

EP WELLS DAILY OPERATIONS REPORT

Report 52

08/27/2017

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	51.00
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	Tommy Hurdle	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/%)	0/0	Last Casing MD	
Days Ahd(-) Bhnd(+)(50/50)		Next Casing MD	
Actual cost to date/AFE	4,202,216/4,757,442.00	Current MW / BH EMW(ppg)	/
Actual divided by AFE	0.88	LOT/FIT EMW(ppg)	
Daily Cost	221,435	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:							

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	50

Operations Summary

24 Hour Summary
Frac Stg 30. Perf & Frac Stg 31, 32.
Update Since Report Time
24 Hour Forecast
Continue Frac Ops

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
0:00	0.25	FRAC	WLT			0		Finish Stg 30 Perforation
0:15	1.08	FRAC	WLT			0		POOH
1:20	0.33	FRAC	WLF			0		Bump up and SIW @ 4200 psi. Bled off pressure and break lubricator/BOP's. Lowered Perf guns out of lubricator and confirmed all shots fired. Drop ball, N/U nightcap and close crown valve. L/D perf guns and P/U next set of guns for next run. Greased Crown and Hyd valve - grease time 10 min. HO to Frac
1:40	0.92	FRAC	WLF			0		Other Pad Ops
2:35	0.23	FRAC	FRP			0		Prime up and pressure test to 9500 psi. - Test Good. Equalize and open well @ 3612 psi.
2:49	1.72	FRAC	FRT			0		<p>Stage 30 Summary University 19 PW Unit 1504H</p> <p>Interval 15180 - 15315</p> <p>Open Well Pressure 3,612 psi</p> <p>Max Treating Pressure 9,316 psi</p> <p>Max Slurry Rate 60.8 bpm</p> <p>Average Treating Pressure 8,916 psi</p> <p>Average Slurry Rate 55.6 bpm</p> <p>Breakdown Pressure 7,073 psi</p> <p>Breakdown Rate 9.9 bpm</p> <p>Breakdown Volume 16,464 gal</p> <p>Avg HHP 12,150 hp</p> <p>Final ISIP 5,301 psi</p> <p>Frac Gradient 0.892 psi/ft</p> <p>Pad Volume 14,658 gal</p> <p>Main Body Volume 173,082 gal</p> <p>Flush Volume 26,082 gal</p> <p>30/50 AZ Sand Pumped 0 lbs</p> <p>100 Mesh Sand Pumped 420,200 lbs</p> <p>Proppant in Formation 420,200 lbs</p> <p>Avg Proppant Concentration 3.42 lb/gal</p> <p>Max Proppant Concentration 4.00 lb/gal</p> <p>Load to Recover 4,206 bbls</p> <p>Load to Recover w/o Acid 4,194 bbls</p> <p>15% HCL Spearhead 504 gal</p> <p>Slickwater Fluid Pumped 4,029 bbls</p> <p>20# Linear Fluid Pumped 80 bbls</p> <p>20# Crosslink Fluid Pumped 0 bbls</p> <p>Pump down volume 85 bbls</p> <p>pump down rate 11.5 bpm</p> <p>Max pump down pressure 6,600 psi</p> <p>Fluid Temp 72.0 ?F</p> <p>Total Pump Time 1:43 hr:min</p> <p>Pumps Lost During Job 1</p> <p>Treatment Start Time 2:49 0:00 0:00</p> <p>Treatment End Time 4:32 0:00 1:43</p> <p>Diverter Slurry bbls</p> <p>Proppant pumped as a ramp from 0.50PPA - 4.00PPA, then a 4.00PPA hold. All proppant placed.</p> <p>-500 gallons of 15% HCl was displaced.</p> <p>-Two 40 bbl, 20# gel sweeps were run prior to flush.</p>
4:32	0.05	FRAC	FWL			0		SIW @ 4873 psi. Bleed off pressure and HO to WL. Held aar to discuss frac stage.
4:35	0.33	FRAC	FWL			0		Other Pad Ops
4:55	0.25	FRAC	FWL			0		<p>Pick up lubricator. Remove night cap. PU guns/plug.</p> <p>Stab lubricator. Fill lubricator.</p> <p>PT lubricator to 1k-8kpsi. Open well with 4200 psi.</p> <p>RIH to 200' conduct checks.</p>
5:10	0.92	FRAC	WLT			0		<p>"Stage #31 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 @10811. Bring on pumps at 11600'. Pump down as follows:</p> <p>3bpm @ 3900psi @11600</p>

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								6bpm @ 4100psi @11700 11.5bpm @ 4800psi @11800 11.5bpm w/ 6400psi Set plug @ 15160ft Perforate as follows: 15136' - 15137' 15091' - 15092' 15047' - 15048' 15002' - 15003' Stabilized pressure after perf: 4000psi Pump down volume: 84bbl"
6:05	2.67	FRAC	WLT			0		POOH with WL 0630 - Held Pre-Tower Safety Meeting. Covered focus areas - SSE, Barrier Ownership, Hands Free and DROPS. After pre-tower crews held respective TBT for their areas. Then conducted their handovers wait on completion of frac on adjacent well come off well and drop ball
8:45	2.50	FRAC	WLT			0		Stage 31 Summary University 19 PW Unit 1504H Interval 15002 - 15137 Open Well Pressure 3,455 psi Max Treating Pressure 9,187 psi Max Slurry Rate 61.9 bpm Average Treating Pressure 8,484 psi Average Slurry Rate 58.1 bpm Breakdown Pressure 0 psi Breakdown Rate 0.0 bpm Breakdown Volume 0 gal Avg HHP 12,081 hp Final ISIP 5,439 psi Frac Gradient 0.904 psi/ft Pad Volume 48,342 gal Main Body Volume 208,404 gal Flush Volume 26,040 gal 30/50 AZ Sand Pumped 0 lbs 100 Mesh Sand Pumped 415,660 lbs Proppant in Formation 415,660 lbs Avg Proppant Concentration 3.23 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 5,046 bbls Load to Recover w/o Acid 5,034 bbls 15% HCL Spearhead 504 gal Slickwater Fluid Pumped 4,870 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 84 bbls pump down rate 11.5 bpm Max pump down pressure 6,400 psi Fluid Temp 72.0 ?F Total Pump Time 2:08 hr:min Pumps Lost During Job 1 Treatment Start Time 9:06 0:00 0:00 Treatment End Time 11:14 0:00 2:08 Diverter Slurry bbls Proppant pumped as a ramp from 0.50PPA - 4.00PPA, then a 4.00PPA hold. All proppant placed. -500 gallons of 15% HCl was displaced. -Two 40 bbl, 20# gel sweeps were run prior to flush. -There was no ball seated. Due to this, there was no acid break either. -Due to operator error, the wrong sand bin was run, resulting in us falling 4340 lbs. short of design.
11:15	0.42	FRAC	WLT			0		Pick up lubricator. Remove night cap. PU tools. Stab lubricator. Fill lubricator. PT lubricator to psi

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Wellbore UNIVERSITY 19 PW UNIT 1504H ST01

Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Open well with psi.
11:40	1.00	FRAC	WLT			0		"Stage #32 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 @10881. Bring on pumps at 11500'. Pump down as follows: 3bpm @ 4100psi @11500 6bpm @ 4200psi @11580 10bpm @ 4700psi @11660 bpm @ psi @ bpm @ psi @ 10bpm w/ 5571psi @ Set plug @ 14982ft Perforate as follows: 14958' - 14959' 14913' - 14914' 14869' - 14870' 14824' - 14825' Stabilized pressure after perf: 4180psi Pump down volume: 77bbl"
12:40	7.50	FRAC	WLT			0		POOH, STUCK TOOLS AT 12900', PUMP DOWN TO FREE TOOLS, POOH, STUCK 5 MORE TIMES EACH TIME PUMP AT 16 BPM. AND FREE TOOLS CONTINUE UP TO 11,347' AND STUCK AGAIN, OPEN WELL ON 28/64" CHOKE AND FLOW WELL UNTIL TOOLS ABOVE LINER TOP, CONTINUE TO PULL OUT OF HOLE.
20:10	0.17	FRAC	WLT			0		Bump up and SIW @ 3600 psi. Bled off pressure and break lubricator. Lowered Perf guns out of lubricator and confirmed all shots fired. Drop ball, N/U nightcap and close crown valve. L/D perf guns and set BOP's/lubricator on stand to prepare for Re-heading. Greased UMW and Hyd valve - grease time 10 min. HO to Frac
20:20	1.00	FRAC	OPO			0		Re-head WL and Re-Gen WL truck. Aligned valves and pumped 51 bbls to seat the ball. Confirmed and shutdown pumps.
21:20	0.33	FRAC	WLT			0		Other Pad Ops
21:40	0.07	FRAC	FRP			0		Prime up and equalize. Open well @ 5164 psi.
21:44	1.42	FRAC	FRT			0		Stage 32 Summary University 19 PW Unit 1504H Interval 14824 - 14959 Open Well Pressure 5,164 psi Max Treating Pressure 9,436 psi Max Slurry Rate 61.8 bpm Average Treating Pressure 8,871 psi Average Slurry Rate 55.0 bpm Breakdown Pressure 7,895 psi Breakdown Rate 11.8 bpm Breakdown Volume 2,142 gal Avg HHP 11,958 hp Final ISIP 5,543 psi Frac Gradient 0.913 psi/ft Pad Volume 6,636 gal Main Body Volume 167,706 gal Flush Volume 25,830 gal 30/50 AZ Sand Pumped 0 lbs 100 Mesh Sand Pumped 420,760 lbs Proppant in Formation 420,760 lbs Avg Proppant Concentration 3.37 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 4,070 bbls Load to Recover w/o Acid 4,058 bbls 15% HCL Spearhead 504 gal Slickwater Fluid Pumped 3,901 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 77 bbls pump down rate 10.0 bpm Max pump down pressure 5,571 psi

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Wellbore UNIVERSITY 19 PW UNIT 1504H ST01

Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Fluid Temp 72.0 ?F Total Pump Time 1:25 hr:min Pumps Lost During Job 0 Treatment Start Time 21:44 0:00 0:00 Treatment End Time 23:09 0:00 1:25 Diverter Slurry bbls All proppant placed. Stage pumped by design. -500 gallons of 15% HCl displaced. -Two 40 bbl, 20# gel sweeps run prior to flush.
23:09	0.10	FRAC	FWL			0		SIW @ 4909 psi. Bleed off pressure and HO to WL. Held aar on frac stage.
23:15	0.33	FRAC	FWL			0		Other Pad Ops
23:35	0.25	FRAC	FWL			0		Pick up lubricator. Remove night cap. PU guns/plug. Stab lubricator. Fill lubricator. PT lubricator to 1k-8kpsi. Open well with 4300 psi. RIH to 200' conduct checks.
23:50	0.17	FRAC	WLT			0		RIH with WL to perforate stage 33
Total	24.00							

06.00 Update

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Description
0:00	0.67	FRAC	WLT			0	"Stage #33 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 @10811. Bring on pumps at 11600'. Pump down as follows: 3bpm @ 3900psi @11600 6bpm @ 4200psi @11700 11.5bpm @ 4900psi @11800 11.5bpm w/ 6100psi Set plug @ 14804ft Perforate as follows: 14780' - 14781' 14735' - 14736' 14691' - 14692' 14646' - 14647' Stabilized pressure after perf: 4600psi Pump down volume: 13bbl"
0:40	0.75	FRAC	WLT			0	POOH
1:25	0.83	FRAC	OPO			0	Wait at 200' for frac to finish.
2:15	0.25	FRAC	WLT			0	Bump up and SIW @ 3700 psi. Bled off pressure and break lubricator/BOP's. Lowered Perf guns out of lubricator and confirmed all shots fired. Drop ball, N/U nightcap and close crown valve. L/D perf guns and P/U next set of guns for next run. Greased UMV and LMV valve - grease time 10 min. HO to Frac
2:30	0.33	FRAC	WLT			0	Other Pad Ops
2:50	0.12	FRAC	FRP			0	Prime up and equalize. Open well @ 3504 psi.
2:57	1.58	FRAC	FRT			0	Stage 33 Summary University 19 PW Unit 1504H Interval 14646 - 14781 Open Well Pressure 3,505 psi Max Treating Pressure 9,343 psi Max Slurry Rate 61.4 bpm Average Treating Pressure 8,778 psi Average Slurry Rate 56.2 bpm Breakdown Pressure 7,038 psi Breakdown Rate 10.5 bpm Breakdown Volume 15,582 gal Avg HHP 12,091 hp

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Wellbore UNIVERSITY 19 PW UNIT 1504H ST01

06.00 Update

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Description
							Final ISIP 5,481 psi Frac Gradient 0.907 psi/ft Pad Volume 15,960 gal Main Body Volume 165,690 gal Flush Volume 25,704 gal 30/50 AZ Sand Pumped 0 lbs 100 Mesh Sand Pumped 420,200 lbs Proppant in Formation 420,200 lbs Avg Proppant Concentration 3.59 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 4,016 bbls Load to Recover w/o Acid 4,004 bbls 15% HCL Spearhead 504 gal Slickwater Fluid Pumped 3,853 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 71 bbls pump down rate 11.5 bpm Max pump down pressure 6,100 psi Fluid Temp 72.0 ?F Total Pump Time 1:33 hr:min Pumps Lost During Job 0 Treatment Start Time 2:59 0:00 0:00 Treatment End Time 4:32 0:00 1:33 Diverter Slurry bbls Proppant pumped as a ramp from 0.5-4.0PPA, then a 4.0PPA hold. All proppant placed. Stage pumped by design. -500 gallons of 15% HCl displaced. -Two 40 bbl, 20# gel sweeps run prior to flush.
4:32	0.40	FRAC	FRT			0	Wait on other pad operations
4:56	0.17	FRAC	FRT			0	Pick up lubricator. Remove night cap. PU guns/plug. Stab lubricator. Fill lubricator. PT lubricator to 1k-8kpsi. Open well with 4200 psi. RIH to 200' conduct checks.
5:06		FRAC	FRT			0	"Stage #34 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 @10811. Bring on pumps at 11600'. Pump down as follows: 3bpm @ 3900psi @11600 6bpm @ 4100psi @11700 11.5bpm @ 4800psi @11800 11.5bpm w/ 6400psi Set plug @ 15160ft Perforate as follows: 15136' - 15137' 15091' - 15092' 15047' - 15048' 15002' - 15003' Stabilized pressure after perf: 4000psi Pump down volume: 84bbl"