

**EP WELLS DAILY OPERATIONS REPORT**

Report 47

08/22/2017

Company PERMIAN  
 Well Type Development  
 Well UNIVERSITY 19 PW UNIT 1504H  
 Wellbore UNIVERSITY 19 PW UNIT 1504H ST01  
 WBS No/API No 30265014 / 4230133171.01

**Event Summary**

Event Type	Completion only	Event Start Date	04/28/2017	Days on Location	46.00
Objective	Install Completion	Original Spud Date	02/02/2017		
Est. Days	25.00	Contractor	PERMIAN WELL SVC		
Work Unit	PERMIAN COMPLETIONS	Days To Release			
		Rig Phone/FAX No.			

**Well Status**

Supervisor	Nick Morrison	Measured Depth(ft)	
Engineer	Bobby Ramos	TVD(ft)	
Other Supervisor	Ben Dickinson	24 Hr Progress(ft)	
Depth Ref/Grd Elev/Water Depth(ft)	DFE: 2,761.75 / 2,736.10	Hole size(in)	
THF Datum			
Daily NPT(hr/%)	0.72/2.99	Last Casing MD	
Days Ahd(-) Bhnd(+)(50/50)		Next Casing MD	
Actual cost to date/AFE	2,906,490/4,757,442.00	Current MW / BH EMW(ppg)	/
Actual divided by AFE	0.61	LOT/FIT EMW(ppg)	
Daily Cost	17,719	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 <b>GOAL ZERO DAYS</b> <b>PS BARRIER EVENT</b> <b>PS barrier bowtie review</b>			TRCF LWCF Safety Cards - Safe Safety Card - Unsafe SSE% Last casing pressure(psi)
Safety Comments:						

**HSE Drills**

Drills/Tests	Date	Days Since Last	JSA's/Toolbox Talks Days Since Last Drill
Last Derrick Inspection Last BOP function test Last BOP Test Next BOP Test			45

**Operations Summary**

<b>24 Hour Summary</b>
Frac Operations Frac stages 16, 17 WL stages 17, 18
Update Since Report Time
<b>24 Hour Forecast</b>
Cont. Frac Operations

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
0:00	0.33	FRAC	OPO			0		Standby for other pad operations.
0:20	0.12	FRAC	FRP			0		Valve team line out zipper manifold to the 1504 Frac pressure test lines.
0:27	2.48	FRAC	FRT			0		Valve team open UMV. Start FRAC 1504 Stage 16.  Stage 16 Summary University 19 PW Unit 1504H Interval 17672 - 17807 Open Well Pressure 4,320 psi Max Treating Pressure 9,478 psi Max Slurry Rate 51.6 bpm Average Treating Pressure 8,887 psi Average Slurry Rate 45.0 bpm Breakdown Pressure 7,270 psi Breakdown Rate 10.7 bpm Breakdown Volume 17,472 gal Avg HHP 9,802 hp Final ISIP 5,361 psi Frac Gradient 0.897 psi/ft Pad Volume 17,640 gal Main Body Volume 233,058 gal Flush Volume 27,552 gal 30/50 AZ Sand Pumped 0 lbs 100 Mesh Sand Pumped 420,260 lbs Proppant in Formation 420,260 lbs Avg Proppant Concentration 2.33 lb/gal Max Proppant Concentration 3.00 lb/gal Load to Recover 5,688 bbls Load to Recover w/o Acid 5,676 bbls 15% HCL Spearhead 504 gal Slickwater Fluid Pumped 5,457 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 139 bbls pump down rate 11.5 bpm Max pump down pressure 6,300 psi Fluid Temp 72.0 ?F Total Pump Time 2:28 hr:min Pumps Lost During Job 0 Treatment Start Time 0:28 0:00 0:00 Treatment End Time 2:56 0:00 2:28 Diverter Slurry bbls Proppant pumped as a ramp from 0.5PPA-2.0PPA, then 2.0PPA, 2.5PPA, and 3.0PPA. All proppant placed. - 500gal of 15% HCl was placed and two 20# gel sweeps were pumped at 40 bbls each prior to flush.
2:56	0.07	FRAC	FWL			0		Valve team shut UMV. End FRAC 1504 Stage 16. FRAC HO to WL
3:00	0.83	FRAC	OPO			0		Standby for other pad operations
3:50	0.08	FRAC	WLT			0		Crane PU lube and PCE. WL PU new guns and plug.
3:55	0.08	FRAC	WLT			0		Swing over and stab 1504. Valve team line out valves. Send boost and fill lube.
4:00	0.08	FRAC	WLT			0		Pressure test low 1000 psi, high 8000 psi. TEST GOOD Bleed back and equalize.
4:05	1.10	FRAC	WLT			0		Valve team open UMV. Start WL 1504 Stage 17  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 @ 10881. Bring on pumps. Pump down as follows:

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								3 bpm @ 4500 psi 6 bpm @ 4700 psi 11.5 bpm @ 5200 psi Max:11.5 bpm. Max: 6100 psi  Set plug @ 17652 ft Perforate as follows: 17628' - 17629' 17583' - 17584' 17539' - 17540' 17494' - 17495' Stabilized pressure after perforating: 4600 psi Pump down volume: 148 bbl"
5:11	0.82	FRAC	WLT			0		WL POOH
6:00	0.75	FRAC	OPO			0		WL @ 200' standby
6:45	0.08	FRAC	WLF			0		WL at surface. Valve team shut UMV. End WL PERF 1504 Stage 17
6:50	0.08	FRAC	WLF			0		Break off lube and swing back. Drop out and check fire. ALL SHOTS FIRED.
6:55	0.03	FRAC	WLF			0		Balls away. Stab night cap. WL LD spent guns, rack out lube and PCE.
6:57	0.38	FRAC	WLF			0		Oil States start greasing Crown valve, HCR and 1505 zipper leg.
7:20	0.30	FRAC	FRT			0		Align valves, equalize to 4500 psi. Open well with 4184 psi.
7:38	2.70	FRAC	FRT			0		Stage 17 Summary University 19 PW Unit 1504H Interval 17494 - 17629 Open Well Pressure 4,185 psi Max Treating Pressure 9,341 psi Max Slurry Rate 51.8 bpm Average Treating Pressure 8,446 psi Average Slurry Rate 40.8 bpm Breakdown Pressure 6,938 psi Breakdown Rate 9.4 bpm Breakdown Volume 17,388 gal Avg HHP 8,446 hp Final ISIP 5,196 psi Frac Gradient 0.883 psi/ft Pad Volume 17,640 gal Main Body Volume 235,116 gal Flush Volume 27,468 gal 30/50 AZ Sand Pumped 0 lbs 100 Mesh Sand Pumped 419,760 lbs Proppant in Formation 419,760 lbs Avg Proppant Concentration 2.30 lb/gal Max Proppant Concentration 2.50 lb/gal Load to Recover 5,746 bbls Load to Recover w/o Acid 5,734 bbls 15% HCL Spearhead 504 gal Slickwater Fluid Pumped 5,506 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 148 bbls pump down rate 11.5 bpm Max pump down pressure 6,100 psi Fluid Temp 72.0 ?F Total Pump Time 2:39 hr:min Pumps Lost During Job 0 Treatment Start Time 7:41 0:00 0:00 Treatment End Time 10:20 0:00 2:39 Diverter Slurry bbls Proppant pumped as a ramp from 0.5PPA-2.0PPA, then 2.0PPA,

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Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								2.5PPA, and 3.0PPA. All proppant placed. 500gal of 15% HCl was placed and two 20# gel sweeps were pumped at 40 bbls each prior to flush.
10:20	0.37	FRAC	FWL			0		Other pad operations
10:42	1.15	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 Open well with 4600 psi. RIH stop at liner top at 10881'
11:51	0.72	FRAC	WLT			1		*****NPT KEANE PUMP DOWN TRUCK LEAKING FAN MOTOR*****Swap out pump down truck and pressure test iron to 8500 psi.
12:34	0.40	FRAC	WLT			0		"Stage #18 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 @ . Bring on pumps at 11200'. Pump down as follows: 3 bpm @ 4613 psi 6 bpm @ 4900 psi 10 bpm @ 5102 psi 12 bpm @ psi Max:10 bpm. Max: 5815 psi  Set plug @ 17474 ft Perforate as follows: 17450' - 17451' 17405' - 17406' 17361' - 17362' 17317' - 17318' Stabilized pressure after perforating: 4558 psi Pump down volume: 151 bbl"
12:58	1.23	FRAC	WLT			0		POOH
14:12	0.08	FRAC	WLF			0		Shut in well with 4400 psi Break lubricator. All shots fired. Drop ball. MU night cap. LD tools and lub. Secure crown and wing valves. Handover from WL to frac. Grease UMV/LMV
14:17	9.72	FRAC	OPO			0		Standby for other operations.
<b>Total</b>	<b>24.00</b>							

**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
08/22/2017 11:51	KEANE FRAC LP	Perforation		WLT	EN	Elect W/L Surface Equipment	0.72	0.72		OPEN
<b>Description:</b> Swap out pump down truck and pressure test iron to 8500 psi.							<b>Title:</b> WOE			
							<b>Total</b>	<b>0.72</b>	<b>0.72</b>	