

## EP WELLS DAILY OPERATIONS REPORT

Report 12

10/20/2017

Company	PERMIAN
Well Type	Development
Well	UNIVERSITY 19 PW UNIT 1406H
Wellbore	UNIVERSITY 19 PW UNIT 1406H
WBS No/API No	4230133213 / 4230133213.00

## Event Summary

Event Type	Completion only	Event Start Date	09/03/2017	Days on Location	12.00
Objective	Install Completion	Original Spud Date	04/30/2017		
Est. Days	31.00	Contractor	PERMIAN WELL SVC		
Work Unit	PERMIAN COMPLETIONS	Days To Release			
		Rig Phone/FAX No.			

## Well Status

Supervisor	Tommy Hurdle	Measured Depth(ft)	
Engineer	Alex Villegas	TVD(ft)	
Other Supervisor	Nick Morrison	24 Hr Progress(ft)	
Depth Ref/Grd Elev/Water Depth(ft)	DFE: 2,793.00 / 2,767.00	Hole size(in)	
THF Datum			
Daily NPT(hr/%)	3.25/13.54	Last Casing MD	
Days Ahd(-) Bhnd(+)(50/50)		Next Casing MD	
Actual cost to date/AFE	344,325/4,377,702.00	Current MW / BH EMW(ppg)	/
Actual divided by AFE	0.08	LOT/FIT EMW(ppg)	
Daily Cost	169,260	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		
Last Derrick Inspection Last BOP function test Last BOP Test Next BOP Test			JSA's/Toolbox Talks Days Since Last Drill	11

## Operations Summary

24 Hour Summary
Continue rig up riser. Frac stage 1. Wait on BOP power pack. Frac stage 2 & 3 WL stage 2 thru 4
Update Since Report Time
POOH logging out of the hole
24 Hour Forecast
Continue frac operations

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## Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
0:00	1.50	FRAC	WLT			1		*****NPT KEANE WL ***** Continue to wait on fittings and change out BOP power pack *****END KEANE WL NPT*****
1:30	1.75	FRAC	NOA			1		*****START NPT WAIT ON WEATHER***** *****NPT ENDS*****
3:15	1.45	FRAC	WLT			0		Pick up lubricator. Remove night cap. PU tools. Stab lubricator. Fill lubricator. Pressure test lubricator to 9000 psi Open well with 4550 psi. RIH.
4:42	1.17	FRAC	WLT			0		"Stage #2 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 @ 11069' . Bring on pumps at 11300'. Pump down as follows: 3 bpm @ 5470 psi 6 bpm @ 4900 psi 9 bpm @ 6100 psi 12 bpm @ psi Max:9 bpm. Max: 6700 psi  Set plug @ 19353 ft Perforate as follows: 19333' - 19334' 19289' - 19290' 19245' - 19246' 19201' - 19202' Stabilized pressure after perforating: 4936 psi Pump down volume: 187 bbl"
5:52	1.88	FRAC	WLT			0		POOH logging up to 100' above the liner top at 11069'. Shut in well with psi
7:45	0.33	FRAC	WLF			0		Bump up and SIW @ 4700 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 LMV valve - grease time 10 min. HO to Frac
8:05	0.92	FRAC	WLF			0		Other Pad Ops
9:00	0.30	FRAC	FRP			0		Prime up and pressure test to 9500 - Test good. Bleed down and equalize. Open well @ 4525 psi
9:18	3.73	FRAC	FRT			0		Stage 2 Summary University 19 PW Unit 1406H Interval 19201 - 19334 Open Well Pressure 4,525 psi Max Treating Pressure 9,303 psi Max Slurry Rate 50.8 bpm Average Treating Pressure 9,032 psi Average Slurry Rate 45.7 bpm Breakdown Pressure 5,260 psi Breakdown Rate 8.0 bpm Breakdown Volume 2,142 gal Avg HHP 10,117 hp Final ISIP 5,503 psi Frac Gradient 0.903 psi/ft Pad Volume 13,902 gal Main Body Volume 254,957 gal Flush Volume 28,896 gal 100 MAZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 331,640 lbs 100 M Sand Pumped 94,020 lbs Proppant in Formation 425,660 lbs Avg Proppant Concentration 2.20 lb/gal Max Proppant Concentration 3.00 lb/gal Load to Recover 6,257 bbls Load to Recover w/o Acid 6,246 bbls 15% HCL Spearhead 479 gal Slickwater Fluid Pumped 5,990 bbls 20# Linear Fluid Pumped 80 bbls

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								20# Crosslink Fluid Pumped 0 bbls Pump down volume 187 bbls pump down rate 9.0 bpm Max pump down pressure 6,700 psi Fluid Temp 72.0 ?F Total Pump Time 3:15 hr:min Pumps Lost During Job 0 Treatment Start Time 9:18 10:49 0:00 Treatment End Time 10:20 13:02 3:15 Diverter Slurry bbls - Proppant was pumped as a ramp from 0.50 PPA to 2.0 PPA, then as steps at 2.0 PPA, 2.5 PPA, AND 3.0 PPA - Two 20# gel sweeps 40 bbls each were pumped prior to flush. - Ran one 500 gal shot of 15% HCl -We shut down and closed the well in 10 Bbls into 0.50 PPA proppant ramp after a high psi leak was discovered -at the rear of pump 10. A 3 inch chic was replaced and frac operations resumed. - Time for Prop on Perfs 73.0 minutes Time between Stages (TBF) 16.23 Hours/min
13:02	0.05	FRAC	FWL			0		SIW @ 5317 psi. Bled off pressure and HO to WL. Held pause to discuss AAR for frac stage.
13:05	0.25	FRAC	OPO			0		Other Pad Ops
13:20	0.33	FRAC	FWL			0		Pick up lubricator. Remove night cap. PU guns/plug. Stab lubricator. Fill lubricator. PT lubricator to 1k-8kpsi. Open well with 4820 psi. RIH to 200' conduct checks.
13:40	0.83	FRAC	WLT			0		"Stage #3 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 @11069. Bring on pumps at 11500'. Pump down as follows: 3bpm @ 4655psi @11500 6bpm @ 4965psi @11550 11bpm @ 5600psi @11600 11bpm w/ 6630psi @ Set plug @ 19181ft Perforate as follows: 19157' - 19158' 19113' - 19114' 19069' - 19070' 19025' - 19026' Stabilized pressure after perf: 4940psi Pump down volume: 147bbl"
14:30	1.00	FRAC	WLT			0		POOH to 1000' from surface. Held pause to discuss coming off the well
15:30	1.00	FRAC	OPO			0		Wait on frac to finish.
16:30	0.33	FRAC	FWL			0		Bump up and SIW @ 4800 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 LMV valve - grease time 10 min. HO to Frac
16:50	0.33	FRAC	FWL			0		Other Pad Ops
17:10	0.33	FRAC	FRP			0		Prime up and pressure test to 9500 psi - test good. Bleed down pressre and equalize. Open well @ 4538 psi.
17:30	2.72	FRAC	FRT			0		Stage 3 Summary University 19 PW Unit 1406H Interval 19025 - 19158 Open Well Pressure 4,538 psi

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Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Max Treating Pressure 9,455 psi Max Slurry Rate 51.2 bpm Average Treating Pressure 9,063 psi Average Slurry Rate 43.6 bpm Breakdown Pressure 5,502 psi Breakdown Rate 8.0 bpm Breakdown Volume 84 gal Avg HHP 9,685 hp Final ISIP 0 psi Frac Gradient 0.433 psi/ft Pad Volume 20,076 gal Main Body Volume 226,395 gal Flush Volume 28,770 gal 100 MAZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 373,460 lbs 100 M Sand Pumped 47,120 lbs Proppant in Formation 420,580 lbs Avg Proppant Concentration 2.47 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 5,575 bbls Load to Recover w/o Acid 5,566 bbls 15% HCL Spearhead 393 gal Slickwater Fluid Pumped 5,301 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 185 bbls pump down rate 11.0 bpm Max pump down pressure 6,632 psi Fluid Temp 72.0 ?F Total Pump Time 2:45 hr:min Pumps Lost During Job 1 Treatment Start Time 17:28 0:00 0:00 Treatment End Time 20:13 0:00 2:45 Diverter Slurry bbls - Proppant was pumped as a ramp from 0.50 PPA to 2.0 PPA, then as steps at 2.5 PPA, 3.0 PPA, and 3.5 PPA - Two 20# gel sweeps 40 bbls each were pumped prior to flush. - Ran one 400 gal shot of 15% HCl  Time for Prop on Perfs 55.0 minutes Time between Stages (TBF) 1 Hours/min  1730 - 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.
20:13	0.40	FRAC	FWL			0		Other pad operations
20:37	0.25	FRAC	FWL			0		Handover from frac to wireline. Pick up lubricator. Remove night cap. PU tools. Stab lubricator. Fill lubricator. Pressure test lubricator to 8500 psi Open well with 4850 psi. RIH.
20:52	1.03	FRAC	WLT			0		"Stage #4 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 11300'. Pump down as follows: 3 bpm @ 4760 psi 6 bpm @ 4932 psi 9 bpm @ 5790 psi 10 bpm @ 6241 psi Max:10 bpm. Max: 6300 psi  Set plug @ 19005 ft

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Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Perforate as follows: 18981' - 18982' 18937' - 18938' 18893' - 18894' 18848' - 18849' Stabilized pressure after perforating: 4819 psi Pump down volume: 148 bbl"
21:54	0.83	FRAC	WLT			0		POOH
22:44	0.92	FRAC	OPO			0		Wait at 200 ft for frac
23:39	0.22	FRAC	WLF			0		Shut in well with 4600 psi Break lubricator. All shots fired. Drop ball. MU night cap. Grease crown and hydraulic valves 7 minutes LD tools and lub. Secure crown and wing valves. Handover from WL to frac.
23:52	0.13	FRAC	WLF			0		Other pad operations
<b>Total</b>	<b>24.00</b>							

## 06.00 Update

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Description
0:00	0.20	FRAC	WLF			0	Other pad operations
0:12	0.03	FRAC	FRT			0	Align valves prime up. equalize to 5200 psi. Open well with 4414 psi.
0:14		FRAC	FRT			0	Frac stage 4

## 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
10/20/2017 01:30	SHELL	Wait On Weather		NOA	N		1.75	1.75		OPEN
<b>Description:</b> Wait on Weather						<b>Title:</b> WOW				
<b>Total</b>							<b>1.75</b>	<b>1.75</b>		