 0:00 0:00 Treatment End Time 20:37 0:00 0:00 Diverter Slurry bbls -Proppant was pumped as a ramp from 0.50 PPA to 3.0 PPA then a

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								3.0 PPA, 3.5 PPA, and a 4.0 PPA step. - Ran two 40 bbl shots of gel with a 20 bbl spacer. - Ran NO 15% HCl this stage - This stage utilized a ball in seat plug. Time for Prop on Perfs 17.0 minutes Time between Stages (TBF) 1:15 Hours/min
20:50	3.17	FRAC	WLF			0		Perf stage. 31 21:00 Handover from frac to WL. 2105 Pick up lubricator. Remove night cap. PU tools. 2110 Stab lubricator. Fill lubricator. 2115 PT lubricator to 8000psi 2120 Open well with 4800psi. 1720 "Stage #31 Plug and Perf RIH with (4) 1' Keane guns: 2.75" OD HSC at 6SPF with 60* phased perforating guns and Boss Hog composite ball-drop frac plug. Tie into liner top @10966'. Pump down as follows: 3bpm @ 4272psi11600 6bpm @ 4580psi11700 9bpm @ 5137psi11800 10bpm @ 5750psi bpm @ psi 10bpm @ 6319psi Set plug @ 15578ft Perforate as follows: 15574' - 15575' 15529' - 15530' 15484' - 15485' 15439' - 15440' Stabilized pressure after perf: 5072psi Pump down volume: 82bbl" 2114 POOH 0 Shut in well with 4550psi. Bleed off. 16 Break lubricator. All shots fired. Drop ball. MU night cap. LD tools and lub. Secure crown and wing valves. 00:00 Handover from WL to frac.
Total	24.00							

06.00 Update

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Description
0:00	1.67	FRAC	WLF			0	Frac stage 31 Stage 31 Summary University 19 PW Unit 1404H Interval 15439 - 15575 Open Well Pressure 4,290 psi Max Treating Pressure 9,266 psi Max Slurry Rate 60.8 bpm Average Treating Pressure 8,602 psi Average Slurry Rate 51.8 bpm Breakdown Pressure 6,302 psi Breakdown Rate 6.2 bpm Breakdown Volume 252 gal Avg HHP 10,921 hp Final ISIP 5,119 psi Frac Gradient 0.873 psi/ft Pad Volume 840 gal Main Body Volume 158,634 gal Flush Volume 26,376 gal 100 MAZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 139,620 lbs 100 M Sand Pumped 283,320 lbs

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Well UNIVERSITY 19 PW UNIT 1404H
Wellbore UNIVERSITY 19 PW UNIT 1404H

06.00 Update

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Description
							Proppant in Formation 422,940 lbs Avg Proppant Concentration 3.37 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover (incl. pumpdown) 3,859 bbls Load to Recover w/o Acid 3,859 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 3,697 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 82 bbls pump down rate 10.0 bpm Max pump down pressure 6,319 psi Fluid Temp 72.0 ?F Total Pump Time 1:24 hr:min Pumps Lost During Job 0 Treatment Start Time 0:11 0:00 0:00 Treatment End Time 1:35 0:00 0:00 Diverter Slurry bbls -Proppant was pumped as a ramp from 0.50 PPA to 3.0 PPA then a 3.0 PPA, 3.5 PPA, and a 4.0 PPA step. - Ran two 40 bbl shots of gel with a 20 bbl spacer. - Ran NO 15% HCl this stage - This stage utilized a ball in seat plug. Time for Prop on Perfs 16.0 minutes Time between Stages (TBF) 1:03 Hours/min Stage 31 Summary University 19 PW Unit 1404H Interval 15439 - 15575 Open Well Pressure 4,290 psi Max Treating Pressure 9,266 psi Max Slurry Rate 60.8 bpm Average Treating Pressure 8,602 psi Average Slurry Rate 51.8 bpm Breakdown Pressure 6,302 psi Breakdown Rate 6.2 bpm Breakdown Volume 252 gal Avg HHP 10,921 hp Final ISIP 5,119 psi Frac Gradient 0.873 psi/ft Pad Volume 840 gal Main Body Volume 158,634 gal Flush Volume 26,376 gal 100 M AZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 139,620 lbs 100 M Sand Pumped 283,320 lbs Proppant in Formation 422,940 lbs Avg Proppant Concentration 3.37 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover (incl. pumpdown) 3,859 bbls Load to Recover w/o Acid 3,859 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 3,697 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 82 bbls pump down rate 10.0 bpm Max pump down pressure 6,319 psi Fluid Temp 72.0 ?F Total Pump Time 1:24 hr:min Pumps Lost During Job 0 Treatment Start Time 0:11 0:00 0:00 Treatment End Time 1:35 0:00 0:00 Diverter Slurry bbls -Proppant was pumped as a ramp from 0.50 PPA to 3.0 PPA then a 3.0

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Wellbore UNIVERSITY 19 PW UNIT 1404H

06.00 Update

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Description
							PPA, 3.5 PPA, and a 4.0 PPA step. - Ran two 40 bbl shots of gel with a 20 bbl spacer. - Ran NO 15% HCl this stage - This stage utilized a ball in seat plug. Time for Prop on Perfs 16.0 minutes Time between Stages (TBF) 1:03 Hours/min Stage 31 Summary University 19 PW Unit 1404H Interval 15439 - 15575 Open Well Pressure 4,290 psi Max Treating Pressure 9,266 psi Max Slurry Rate 60.8 bpm Average Treating Pressure 8,602 psi Average Slurry Rate 51.8 bpm Breakdown Pressure 6,302 psi Breakdown Rate 6.2 bpm Breakdown Volume 252 gal Avg HHP 10,921 hp Final ISIP 5,119 psi Frac Gradient 0.873 psi/ft Pad Volume 840 gal Main Body Volume 158,634 gal Flush Volume 26,376 gal 100 MAZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 139,620 lbs 100 M Sand Pumped 283,320 lbs Proppant in Formation 422,940 lbs Avg Proppant Concentration 3.37 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover (incl. pumpdown) 3,859 bbls Load to Recover w/o Acid 3,859 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 3,697 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 82 bbls pump down rate 10.0 bpm Max pump down pressure 6,319 psi Fluid Temp 72.0 ?F Total Pump Time 1:24 hr:min Pumps Lost During Job 0 Treatment Start Time 0:11 0:00 0:00 Treatment End Time 1:35 0:00 0:00 Diverter Slurry bbls -Proppant was pumped as a ramp from 0.50 PPA to 3.0 PPA then a 3.0 PPA, 3.5 PPA, and a 4.0 PPA step. - Ran two 40 bbl shots of gel with a 20 bbl spacer. - Ran NO 15% HCl this stage - This stage utilized a ball in seat plug. Time for Prop on Perfs 16.0 minutes Time between Stages (TBF) 1:03 Hours/min Stage 31 Summary University 19 PW Unit 1404H Interval 15439 - 15575 Open Well Pressure 4,290 psi Max Treating Pressure 9,266 psi Max Slurry Rate 60.8 bpm Average Treating Pressure 8,602 psi Average Slurry Rate 51.8 bpm Breakdown Pressure 6,302 psi Breakdown Rate 6.2 bpm Breakdown Volume 252 gal

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06.00 Update

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Description
							<p> Avg HHP 10,921 hp Final ISIP 5,119 psi Frac Gradient 0.873 psi/ft Pad Volume 840 gal Main Body Volume 158,634 gal Flush Volume 26,376 gal 100 MAZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 139,620 lbs 100 M Sand Pumped 283,320 lbs Proppant in Formation 422,940 lbs Avg Proppant Concentration 3.37 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover (incl. pumpdown) 3,859 bbls Load to Recover w/o Acid 3,859nt End Time 1:35 0:00 0:00 Diverter Slurry bbls -Proppant was pumped as a ramp from 0.50 PPA to 3.0 PPA then a 3.0 PPA, 3.5 PPA, and a 4.0 PPA step. - Ran two 40 bbl shots of gel with a 20 bbl spacer. - Ran NO 15% HCl this stage - This stage utilized a ball in seat plug. </p> <p> Time for Prop on Perfs 16.0 minutes Time between Stages (TBF) 1:03 Hours/min </p> <p> Stage 31 Summary University 19 PW Unit 1404H Interval 15439 - 15575 Open Well Pressure 4,290 psi Max Treating Pressure 9,266 psi Max Slurry Rate 60.8 bpm Average Treating Pressure 8,602 psi Average Slurry Rate 51.8 bpm Breakdown Pressure 6,302 psi Breakdown Rate 6.2 bpm Breakdown Volume 252 gal Avg HHP 10,921 hp Final ISIP 5,119 psi Frac Gradient 0.873 psi/ft Pad Volume 840 gal Main Body Volume 158,634 gal Flush Volume 26,376 gal 100 MAZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 139,620 lbs 100 M Sand Pumped 283,320 lbs Proppant in Formation 422,940 lbs Avg Proppant Concentration 3.37 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover (incl. pumpdown) 3,859 bbls Load to Recover w/o Acid 3,859 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 3,697 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 82 bbls pump down rate 10.0 bpm Max pump down pressure 6,319 psi Fluid Temp 72.0 ?F Total Pump Time 1:24 hr:min Pumps Lost During Job 0 Treatment Start Time 0:11 0:00 0:00 Treatment End Time 1:35 0:00 0:00 Diverter Slurry bbls -Proppant was pumped as a ramp from 0.50 PPA to 3.0 PPA then a 3.0 PPA, 3.5 PPA, and a 4.0 PPA step. - Ran two 40 bbl shots of gel with a 20 bbl spacer. - Ran NO 15% HCl this stage </p>

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06.00 Update

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Description
							- This stage utilized a ball in seat plug.
							Time for Prop on Perfs 16.0 minutes Time between Stages (TBF) 1:03 Hours/min
							Stage 31 Summary University 19 PW Unit 1404H Interval 15439 - 15575
							Open Well Pressure 4,290 psi
							Max Treating Pressure 9,266 psi
							Max Slurry Rate 60.8 bpm
							Average Treating Pressure 8,602 psi
							Average Slurry Rate 51.8 bpm
							Breakdown Pressure 6,302 psi
							Breakdown Rate 6.2 bpm
							Breakdown Volume 252 gal
							Avg HHP 10,921 hp
							Final ISIP 5,119 psi
							Frac Gradient 0.873 psi/ft
							Pad Volume 840 gal
							Main Body Volume 158,634 gal
							Flush Volume 26,376 gal
							100 MAZ Sand Pumped 0 lbs
							100 M Brown Sand Pumped 139,620 lbs
							100 M Sand Pumped 283,320 lbs
							Proppant in Formation 422,940 lbs
							Avg Proppant Concentration 3.37 lb/gal
							Max Proppant Concentration 4.00 lb/gal
							Load to Recover (incl. pumpdown) 3,859 bbls
							Load to Recover w/o Acid 3,859 bbls
							15% HCL Spearhead 0 gal
							Slickwater Fluid Pumped 3,697 bbls
							20# Linear Fluid Pumped 80 bbls
							20# Crosslink Fluid Pumped 0 bbls
							Pump down volume 82 bbls
							pump down rate 10.0 bpm
							Max pump down pressure 6,319 psi
							Fluid Temp 72.0 ?F
							Total Pump Time 1:24 hr:min
							Pumps Lost During Job 0
							Treatment Start Time 0:11 0:00 0:00
							Treatment End Time 1:35 0:00 0:00
							Diverter Slurry bbls
							-Proppant was pumped as a ramp from 0.50 PPA to 3.0 PPA then a 3.0 PPA, 3.5 PPA, and a 4.0 PPA step.
							- Ran two 40 bbl shots of gel with a 20 bbl spacer.
							- Ran NO 15% HCL this stage
							- This stage utilized a ball in seat plug.
							Time for Prop on Perfs 16.0 minutes Time between Stages (TBF) 1:03 Hours/min
							Stage 31 Summary University 19 PW Unit 1404H Interval 15439 - 15575
							Open Well Pressure 4,290 psi
							Max Treating Pressure 9,266 psi
							Max Slurry Rate 60.8 bpm
							Average Treating Pressure 8,602 psi
							Average Slurry Rate 51.8 bpm
							Breakdown Pressure 6,302 psi
							Breakdown Rate 6.2 bpm
							Breakdown Volume 252 gal
							Avg HHP 10,921 hp
							Final ISIP 5,119 psi
							Frac Gradient 0.873 psi/ft

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Wellbore UNIVERSITY 19 PW UNIT 1404H

06.00 Update

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Description
							Pad Volume 840 gal Main Body Volume 158,634 gal Flush Volume 26,376 gal 100 MAZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 139,620 lbs 100 M Sand Pumped 283,320 lbs Proppant in Formation 422,940 lbs Avg Proppant Concentration 3.37 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover (incl. pumpdown) 3,859 bbls Load to Recover w/o Acid 3,859 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 3,697 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 82 bbls pump down rate 10.0 bpm Max pump down pressure 6,319 psi Fluid Temp 72.0 ?F Total Pump Time 1:24 hr:min Pumps Lost During Job 0 Treatment Start Time 0:11 0:00 0:00 Treatment End Time 1:35 0:00 0:00 Diverter Slurry bbls -Proppant was pumped as a ramp from 0.50 PPA to 3.0 PPA then a 3.0 PPA, 3.5 PPA, and a 4.0 PPA step. - Ran two 40 bbl shots of gel with a 20 bbl spacer. - Ran NO 15% HCl this stage - This stage utilized a ball in seat plug. Time for Prop on Perfs 16.0 minutes Time between Stages (TBF) 1:03 Hours/min Stage 31 Summary University 19 PW Unit 1404H Interval 15439 - 15575 Open Well Pressure 4,290 psi Max Treating Pressure 9,266 psi Max Slurry Rate 60.8 bpm Average Treating Pressure 8,602 psi Average Slurry Rate 51.8 bpm Breakdown Pressure 6,302 psi Breakdown Rate 6.2 bpm Breakdown Volume 252 gal Avg HHP 10,921 hp Final ISIP 5,119 psi Frac Gradient 0.873 psi/ft Pad Volume bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 3,697 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 82 bbls pump down rate 10.0 bpm Max pump down pressure 6,319 psi Fluid Temp 72.0 ?F Total Pump Time 1:24 hr:min Pumps Lost During Job 0 Treatment Start Time 0:11 0:00 0:00 Treatment End Time 1:35 0:00 0:00 Diverter Slurry bbls -Proppant was pumped as a ramp from 0.50 PPA to 3.0 PPA then a 3.0 PPA, 3.5 PPA, and a 4.0 PPA step. - Ran two 40 bbl shots of gel with a 20 bbl spacer. - Ran NO 15% HCl this stage - This stage utilized a ball in seat plug.

EP WELLS DAILY OPERATIONS REPORT

Report 16

11/19/2017

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1:40	2.33	FRAC	WLF			0	Perf stage 32 1:50 Handover from frac to WL. 2:00 Pick up lubricator. Remove night cap. PU tools. 2:10 Stab lubricator. Fill lubricator. 2:15 PT lubricator to 8000psi 2:20 Open well with 4550psi. 2:50 "Stage #32 Plug and Perf RIH with (4) 1' Keane guns: 2.75" OD HSC at 6SPF with 60* phased perforating guns and Boss Hog composite ball-drop frac plug. Tie into

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4:00		FRAC	WLF			0	prime up and equalize Frac stage 32