

EP WELLS DAILY OPERATIONS REPORT

Report 20

12/02/2017

Company	PERMIAN
Well Type	Development
Well	UNIVERSITY 19 D 0904H
Wellbore	UNIVERSITY 19 D 0904H
WBS No/API No	30266560 / 4230133226.00

Event Summary

Event Type	Completion only	Event Start Date	10/31/2017	Days on Location	20.00
Objective	Install Completion	Original Spud Date	06/19/2017		
Est. Days	65.00	Contractor	PERMIAN WELL SVC		
Work Unit	PERMIAN COMPLETIONS	Days To Release			
		Rig Phone/FAX No.			

Well Status

Supervisor	Andrew Veroba	Measured Depth(ft)	
Engineer	Bobby Ramos	TVD(ft)	
Other Supervisor	M. Hank Persaud / Brett Oldenkamp	24 Hr Progress(ft)	
Depth Ref/Grd Elev/Water Depth(ft)	DFE: 2,799.10 / 2,771.10	Hole size(in)	
THF Datum			
Daily NPT(hr/%)	5.75/23.96	Last Casing MD	
Days Ahd(-) Bhnd(+)(50/50)		Next Casing MD	
Actual cost to date/AFE	1,564,981/3,746,244.00	Current MW / BH EMW(ppg)	/
Actual divided by AFE	0.42	LOT/FIT EMW(ppg)	
Daily Cost	152,737	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:							
Total hours: 1020							

HSE Drills

Drills/Tests	Date	Days Since Last		
Last Derrick Inspection Last BOP function test Last BOP Test Next BOP Test			JSA's/Toolbox Talks Days Since Last Drill	19

Operations Summary

24 Hour Summary
Frac stages 19-20.
Update Since Report Time
Frac stage 21.
24 Hour Forecast
Frac stages 21-23.

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Wellbore UNIVERSITY 19 D 0904H

Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
0:00	0.17	FRAC	FWL			0		Handover from frac to wireline. Pick up lubricator. Remove night cap. PU tools. Stab lubricator. Fill lubricator. Pressure test lubricator to 8000 psi
0:10	1.78	FRAC	WLT			0		Open well with 5150 psi. RIH. "Stage #19 Plug and Perf RIH with (4) 1' Keane guns: 2.75" OD HSC at 6SPF with 60* phased perforating guns and Downhole Technology Boss Hog composite frac plug. Tie into liner top @ 10990'. Bring on pumps at 11500'. Pump down as follows: 3 bpm @ 4400 psi 6 bpm @ 5000 psi 10 bpm @ 5100 psi Max:10 bpm. Max: 6350 psi. Set plug @ 15266' Perforate as follows: 15247' - 15248' 15196' - 15197' 15151' - 15152' 15106' - 15107' Stabilized pressure after perforating: 5320 psi Pump down volume: 54 bbl" POOH Shut in well with 4900 psi. Bleed off.
1:57	0.15	FRAC	WLF			0		Break lubricator. All shots fired. MU night cap. LD tools and stand lubricator. Secure crown and wing valves. Handover from WL to Frac.
2:06	2.32	FRAC	WLF			0		WOCO.
4:25	1.60	FRAC	FRT			0		Stage 19 Summary University 19 D 0904H Interval 15106 - 15242 Open Well Pressure 4,589 psi Max Treating Pressure 9,437 psi Max Slurry Rate 58.8 bpm Average Treating Pressure 8,754 psi Average Slurry Rate 52.5 bpm Breakdown Pressure 7,718 psi Breakdown Rate 9.7 bpm Breakdown Volume 105 gal Avg HHP 11,264 hp Final ISIP 5,692 psi Frac Gradient 0.922 psi/ft Pad Volume 2,356 gal Main Body Volume 183,341 gal Flush Volume 26,124 gal 100 MAZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 161,380 lbs 100 M Sand Pumped 259,080 lbs Proppant in Formation 420,460 lbs Avg Proppant Concentration 2.86 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover (incl. pumpdown) 4,429 bbls Load to Recover w/o Acid 4,422 bbls 15% HCL Spearhead 300 gal Slickwater Fluid Pumped 4,278 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 64 bbls pump down rate 10.0 bpm Max pump down pressure 6,320 psi Fluid Temp 72.0 ?F Total Pump Time 1:33 hr:min Pumps Lost During Job 0 Treatment Start Time 4:28 0:00 0:00 Treatment End Time 6:01 0:00 0:00

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Diverter Slurry bbls - Proppant was pumped with a ramp of 0.50 - 2.50 PPA, then steps of 2.50 PPA, 3.00 PPA, 3.50 PPA, 4.00 PPA. - Ran 300 gal of 15% HCl - Ran 2 shots of gel with a 20 bbl spacer. - A ball in place plug was utilized.
6:01	0.47	FRAC	FWL			0		SIW and wait on concurrent operations. Grease and wireline move off 903 well.
6:29	0.23	FRAC	FWL			0		Pick up lubricator. Remove night cap. PU guns/plug. Stab and fill lubricator. Pressure test PCE to 8kpsi.
6:43	1.73	FRAC	WLT			0		Open well with 5100 psi and RIH. Conduct switch checks at 200'. Stage 20 Plug and Perf RIH with (4) 1' Keane guns: 2.75" OD HSC at 6SPF with 60* phased perforating guns and Downhole Technology Boss Hog composite ball-in-place frac plug. Tie into liner top @ 10,990'. Bring on pumps at 11,570'. Pump down as follows: 3bpm @ 4990 psi 6bpm @ 5150 psi 10bpm @ 5900 psi Max pressure = 6300 psi Set plug @ 15,086ft Perforate as follows: 15,062' – 15,063' 15,016' – 15,017' 14,971' – 14,972' 14,926' – 14,927' Stabilized pressure after perf: 5290 psi Pump down volume: 64 bbl POOH.
8:27	0.23	FRAC	GRS			0		Bump up and grease UMW.
8:41	0.27	FRAC	WLF			0		SIW @ 4800 psi. Bled off pressure and break lubricator/BOP's. Lowered Perf guns out of lubricator and confirmed all shots fired. N/U nightcap and close crown valve. L/D perf guns and setting tool. Greased LMV. Ready for frac.
8:57	3.30	FRAC	WLF			0		Wait on concurrent operations.
12:15	1.80	FRAC	WLF			1		NPT: during frac of 903 well, datavan has communication issues. Troubleshoot while ELine continues. Dispatch Techs to wellsite.
14:03	3.95	FRAC	WLF			1		START NPT NOW. Wireline in hole and guns checked at 14:03. Well handed over to frac however Datavan communication remains down. Re-boot and comms are up. Pressure test. Test good. Comms up. Hold Pause. Circulate back to blender. Communications are intermittent. ETechs repair datavan server communications system.
18:00	0.50	FRAC	FRP			0		Frac prep.
18:30	1.58	FRAC	FRT			0		Stage 20 Summary University 19 D 0904H Interval 14926 - 15062 Open Well Pressure 4,282 psi Max Treating Pressure 9,247 psi Max Slurry Rate 60.3 bpm Average Treating Pressure 8,584 psi Average Slurry Rate 53.3 bpm Breakdown Pressure 8,270 psi Breakdown Rate 9.4 bpm Breakdown Volume 294 gal Avg HHP 11,214 hp Final ISIP 5,792 psi Frac Gradient 0.931 psi/ft Pad Volume 1,613 gal Main Body Volume 181,997 gal

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Wellbore UNIVERSITY 19 D 0904H

Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Flush Volume 26,166 gal 100 M AZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 0 lbs 100 M Sand Pumped 420,340 lbs Proppant in Formation 420,340 lbs Avg Proppant Concentration 2.85 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover (incl. pumpdown) 4,397 bbls Load to Recover w/o Acid 4,393 bbls 15% HCL Spearhead 200 gal Slickwater Fluid Pumped 4,249 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 64 bbls pump down rate 10.0 bpm Max pump down pressure 6,300 psi Fluid Temp 72.0 ?F Total Pump Time 1:32 hr:min Pumps Lost During Job 0 Treatment Start Time 18:32 0:00 0:00 Treatment End Time 20:04 0:00 0:00 Diverter Slurry bbls - Proppant was pumped with a ramp of 0.50 - 2.50 PPA, then steps of 2.50 PPA, 3.0 PPA, 3.50 PPA, 4.00 PPA. - Ran 300 gal of 15% HCl - Ran 2 shots of gel with a 20 bbl spacer. - A ball in place plug was utilized. Time for Prop on Perfs 21.5 minutes Time between Stages (TBF) 6:17 Hours/min
20:05	0.22	FRAC	FWL			0		Handover from frac to wireline. Pick up lubricator. Remove night cap. PU tools. Stab lubricator. Fill lubricator. Pressure test lubricator to 8000 psi
20:18	1.85	FRAC	WLT			0		Open well with 5300 psi. RIH. "Stage #21 Plug and Perf RIH with (4) 1' Keane guns: 2.75" OD HSC at 6SPF with 60* phased perforating guns and Downhole Technology Boss Hog composite frac plug. Tie into liner top @ 10990'. Bring on pumps at 11550'. Pump down as follows: 3 bpm @ 4900 psi 6 bpm @ 5100 psi 10 bpm @ 5600 psi Max:10 bpm. Max: 6600 psi. Set plug @ 14906' Perforate as follows: 14881' - 14882' 14836' - 14837' 14791' - 14792' 14746' - 14747' Stabilized pressure after perforating: 5315 psi Pump down volume: 58 bbl" POOH Shut in well with 4900 psi. Bleed off.
22:09	0.15	FRAC	WLF			0		Break lubricator. All shots fired. MU night cap. LD tools and stand lubricator. Secure crown and wing valves. Handover from WL to Frac.
22:18	1.70	FRAC	WLF			0		WOCO.
Total	24.00							

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Wellbore UNIVERSITY 19 D 0904H

06.00 Update

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Description
0:00	0.58	FRAC	WLF			0	WOCO.
0:35	1.50	FRAC	FRT			0	<p>Stage 21 Summary University 19 D 0904H</p> <p>Interval 14746 - 14882</p> <p>Open Well Pressure 4,423 psi</p> <p>Max Treating Pressure 9,255 psi</p> <p>Max Slurry Rate 61.0 bpm</p> <p>Average Treating Pressure 8,664 psi</p> <p>Average Slurry Rate 54.6 bpm</p> <p>Breakdown Pressure 7,724 psi</p> <p>Breakdown Rate 9.4 bpm</p> <p>Breakdown Volume 307 gal</p> <p>Avg HHP 11,594 hp</p> <p>Final ISIP 5,602 psi</p> <p>Frac Gradient 0.914 psi/ft</p> <p>Pad Volume 2,352 gal</p> <p>Main Body Volume 170,502 gal</p> <p>Flush Volume 25,872 gal</p> <p>100 M AZ Sand Pumped 0 lbs</p> <p>100 M Brown Sand Pumped 111,740 lbs</p> <p>100 M Sand Pumped 308,040 lbs</p> <p>Proppant in Formation 419,780 lbs</p> <p>Avg Proppant Concentration 3.14 lb/gal</p> <p>Max Proppant Concentration 4.00 lb/gal</p> <p>Load to Recover (incl. pumpdown) 4,118 bbls</p> <p>Load to Recover w/o Acid 4,113 bbls</p> <p>15% HCL Spearhead 200 gal</p> <p>Slickwater Fluid Pumped 3,975 bbls</p> <p>20# Linear Fluid Pumped 80 bbls</p> <p>20# Crosslink Fluid Pumped 0 bbls</p> <p>Pump down volume 58 bbls</p> <p>pump down rate 10.0 bpm</p> <p>Max pump down pressure 6,580 psi</p> <p>Fluid Temp 72.0 ?F</p> <p>Total Pump Time 1:26 hr:min</p> <p>Pumps Lost During Job 0</p> <p>Treatment Start Time 0:38 0:00 0:00</p> <p>Treatment End Time 2:04 0:00 0:00</p> <p>Diverter Slurry bbls</p> <p>- Proppant was pumped with a ramp of 0.50 - 3.00 PPA, then steps of 3.00 PPA, 3.50 PPA, 4.00 PPA.</p> <p>- Ran 300 gal of 15% HCl</p> <p>- Ran 2 shots of gel with a 20 bbl spacer.</p> <p>- A ball in place plug was utilized.</p> <p>Time for Prop on Perfs 17.0 minutes</p> <p>Time between Stages (TBF) 0:37 Hours/min</p>
2:05	0.25	FRAC	FWL			0	WOCO.
2:20	0.23	FRAC	FWL			0	<p>Handover from frac to wireline. Pick up lubricator. Remove night cap. PU tools.</p> <p>Stab lubricator. Fill lubricator.</p> <p>Pressure test lubricator to 8000 psi</p>
2:34	1.60	FRAC	WLT			0	<p>Open well with 5100 psi. RIH.</p> <p>"Stage #22 Plug and Perf</p> <p>RIH with (4) 1' Keane guns: 2.75" OD HSC at 6SPF with 60* phased perforating guns and Downhole Technology Boss Hog composite frac plug. Tie into liner top @ 10990'. Bring on pumps at 11450'. Pump down as follows:</p> <p>3 bpm @ 4300 psi</p> <p>6 bpm @ 4900 psi</p> <p>10 bpm @ 5000 psi</p> <p>Max:10 bpm. Max: 6650 psi.</p> <p>Set plug @ 14726'</p> <p>Perforate as follows:</p>

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06.00 Update

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Description
							14701' - 14702' 14656' - 14657' 14611' - 14612' 14566' - 14567' Stabilized pressure after perforating: 5250 psi Pump down volume: 58 bbl" POOH Shut in well with 4700 psi. Bleed off.
4:10	0.17	FRAC	WLF			0	Break lubricator. All shots fired. MU night cap. LD tools and stand lubricator. Secure crown and wing valves. Handover from WL to Frac.
4:20		FRAC	WLF			0	WOCO.

NPT Summary

Start Date/Time	Responsible Company	NPT Code	Failure MD (ft)	Ops Code	Type*	Equipment Type	Net time (hr)	Gross time (hr)	Severity	Status
12/02/2017 12:15	KEANE FRAC TX LLC	Stimulation		WLF	EN	Frac - Other Equipment		5.75		OPEN
Description: While fracing adjacent well (903), at the tail end of the frac could not communicate with blender or inline densiometer. Completed stage manually. Immediately dispatched techs to location. Re-boot and comms are up. Pressure test. Test good. Communications remain good. Hold Pause. Circulate back to blender. Communications are intermittent. ETechs repair datavan server communications system.						Title: Datavan server communications down.				
Total								5.75		