

EP WELLS DAILY OPERATIONS REPORT

Report 15

11/18/2017

Company	PERMIAN
Well Type	Development
Well	UNIVERSITY 19 PW UNIT 1404H
Wellbore	UNIVERSITY 19 PW UNIT 1404H
WBS No/API No	30266568 / 4230133215.00

Event Summary

Event Type	Completion only	Event Start Date	10/31/2017	Days on Location	15.00
Objective	Install Completion	Original Spud Date	06/17/2017		
Est. Days	65.00	Contractor	PERMIAN WELL SVC		
Work Unit	PERMIAN COMPLETIONS	Days To Release			
		Rig Phone/FAX No.			

Well Status

Supervisor	John Bevans	Measured Depth(ft)	
Engineer	Bobby Ramos	TVD(ft)	
Other Supervisor	Mike Johnson	24 Hr Progress(ft)	
Depth Ref/Grd Elev/Water Depth(ft)	DFE: 2,800.10 / 2,772.10	Hole size(in)	
THF Datum			
Daily NPT(hr/%)	9.23/38.47	Last Casing MD	
Days Ahd(-) Bhnd(+)(50/50)		Next Casing MD	
Actual cost to date/AFE	2,158,431/5,029,301.00	Current MW / BH EMW(ppg)	/
Actual divided by AFE	0.43	LOT/FIT EMW(ppg)	
Daily Cost	224,246	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:							
14 JSA's, 8 safework permits 72 EE's							

HSE Drills

Drills/Tests	Date	Days Since Last		
Last Derrick Inspection			JSA's/Toolbox Talks	14
Last BOP function test			Days Since Last Drill	14
Last BOP Test				
Next BOP Test				

Operations Summary

24 Hour Summary
Frac stages 24,25 and 26
Update Since Report Time
rig up to perf stge 27
24 Hour Forecast
Continue perf and frac operations.

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
0:00	1.75	FRAC	FRT			0		<p>Perf stage 24 as follows.</p> <p>22:00 Handover from frac to WL.</p> <p>2300 Pick up lubricator. Remove night cap. PU tools.</p> <p>2310 Stab lubricator. Fill lubricator.</p> <p>2315 PT lubricator to 8000psi</p> <p>2320 Open well with 4500psi.</p> <p>1720 "Stage #24 Plug and Perf</p> <p>RIH with (4) 1' Keane guns: 2.75" OD HSC at 6SPF with 60* phased perforating guns and Boss Hog composite ball-drop frac plug. Tie into liner top @10996'. Pump down as follows:</p> <p>3bpm @ 4374psi11600</p> <p>6bpm @ 4730psi11700</p> <p>10bpm @ 5185psi11800</p> <p>bpm @ psi</p> <p>bpm @ psi</p> <p>10bpm @ 6037psi</p> <p>Set plug @ 16859ft</p> <p>Perforate as follows:</p> <p>16834' - 16835'</p> <p>16789' - 16790'</p> <p>16744' - 16745'</p> <p>16699' - 16700'</p> <p>Stabilized pressure after perf: 4815psi</p> <p>Pump down volume: 95bbl"</p> <p>2114 POOH</p> <p>0 Shut in well with 4450psi. Bleed off.</p> <p>16 Break lubricator. All shots fired. Drop ball. MU night cap. LD tools and lub. Secure crown and wing valves.</p> <p>20 Handover from WL to frac.</p>
1:45	2.25	FRAC	FRT			0		<p>Frac stage 24</p> <p>Stage 24 Summary University 19 PW Unit 1404H</p> <p>Interval 16699 - 16835</p> <p>Open Well Pressure 4,183 psi</p> <p>Max Treating Pressure 9,275 psi</p> <p>Max Slurry Rate 60.5 bpm</p> <p>Average Treating Pressure 8,418 psi</p> <p>Average Slurry Rate 53.4 bpm</p> <p>Breakdown Pressure 7,147 psi</p> <p>Breakdown Rate 8.0 bpm</p> <p>Breakdown Volume 294 gal</p> <p>Avg HHP 11,018 hp</p> <p>Final ISIP 5,014 psi</p> <p>Frac Gradient 0.864 psi/ft</p> <p>Pad Volume 1,050 gal</p> <p>Main Body Volume 167,244 gal</p> <p>Flush Volume 27,258 gal</p> <p>100 MAZ Sand Pumped 0 lbs</p> <p>100 M Brown Sand Pumped 95,780 lbs</p> <p>100 M Sand Pumped 327,240 lbs</p> <p>Proppant in Formation 423,020 lbs</p> <p>Avg Proppant Concentration 3.22 lb/gal</p> <p>Max Proppant Concentration 4.00 lb/gal</p> <p>Load to Recover (incl. pumpdown) 4,077 bbls</p> <p>Load to Recover w/o Acid 4,077 bbls</p> <p>15% HCL Spearhead 0 gal</p> <p>Slickwater Fluid Pumped 3,902 bbls</p> <p>20# Linear Fluid Pumped 80 bbls</p> <p>20# Crosslink Fluid Pumped 0 bbls</p> <p>Pump down volume 95 bbls</p> <p>pump down rate 10.0 bpm</p> <p>Max pump down pressure 6,037 psi</p> <p>Fluid Temp 72.0 ?F</p> <p>Total Pump Time 1:28 hr:min</p> <p>Pumps Lost During Job 0</p> <p>Treatment Start Time 2:31 0:00 0:00</p>

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Treatment End Time 3:59 0:00 0:00 Diverter Slurry bbls -Proppant was pumped as a ramp from 0.50 PPA to 3.0 PPA, then a 3.0 PPA, 3.5 PPA step and a 4.0 PPA step. - Ran two 40 bbl shots of gel with a 20 bbl spacer. - Ran NO 15% HCl this stage - This stage utilized a ball in seat plug. Time for Prop on Perfs 19.0 minutes Time between Stages (TBF) 1:08 Hours/min
4:00	2.00	FRAC	WLT			0		WL Start perf University 1404H Stage 25 Tie into liner top at 10966 ft Initial WHP 4600 psi Pumpdown Pressures 3bpm 4445 6bpm 5055 psi 9bpm 5315 psi 9bpm 5733 psi 9bpm psi Max Pressure 6128 psi Total Fluid to recover 94 bbls Plug set @ 16679 Boss Hog Composite Frac Plug/ Ball in place plug Plug OD 3.65 in Pre-set Tension 2084 lbs Post-set Tension 1690 lbs Pre-Perf Pressure 5300 psi Perforation Summary: (4 count) 1' Keane Guns: 2.75" OD HSC at 6 spf @ 60 deg phasing 16654' - 16655' 6 shots 16513' - 16514' 6 shots Down 4' 16567' - 16568' 6 shots Down 3' 16519' - 16520' 6 shots Post-Perf Pressure 4950 psi WL POOH 6:00
6:00	1.57	FRAC	WLF			0		POOH with Wireline. Bump up. Grease UM valve. Shut in well with 4265 psi. Bleed off. Break lubricator. All shots fired. MU night cap. Secure crown and wing valves. Grease Crwn valve Handover from WL to frac. Wait on other pad ops. Prime and pressure test frac.
7:34	0.38	FRAC	FRT			0		Frac stage , Shut down pumping Chemical pump pumping
7:57	1.05	FRAC	FRT			1		Swap out Chemical pups & bucket test
9:00	1.50	FRAC	FRT			0		Continue with Frac Stage 25 Summary University 19 PW Unit 1404H Interval 16519 - 16655 Open Well Pressure 4,284 psi Max Treating Pressure 9,224 psi Max Slurry Rate 61.2 bpm Average Treating Pressure 8,455 psi Average Slurry Rate 53.6 bpm Breakdown Pressure 8,549 psi Breakdown Rate 13.2 bpm Breakdown Volume 420 gal Avg HHP 11,108 hp Final ISIP 5,332 psi Frac Gradient 0.891 psi/ft

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Pad Volume 3,906 gal Main Body Volume 200,172 gal Flush Volume 48,174 gal 100 MAZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 381,280 lbs 100 M Sand Pumped 45,580 lbs Proppant in Formation 426,860 lbs Avg Proppant Concentration 3.06 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover (incl. pumpdown) 4,860 bbls Load to Recover w/o Acid 4,860 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 4,686 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 94 bbls pump down rate 10.0 bpm Max pump down pressure 6,128 psi Fluid Temp 72.0 ?F Total Pump Time 2:04 hr:min Pumps Lost During Job 1 Treatment Start Time 7:33 9:00 0:00 Treatment End Time 7:57 10:40 0:00 Diverter Slurry bbls -Proppant was pumped as a ramp from 0.50 PPA to 3.0 PPA, then a 3.0 PPA, 3.5 PPA step and a 4.0 PPA step. - Ran two 40 bbl shots of gel with a 20 bbl spacer. - Ran NO 15% HCl this stage - This stage utilized a ball in seat plug. - We had some problems with the bio pump at 7:40 so we went to flush and tried to fix it but were unsuccessful so we came out of the well at 7:57. - when fixing the bio pump we ran an extra 9 gallons which will be 100% discounted Time for Prop on Perfs 12.0 minutes Time between Stages (TBF) 0:48 Hours/min
10:30	3.27	FRAC	FWL			1		Shut in well w/ 5045 psi. Handover from Frac to WL. Wait on other pad ops. Waiting on weather
13:46	0.23	FRAC	FWL			0		Remove night cap. PU tools. Stab lubricator. Fill lubricator. Pressure test lubricator to 8000 psi. Good test
14:00	2.33	FRAC	WLT			0		WL Start perf University 1404H Stage 26 Tie into liner top at 10966 ft Initial WHP 4400 psi Pumpdown Pressures 3bpm 5000 6bpm 5300 psi 9bpm 5800 psi 9bpm psi 9bpm psi Max Pressure 6112 psi Total Fluid to recover 93 bbls Plug set @ 16499 Boss Hog Composite Frac Plug/ Ball in place plug Plug OD 3.65 in Pre-set Tension 2000 lbs Post-set Tension 1600 lbs Pre-Perf Pressure 5049 psi Perforation Summary: (4 count) 1' Keane Guns: 2.75" OD HSC at 6 spf @ 60 deg phasing

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								16474' - 16475' 6 shots 16429' - 16430' 6 shots 16384' - 16385' 6 shots 16339' - 16340' 6 shots Post-Perf Pressure 5021 psi WL POOH 14:58 POOH with Wireline. Bump up. Grease UM valve. Shut in well with xxxx psi. Bleed off. Break lubricator. All shots fired. MU night cap. Secure crown and wing valves. Grease LM/UM valve Handover from WL to frac. Wait on other pad ops.
16:20	4.92	FRAC	WLF			1		NPT Change out blender calibrate and prepare to frac stage 26.
21:15	1.75	FRAC	WLF			0		Open well 4206 psi., Frac stage 26 Stage 26 Summary University 19 PW Unit 1404H Interval 16339 - 16475 Open Well Pressure 4,206 psi Max Treating Pressure 9,382 psi Max Slurry Rate 57.7 bpm Average Treating Pressure 8,421 psi Average Slurry Rate 44.7 bpm Breakdown Pressure 8,419 psi Breakdown Rate 31.2 bpm Breakdown Volume 20,160 gal Avg HHP 9,226 hp Final ISIP 5,297 psi Frac Gradient 0.888 psi/ft Pad Volume 4,956 gal Main Body Volume 198,618 gal Flush Volume 26,880 gal 100 M AZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 191,180 lbs 100 M Sand Pumped 234,280 lbs Proppant in Formation 425,460 lbs Avg Proppant Concentration 3.03 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover (incl. pumpdown) 4,822 bbls Load to Recover w/o Acid 4,822 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 4,649 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 93 bbls pump down rate 9.0 bpm Max pump down pressure 6,500 psi Fluid Temp 72.0 ?F Total Pump Time 2:27 hr:min Pumps Lost During Job 0 Treatment Start Time 17:25 21:17 0:00 Treatment End Time 18:09 23:00 0:00 Diverter Slurry bbls -Proppant was pumped as a ramp from 0.50 PPA to 4.0 PPA, then a 4.0 PPA step. - Ran two 40 bbl shots of gel with a 20 bbl spacer. - Ran NO 15% HCl this stage - This stage utilized a ball in seat plug. -We started pumping the stage using the Freemyer back up blender but were unsuccessful. After pumping bbls, we shut down and swapped out the primary blender before restarting the stage. Time for Prop on Perfs 23.0 minutes Time between Stages (TBF) 3:08 Hours/min
23:00	1.00	FRAC	WLF			0		Pickup lubricator, set on well and pressure test to 8000 psi., open well 23:50 with 4200 psi/. on well RIH

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Total 24.00

06.00 Update

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Description
0:00	2.50	FRAC	WLF			0	Perf stage 27 23:00 Handover from frac to WL. 2330 Pick up lubricator. Remove night cap. PU tools. 2340 Stab lubricator. Fill lubricator. 2345 PT lubricator to 8000psi 2350 Open well with 4200psi. 1720 "Stage #27 Plug and Perf RIH with (4) 1' Keane guns: 2.75" OD HSC at 6SPF with 60* phased perforating guns and Boss Hog composite ball-drop frac plug. Tie into liner top @10966'. Pump down as follows: 3bpm @ 4315psi11600 6bpm @ 4778psi11700 9bpm @ 5453psi11800 10bpm @ 5897psi12300 bpm @ psi 10bpm @ 6079psi Set plug @ 16319ft Perforate as follows: 16294' - 16295' 16249' - 16250' 16204' - 16205' 16159' - 16160' Stabilized pressure after perf: 5100psi Pump down volume: 99bbl" 00:53 POOH 0140 Shut in well with 4800 psi. Bleed off. 0145 Break lubricator. All shots fired. Drop ball. MU night cap. LD tools and lub. Secure crown and wing valves. 0230 Handover from WL to frac.
2:30		FRAC	WLF			0	Frac stage 27

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
11/18/2017 07:57	KEANE FRAC TX LLC	Stimulation		FRT	EN	Frac Pump	1.05	1.05	1	OPEN
Description: Chemical pump unable to raed out amount of chemicals pumped., swap out pumps						Title: Chemical pump				
11/18/2017 10:30	SHELL	Wait On Weather		FWL	N		1.63	3.27	1	OPEN
Description: Highwinds						Title: waiting on weather				
11/18/2017 16:20	KEANE FRAC TX LLC	Stimulation		WLF	EN	Frac Blender	4.92	4.92	1	OPEN
Description: Blender failed , not able to maintain densometer readings.						Title: Blender failure				
Total							7.60	9.23		