

EP WELLS DAILY OPERATIONS REPORT

Report 18

11/21/2017

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	18.00
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/%)	1.92/7.99	Last Casing MD	
Days Ahd(-) Bhnd(+)(50/50)		Next Casing MD	
Actual cost to date/AFE	2,958,502/5,029,301.00	Current MW / BH EMW(ppg)	/
Actual divided by AFE	0.59	LOT/FIT EMW(ppg)	
Daily Cost	289,012	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
 10 safework permits
 72 EE's

HSE Drills

Drills/Tests	Date	Days Since Last	JSA's/Toolbox Talks	Days Since Last Drill
Last Derrick Inspection				14
Last BOP function test				17
Last BOP Test				
Next BOP Test				

Operations Summary

24 Hour Summary
 continue perf and frac operations. 38 stages complete
 Update Since Report Time
 perf. stage 39
 24 Hour Forecast
 continue perf and frac operations.

EP WELLS DAILY OPERATIONS REPORT

Report 18

11/21/2017

Well UNIVERSITY 19 PW UNIT 1404H
Wellbore UNIVERSITY 19 PW UNIT 1404H

Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
0:00	1.58	FRAC	WLT			0		Frac stage 34 open well 4619 psi. Stage 34 Summary University 19 PW Unit 1404H Interval 14923 - 15035 Open Well Pressure 4,619 psi Max Treating Pressure 9,240 psi Max Slurry Rate 60.3 bpm Average Treating Pressure 8,108 psi Average Slurry Rate 55.3 bpm Breakdown Pressure 5,964 psi Breakdown Rate 7.0 bpm Breakdown Volume 252 gal Avg HHP 10,990 hp Final ISIP 5,281 psi Frac Gradient 0.887 psi/ft Pad Volume 1,680 gal Main Body Volume 154,896 gal Flush Volume 26,208 gal 100 MAZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 0 lbs 100 M Sand Pumped 420,980 lbs Proppant in Formation 420,980 lbs Avg Proppant Concentration 3.51 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover (incl. pumpdown) 3,760 bbls Load to Recover w/o Acid 3,760 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 3,608 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 72 bbls pump down rate 9.0 bpm Max pump down pressure 6,590 psi Fluid Temp 72.0 ?F Total Pump Time 1:17 hr:min Pumps Lost During Job 0 Treatment Start Time 0:14 0:00 0:00 Treatment End Time 1:31 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, 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 14.0 minutes Time between Stages (TBF) 0:59 Hours/min
1:35	2.50	FRAC	WLT			0		Perf. stage 35 opening press. 4900 psi. 3:45 Handover from frac to WL. 4:05 Pick up lubricator. Remove night cap. PU tools. 4:15 Stab lubricator. Fill lubricator. 4:20 PT lubricator to 8000psi 0:00 Open well with 4900psi. 0:00 "Stage #35 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 @ 4253psi11600 6bpm @ 4614psi11700 9bpm @ 5265psi11800 10bpm @ 5629psi bpm @ psi 10bpm @ 5565psi

EP WELLS DAILY OPERATIONS REPORT

Report 18

11/21/2017

Well UNIVERSITY 19 PW UNIT 1404H
Wellbore UNIVERSITY 19 PW UNIT 1404H

Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Set plug @ 14899ft Perforate as follows: 14878' - 14879' 14833' - 14834' 14788' - 14789' 14743' - 14744' Stabilized pressure after perf: 4748psi Pump down volume: 59bbl" 2114 POOH 0 Shut in well with 4650psi. Bleed off. 16 Break lubricator. All shots fired. Drop ball. MU night cap. LD tools and lub. Secure crown and wing valves. 20 Handover from WL to frac.
4:05	1.85	FRAC	WLF			0		Wait on sand and change out 2 pumps. Frac stage 35 opening press.
5:56	1.65	FRAC	FRT			0		Prime and pressure test frac. Stage 35 Summary University 19 PW Unit 1404H Interval 14743 - 14879 Open Well Pressure 4,386 psi Max Treating Pressure 9,255 psi Max Slurry Rate 61.9 bpm Average Treating Pressure 8,162 psi Average Slurry Rate 55.5 bpm Breakdown Pressure 7,895 psi Breakdown Rate 11.3 bpm Breakdown Volume 462 gal Avg HHP 11,103 hp Final ISIP 5,358 psi Frac Gradient 0.893 psi/ft Pad Volume 1,050 gal Main Body Volume 157,416 gal Flush Volume 25,998 gal 100 MAZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 9,000 lbs 100 M Sand Pumped 411,200 lbs Proppant in Formation 420,200 lbs Avg Proppant Concentration 3.38 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover (incl. pumpdown) 3,807 bbls Load to Recover w/o Acid 3,807 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 3,668 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 59 bbls pump down rate 10.0 bpm Max pump down pressure 5,565 psi Fluid Temp 72.0 ?F Total Pump Time 1:18 hr:min Pumps Lost During Job 0 Treatment Start Time 5:55 0:00 0:00 Treatment End Time 7:13 0:00 0:00 Diverter Slurry bbls -Proppant was pumped as a ramp from 0.50 PPA to 3.5 PPA then a 3.5 PPA, 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 13.0 minutes Time between Stages (TBF) 2:04 Hours/min Shut in well w/ 5346 psi. Handover from Frac to WL. Wait on other pad ops. Remove night cap. PU tools. Stab lubricator. Fill lubricator. Pressure test lubricator to 8000 psi. Good test
7:35	1.82	FRAC	WLT			0		WL Start perf University 1404H Stage 36 Tie into liner top at 10966 ft Initial WHP 4900 psi

EP WELLS DAILY OPERATIONS REPORT

Report 18

11/21/2017

Well UNIVERSITY 19 PW UNIT 1404H
Wellbore UNIVERSITY 19 PW UNIT 1404H

Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Pumpdown Pressures 3bpm 4200 6bpm 4500 psi 9bpm 4800 psi 9bpm psi 9bpm psi Max Pressure 5300 psi Total Fluid to recover 55 bbls Plug set @ 14699 Boss Hog Composite Frac Plug/ Ball in place plug Plug OD 3.65 in Pre-set Tension 1810 lbs Post-set Tension 1360 lbs Pre-Perf Pressure 4700 psi Perforation Summary: (4 count) 1' Keane Guns: 2.75" OD HSC at 6 spf @ 60 deg phasing 14680' - 14681' 6 shots Plus 18' 14653' - 14654' 6 shots 14608' - 14609' 6 shots 14563' - 14564' 6 shots Post-Perf Pressure 4650 psi WL POOH 0:00 Bump up. Grease UM valve. Shut in well with 4600 psi. Bleed off. Break lubricator. All shots fired. MU night cap. Secure crown and wing valves. Handover from WL to frac. Wait on other pad ops.
9:24	0.77	FRAC	FWL			0		Prime and pressure test frac.
10:10	1.75	FRAC	FRT			0		Stage 36 Summary University 19 PW Unit 1404H Interval 14563 - 14699 Open Well Pressure 4,299 psi Max Treating Pressure 9,273 psi Max Slurry Rate 61.2 bpm Average Treating Pressure 7,891 psi Average Slurry Rate 57.7 bpm Breakdown Pressure 7,290 psi Breakdown Rate 11.8 bpm Breakdown Volume 294 gal Avg HHP 11,160 hp Final ISIP 5,472 psi Frac Gradient 0.903 psi/ft Pad Volume 2,100 gal Main Body Volume 164,010 gal Flush Volume 25,746 gal 100 MAZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 9,000 lbs 100 M Sand Pumped 411,320 lbs Proppant in Formation 420,320 lbs Avg Proppant Concentration 3.23 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover (incl. pumpdown) 3,960 bbls Load to Recover w/o Acid 3,960 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 3,825 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 55 bbls pump down rate 9.0 bpm Max pump down pressure 5,300 psi

EP WELLS DAILY OPERATIONS REPORT

Report 18

11/21/2017

Well UNIVERSITY 19 PW UNIT 1404H
 Wellbore UNIVERSITY 19 PW UNIT 1404H

Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Fluid Temp 72.0 ?F Total Pump Time 1:15 hr:min Pumps Lost During Job 0 Treatment Start Time 10:10 0:00 0:00 Treatment End Time 11:25 0:00 0:00 Diverter Slurry bbls -Proppant was pumped as a ramp from 0.50 PPA to 3.5 PPA then a 3.5 PPA, 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 14.0 minutes Time between Stages (TBF) 2:58 Hours/min Shut in well w/ 5276 psi. Handover from Frac to WL. Wait on other pad ops. Remove night cap. PU tools. Stab lubricator. Fill lubricator. Pressure test lubricator to 8000 psi. Good test
11:55	1.85	FRAC	WLT			0		WL Start perf University 1404H Stage 37 Tie into liner top at 10966 ft Initial WHP 4700 psi Pumpdown Pressures 3bpm 4000 6bpm 4500 psi 9bpm 4800 psi 9bpm psi 9bpm psi Max Pressure 5400 psi Total Fluid to recover 52 bbls Plug set @ 14540 PLUG 21' Boss Hog Composite Frac Plug/ Ball in place plug Plug OD 3.65 in Pre-set Tension 1600 lbs Post-set Tension 1360 lbs Pre-Perf Pressure 4700 psi Perforation Summary: (4 count) 1' Keane Guns: 2.75" OD HSC at 6 spf @ 60 deg phasing 14518' - 14519' 6 shots 14473' - 14474' 6 shots 14428' - 14429' 6 shots 14383' - 14384' 6 shots Post-Perf Pressure 4700 psi WL POOH 12:46 Bump up. Grease UM/LM valve. Shut in well with 4350 psi. Bleed off. Break lubricator. All shots fired. MU night cap. Secure crown and wing valves Handover from WL to frac. Wait on other pad ops.
13:46	0.27	FRAC	WLF			0		Prime and pressure test frac.
14:02	1.78	FRAC	FRT			0		Stage 37 Summary University 19 PW Unit 1404H Interval 14383 - 14519 Open Well Pressure 4,441 psi Max Treating Pressure 9,210 psi Max Slurry Rate 60.1 bpm Average Treating Pressure 8,619 psi Average Slurry Rate 55.2 bpm

EP WELLS DAILY OPERATIONS REPORT

Report 18

11/21/2017

Well UNIVERSITY 19 PW UNIT 1404H
 Wellbore UNIVERSITY 19 PW UNIT 1404H

Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Breakdown Pressure 8,073 psi Breakdown Rate 14.6 bpm Breakdown Volume 924 gal Avg HHP 11,661 hp Final ISIP 5,175 psi Frac Gradient 0.878 psi/ft Pad Volume 21,714 gal Main Body Volume 183,834 gal Flush Volume 25,830 gal 100 MAZ Sand Pumped 386,780 lbs 100 M Brown Sand Pumped 0 lbs 100 M Sand Pumped 34,000 lbs Proppant in Formation 420,780 lbs Avg Proppant Concentration 3.28 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover (incl. pumpdown) 4,429 bbls Load to Recover w/o Acid 4,429 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 4,297 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 52 bbls pump down rate 9.0 bpm Max pump down pressure 5,400 psi Fluid Temp 72.0 ?F Total Pump Time 1:46 hr:min Pumps Lost During Job 2 Treatment Start Time 14:02 0:00 0:00 Treatment End Time 15:48 0:00 0:00 Diverter Slurry bbls -Proppant was pumped as a ramp from 0.50 PPA to 3.5 PPA then a 3.5 PPA, 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. - Had to stop pumping at 14:18 due to blender problems but then resumed pumping at 14:25 - lost pump 10074 and 10078 due to mechanical issues Time for Prop on Perfs 12.0 minutes Time between Stages (TBF) 1:37 Hours/min Shut in well w/5015 psi. Handover from Frac to WL. Wait on other pad ops.
15:49	2.18	FRAC	FWL			0		Waiting on weather (high winds)
18:00	1.75	FRAC	FWL			0		Perf stage 38 1600 Handover from frac to WL. 1800 Pick up lubricator. Remove night cap. PU tools. 1805 Stab lubricator. Fill lubricator. 1810 PT lubricator to 8000psi 1810 Open well with 4550psi. 1850 "Stage #35 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 @ 4029psi11600 6bpm @ 4315psi11700 9bpm @ 4789psi11800 10bpm @ 5249psi bpm @ psi 10bpm @ 5475psi Set plug @ 14354ft Perforate as follows: 14333' - 14334' 14290' - 14291' 14248' - 14249'

EP WELLS DAILY OPERATIONS REPORT

Well UNIVERSITY 19 PW UNIT 1404H
 Wellbore UNIVERSITY 19 PW UNIT 1404H

Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								14205' - 14206' Stabilized pressure after perf: 4353psi Pump down volume: 52bbl" 1855 POOH 0 Shut in well with 4500psi. Bleed off. 1930 Break lubricator. All shots fired. Drop ball. MU night cap. LD tools and lub. Secure crown and wing valves. 1945 Handover from WL to frac.
19:45	2.33	FRAC	FWL			0		Prime up and test lines. frac stage 38 Stage 38 Summary University 19 PW Unit 1404H Interval 14203 - 14339 Open Well Pressure 4,275 psi Max Treating Pressure 9,329 psi Max Slurry Rate 61.5 bpm Average Treating Pressure 8,715 psi Average Slurry Rate 46.5 bpm Breakdown Pressure 7,899 psi Breakdown Rate 8.0 bpm Breakdown Volume 252 gal Avg HHP 9,933 hp Final ISIP 5,466 psi Frac Gradient 0.903 psi/ft Pad Volume 1,470 gal Main Body Volume 161,574 gal Flush Volume 27,720 gal 100 M AZ Sand Pumped 420,100 lbs 100 M Brown Sand Pumped 0 lbs 100 M Sand Pumped 0 lbs Proppant in Formation 420,100 lbs Avg Proppant Concentration 3.32 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover (incl. pumpdown) 3,899 bbls Load to Recover w/o Acid 3,899 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 3,767 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 52 bbls pump down rate 9.0 bpm Max pump down pressure 5,400 psi Fluid Temp 72.0 ?F Total Pump Time 1:53 hr:min Pumps Lost During Job 0 Treatment Start Time 20:13 0:00 0:00 Treatment End Time 22:06 0:00 0:00 Diverter Slurry bbls -Proppant was pumped as a ramp from 0.50 PPA to 3.5 PPA then a 3.5 PPA, 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. -5 Bbls into the stage we shut down. We were unable to read blender discharge rate, the problem was corrected and operations resumed. Time for Prop on Perfs 18.0 minutes Time between Stages (TBF) 4:40 Hours/min
22:05	1.92	FRAC	FWL			1		Handover to wireline, stage 39 perfs.RIH to 300' check guns, short pull out, lay down guns and check out. prepare to pickup, and truck requires regenerated .
Total	24.00							

EP WELLS DAILY OPERATIONS REPORT

Report 18

11/21/2017

Well UNIVERSITY 19 PW UNIT 1404H
 Wellbore UNIVERSITY 19 PW UNIT 1404H

06.00 Update

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Description
0:00	1.25	FRAC	FWL			0	Allow wireline truck to regen.
1:15	1.92	FRAC	FWL			0	Pickup and set on well press. test and open well 4500 psi. perf. stage 39 22:10 Handover from frac to WL. 22:10 Pick up lubricator. Remove night cap. PU tools. 22:15 Stab lubricator. Fill lubricator. 22:20 PT lubricator to 8000psi 22:30 Open well with 4550psi. 02:00 "Stage #35 Plug and Perf had to pull out short, regen truck 3 hours down 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 @ 3966psi11600 6bpm @ 4224psi11700 9bpm @ 4958psi11800 10bpm @ 6143psi bpm @ psi 10bpm @ 6755psi Set plug @ 14169ft Perforate as follows: 14158' - 14159' 14113' - 14114' 14068' - 14069' 14023' - 14024' Stabilized pressure after perf: 5045psi Pump down volume: 52bbl" 02:20 POOH 03:00 Shut in well with 4500psi. Bleed off. 03:05 Break lubricator. All shots fired. Drop ball. MU night cap. LD tools and lub. Secure crown and wing valves. 03:10 Handover from WL to frac.
3:10		FRAC	FWL			0	prime up and pressure test lines 9500 psi. Frac stage 39 open w/ 4254 psi. on well