

EP WELLS DAILY OPERATIONS REPORT

Report 22

10/30/2017

Company PERMIAN
 Well Type Development
 Well UNIVERSITY 19 PW UNIT 1406H
 Wellbore UNIVERSITY 19 PW UNIT 1406H
 WBS No/API No 30266570 / 4230133213.00

Event Summary

Event Type	Completion only	Event Start Date	09/03/2017	Days on Location	22.00
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	Tine Grega	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/%)	2.50/10.42	Last Casing MD	
Days Ahd(-) Bhnd(+)(50/50)		Next Casing MD	
Actual cost to date/AFE	2,513,646/4,377,702.00	Current MW / BH EMW(ppg)	/
Actual divided by AFE	0.57	LOT/FIT EMW(ppg)	
Daily Cost	354,797	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	JSA's/Toolbox Talks Days Since Last Drill
Last Derrick Inspection Last BOP function test Last BOP Test Next BOP Test			21

Operations Summary

24 Hour Summary
WL stages = 29,30,31,32 Frac Stages = 28,29,30,31,32
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	0.42	FRAC	FRT			0		Stage 28 Summary University 19 PW Unit 1406H Interval 14620 - 14753 Open Well Pressure 4,048 psi Max Treating Pressure 9,272 psi Max Slurry Rate 56.0 bpm Average Treating Pressure 8,799 psi Average Slurry Rate 46.0 bpm Breakdown Pressure 8,010 psi Breakdown Rate 8.2 bpm Breakdown Volume 252 gal Avg HHP 9,920 hp Final ISIP 5,305 psi Frac Gradient 0.886 psi/ft Pad Volume 1,134 gal Main Body Volume 145,866 gal Flush Volume 25,956 gal 100 M AZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 138,260 lbs 100 M Sand Pumped 279,740 lbs Proppant in Formation 418,000 lbs Avg Proppant Concentration 3.73 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 3,532 bbls Load to Recover w/o Acid 3,532 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 3,393 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 59 bbls pump down rate 9.0 bpm Max pump down pressure 5,800 psi Fluid Temp 72.0 ?F Total Pump Time 1:26 hr:min Pumps Lost During Job 1 Treatment Start Time 22:59 0:00 0:00 Treatment End Time 0:25 0:00 1:26 Diverter Slurry bbls - Proppant was pumped as a ramp from 0.50 PPA to 4.0 PPA, followed by a 4.0 PPA hold. - Two 20# gel sweeps 40 bbls each were pumped prior to flush. - Did not run 15% HCl this stage - Ran ball in place plug. Lost pump 10086 to mechanical issues
0:25	0.08	FRAC	FRT			0		SIW @ 5000 psi. Bleed off well and HO to WL. Held pause to discuss AAR on frac stage
0:30	1.15	FRAC	FRT			0		Retie rope socket and grease zipper manifold
1:39	0.33	FRAC	WLT			0		Pick up lubricator. Remove night cap. PU guns/plug. Stab lubricator. Fill lubricator. PT lubricator to 1k-8kpsi 5 min low and 10 min high. Open well with 4500 psi. RIH to 200' conduct checks.
1:59	0.68	FRAC	WLT			0		"Stage 29 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-drop frac plug. Tie into liner top @11069". Pump down as follows: 3bpm @ 4300psi11380 6bpm @ 4500psi11600 9bpm @ 5700psi Set plug @ 14600ft Perforate as follows: 14576' - 14577' 14532' - 14533' 14488' - 14489' 14443' - 14444'

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Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Stabilized pressure after perf: 5100psi Pump down volume: 53bbl"
2:40	2.83	FRAC	WLT			0		Wait on pad operations
5:30	0.50	FRAC	SAF			0		Bump up and SIW @ 4300 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 P/U next set of guns for next run. Greased LMV valve - grease time 5 min. HO to Frac 0530 - 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.
6:00	0.17	FRAC	WLF			0		Other Pad Ops
6:10	0.13	FRAC	FRP			0		Prime and equalize. Open well @ 4046 psi.
6:18	1.42	FRAC	FRT			0		Stage 29 Summary University 19 PW Unit 1406H Interval 14443 - 14577 Open Well Pressure 4,046 psi Max Treating Pressure 9,455 psi Max Slurry Rate 59.5 bpm Average Treating Pressure 8,780 psi Average Slurry Rate 49.4 bpm Breakdown Pressure 7,672 psi Breakdown Rate 10.2 bpm Breakdown Volume 336 gal Avg HHP 10,631 hp Final ISIP 5,640 psi Frac Gradient 0.915 psi/ft Pad Volume 1,092 gal Main Body Volume 151,536 gal Flush Volume 25,830 gal 100 M AZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 138,960 lbs 100 M Sand Pumped 271,180 lbs Proppant in Formation 410,140 lbs Avg Proppant Concentration 3.44 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 3,661 bbls Load to Recover w/o Acid 3,661 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 3,528 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 53 bbls pump down rate 9.0 bpm Max pump down pressure 5,700 psi Fluid Temp 72.0 ?F Total Pump Time 1:24 hr:min Pumps Lost During Job 0 Treatment Start Time 6:18 0:00 0:00 Treatment End Time 7:42 0:00 1:24 Diverter Slurry bbls - Proppant was pumped as a ramp from 0.50 PPA to 4.0 PPA, followed by a 4.0 PPA hold. - Ran two 40 bbl shots of gel with a 20 bbl spacer. - Did not run 15% HCl this stage - Ran ball in place plug. Time for Prop on Perfs 16.0 minutes Time between Stages (TBF) :35 Hours/min
7:43	0.03	FRAC	FWL			0		SIW @5111 psi. Bleed off pressure and HO to WL. Held pause to discuss AAR.
7:45	0.50	FRAC	FWL			0		Other Pad Ops

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Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
8:15	0.83	FRAC	FWL			0		Pick up lubricator. Remove night cap. PU guns/plug. Stab lubricator. Fill lubricator. PT lubricator to 1k-8kpsi. Grease locked for 30 minutes. Open well with psi. RIH to 200' conduct checks.
9:05	0.75	FRAC	WLT			0		"Stage #30 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 12000'. Pump down as follows: 3bpm @ 4200psi @12000 6bpm @ 4500psi @12050 10bpm @ 4800psi @12100 10bpm w/ 6344psi Set plug @ 14423ft Perforate as follows: 14399' - 14400' 14355' - 14356' 14311' - 14312' 14267' - 14268' Stabilized pressure after perf: 5074psi Pump down volume: 50bbl"
9:50	0.92	FRAC	WLT			0		POOH. Held pause at 1000' from surface.
10:45	0.25	FRAC	WLF			0		Bump up and SIW @ 4400 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 P/U next set of guns for next run. Greased UMW & Wing valve - grease time 10 min. HO to Frac
11:00	0.33	FRAC	WLF			0		Other Pad Ops
11:20	0.13	FRAC	FRP			0		Prime and equalize. Open well @ 4539 psi.
11:28	1.35	FRAC	FRT			0		Stage 30 Summary University 19 PW Unit 1406H Interval 14267 - 14400 Open Well Pressure 4,539 psi Max Treating Pressure 9,382 psi Max Slurry Rate 59.3 bpm Average Treating Pressure 8,826 psi Average Slurry Rate 51.2 bpm Breakdown Pressure 7,815 psi Breakdown Rate 9.6 bpm Breakdown Volume 252 gal Avg HHP 11,076 hp Final ISIP 5,539 psi Frac Gradient 0.906 psi/ft Pad Volume 1,218 gal Main Body Volume 149,310 gal Flush Volume 25,620 gal 100 MAZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 157,340 lbs 100 M Sand Pumped 263,120 lbs Proppant in Formation 420,460 lbs Avg Proppant Concentration 3.61 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 3,605 bbls Load to Recover w/o Acid 3,605 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 3,475 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 50 bbls pump down rate 10.0 bpm Max pump down pressure 6,344 psi Fluid Temp 72.0 ?F Total Pump Time 1:21 hr:min

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Pumps Lost During Job 0 Treatment Start Time 11:28 0:00 0:00 Treatment End Time 12:49 0:00 1:21 Diverter Slurry bbls - Proppant was pumped as a ramp from 0.50 PPA to 4.0 PPA, followed by a 4.0 PPA hold. - Ran two 40 bbl shots of gel with a 20 bbl spacer. - Did not run 15% HCl this stage - Ran ball in place plug. Time for Prop on Perfs 16.0 minutes Time between Stages (TBF) :47 Hours/min
12:49	0.02	FRAC	FWL			0		SIW @ 5151 psi. Bleed off pressure and HO to WL.
12:50	0.50	FRAC	FWL			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 4600 psi. RIH to 200' conduct checks.
13:40	0.67	FRAC	WLT			0		"Stage #31 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 11700'. Pump down as follows: 3bpm @ 4400psi @11700 6bpm @ 4700psi @11800 10bpm @ 4900psi @11850 10bpm w/ 5984psi Set plug @ 14247ft Perforate as follows: 14223' - 14224' 14179' - 14180' 14132' - 14133' 14093' - 14094' Stabilized pressure after perf: 5013psi Pump down volume: 44bbl"
14:20	0.67	FRAC	WLT			0		POOH. Held pause at 1000' from surface.
15:00	1.13	FRAC	OPO			0		Wait for frac to finish.
16:08	0.20	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
16:20	0.33	FRAC	WLF			0		Other Pad Ops
16:40	2.50	FRAC	WLF			1		Wait on sand to arrive.
19:10	1.28	FRAC	WLF			0		Stage 31 Summary University 19 PW Unit 1406H Interval 14091 - 14224 Open Well Pressure 4,108 psi Max Treating Pressure 9,552 psi Max Slurry Rate 62.5 bpm Average Treating Pressure 8,631 psi Average Slurry Rate 54.7 bpm Breakdown Pressure 7,664 psi Breakdown Rate 7.9 bpm Breakdown Volume 84 gal Avg HHP 11,571 hp Final ISIP 5,540 psi Frac Gradient 0.907 psi/ft Pad Volume 840 gal Main Body Volume 154,014 gal Flush Volume 25,536 gal

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								100 MAZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 0 lbs 100 M Sand Pumped 417,800 lbs Proppant in Formation 417,800 lbs Avg Proppant Concentration 3.48 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 3,711 bbls Load to Recover w/o Acid 3,711 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 3,587 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 44 bbls pump down rate 10.0 bpm Max pump down pressure 5,984 psi Fluid Temp 72.0 ?F Total Pump Time 1:17 hr:min Pumps Lost During Job 0 Treatment Start Time 19:10 0:00 0:00 Treatment End Time 20:27 0:00 1:17 Diverter Slurry bbls - Proppant was pumped as a ramp from 0.50 PPA to 4.0 PPA, followed by a 4.0 PPA hold. - Ran two 40 bbl shots of gel with a 20 bbl spacer. - Did not run 15% HCl this stage - Ran ball in place plug.
20:27	0.25	FRAC	WLF			0		SIW @ 5322 psi. Bleed off well and HO to WL. Held pause to discuss AAR on frac stage
20:42	0.17	FRAC	WLT			0		Pick up lubricator. Remove night cap. PU guns/plug. Stab lubricator. Fill lubricator. PT lubricator to 1k-8kpsi 5 min low and 10 min high. Open well with 4800 psi. RIH to 200' conduct checks.
20:52	0.80	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 ball-drop frac plug. Tie into liner top @11069". Pump down as follows: 3bpm @ 4500psi11380 6bpm @ 4800psi11600 9bpm @ 5500psi Set plug @ 14053ft Perforate as follows: 14050' - 14051' 14003' - 14004' 13959' - 13958' 13915.' - 13916' Stabilized pressure after perf: 5500psi Pump down volume: 45bbl" POOH
21:40	0.67	FRAC	WLT			0		POOH. Held pause at 1000' for surface. Discuss coming off the well.
22:20	0.33	FRAC	WLT			0		Bump up and SIW @ 4500 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 P/U next set of guns for next run. Greased Hyr/Wing valve - grease time 10 min. HO to Frac
22:40	0.33	FRAC	WLT			0		Prime and pressure test to 9500 psi - Test Good. Bleed down to equalize. Open well @ 4888 psi.
23:00	1.00	FRAC	WLT			0		Frac stage 32
Total	24.00							

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06.00 Update

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Description
0:00	0.55	FRAC	FRT			1	Stage 32 Summary University 19 PW Unit 1406H Interval 13915 - 14048 Open Well Pressure 4,438 psi Max Treating Pressure 9,245 psi Max Slurry Rate 60.6 bpm Average Treating Pressure 8,752 psi Average Slurry Rate 48.9 bpm Breakdown Pressure 8,333 psi Breakdown Rate 8.3 bpm Breakdown Volume 294 gal Avg HHP 10,490 hp Final ISIP 5,576 psi Frac Gradient 0.910 psi/ft Pad Volume 1,176 gal Main Body Volume 150,024 gal Flush Volume 25,116 gal 100 MAZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 149,340 lbs 100 M Sand Pumped 270,020 lbs Proppant in Formation 419,360 lbs Avg Proppant Concentration 3.57 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 3,617 bbls Load to Recover w/o Acid 3,617 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 3,492 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 45 bbls pump down rate 9.0 bpm Max pump down pressure 5,400 psi Fluid Temp 72.0 ?F Total Pump Time 1:25 hr:min Pumps Lost During Job 0 Treatment Start Time 23:08 0:00 0:00 Treatment End Time 0:33 0:00 1:25 Diverter Slurry bbls - Proppant was pumped as a ramp from 0.50 PPA to 4.0 PPA, followed by a 4.0 PPA hold. - Ran two 40 bbl shots of gel with a 20 bbl spacer. - Did not run 15% HCl this stage - Ran ball in place plug.
0:33	0.28	FRAC	FRT			1	SIW @ 5200 psi. Bleed off well and HO to WL. Held pause to discuss AAR on frac stage
0:50	0.23	FRAC	FWL			1	Pick up lubricator. Remove night cap. PU guns/plug. Stab lubricator. Fill lubricator. PT lubricator to 1k-8kpsi 5 min low and 10 min high. Open well with 4800 psi. RIH to 200' conduct checks
1:04	0.65	FRAC	FWL			1	"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 ball-drop frac plug. Tie into liner top @11069". Pump down as follows: 3bpm @ 4800psi11380 6bpm @ 5200psi11600 9bpm @ 5500psi Set plug @ 13895ft Perforate as follows: 13871' - 13872' 13827' - 13828' 13783' - 13784' 13739' - 13740' Stabilized pressure after perf: 5700psi Pump down volume: 41bbl"

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06.00 Update

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Description
							POOH
1:43	1.20	FRAC	FWL			1	POOH. Held pause at 1000' for surface. Discuss coming off the well.
2:55		FRAC	FWL			1	Bump up and SIW @ 4610 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 P/U next set of guns for next run. Greased LMV valve - grease time 10 min. HO to Frac

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
10/30/2017 16:40	KEANE FRAC TX LLC	Wait On Equipment/ Materials		WLF	N		2.50	2.50		OPEN
Description: Wait on sand to arrive.						Title: WAIT ON SAND				
Total							2.50	2.50		