

## EP WELLS DAILY OPERATIONS REPORT

Report 14

08/17/2017

Company	PERMIAN
Well Type	Development
Well	UNIVERSITY 19 PW UNIT 1404H
Wellbore	UNIVERSITY 19 PW UNIT 1404H
WBS No/API No	30265150 / 4230133215.00

## Event Summary

Event Type	Drilling only	Event Start Date	06/16/2017	Days on Location	13.92
Objective	Drill - Wolfcamp B1 Shale	Original Spud Date	06/17/2017	Days Since Spud	11.58
Est. Days	22.00	Contractor	ENSIGN		
Work Unit	ENSIGN 775	Days To Release			
		Rig Phone/FAX No.			

## Well Status

Supervisor	STEVE SLOOP	Measured Depth(ft)	14,550.00
Engineer	BRANDON FOOTE	TVD(ft)	11,639.51
Other Supervisor	JOHNNIE BRASSELL	24 Hr Progress(ft)	1,362.00
Depth Ref/Grd Elev/Water Depth(ft)	DFE: 2,800.10 / 2,772.10	Hole size(in)	6.125
THF Datum			
Daily NPT(hr/%)	0.50/2.08	Last Casing MD	7.000in@11,969.00ft
Days Ahd(-) Bhnd(+)(50/50)		Next Casing MD	4.500in@21,085.00ft
Actual cost to date/AFE	1,438,170/2,770,860.00	Current MW / BH EMW(ppg)	13.50/
Actual divided by AFE	0.52	LOT/FIT EMW(ppg)	
Daily Cost	65,850	Lithology	
		Formation/MD Top	

## HSE Summary

Last Incident	Date	Days	Last Incident	Date	Days	KPI's	
LWC RWC MTC FAC Last casing pressure test	06/19/2017		PSI NII HPI <b>GOAL ZERO DAYS</b> <b>PS BARRIER EVENT</b> <b>PS barrier bowtie review</b>	09/29/2015	688	TRCF LWCF Safety Cards - Safe Safety Card - Unsafe SSE% Last casing pressure(psi)	0 10 13 1500
Safety Comments:							

## Drills

Drill Category	Drill Type	Detection (sec)	Complete (sec)	Crew drilled	Pass / Fail	PIC	Comments
Well Control Crew	On-Bottom	15.00	60.00	Night	Pass	J.BRASSELL	PIT LOSS, TRANSFER

## HSE Drills

Drills/Tests	Date	Days Since Last		
Last Derrick Inspection	08/15/2017	2	JSA's/Toolbox Talks	6
Last BOP function test	08/07/2017	10	Days Since Last Drill	14
Last BOP Test	08/28/2017			
Next BOP Test				

## Operations Summary

24 Hour Summary
DRLG & SLIDE F/ 13188' T/ 13853', PUMP CLEAN UP CYCLE, DRLG & SLIDE F/ 13853' T/ 14372', SHUT DOWN FOR WAETHER (LIGHTING), DRLG & SLIDE F/ 14372' T/ 14550'
Update Since Report Time
SLIDE @ 14723'
24 Hour Forecast

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DRLG AS PER PLAN EST TD +/- 21,085'

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## Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
0:00	0.50	MNH1	DRL		13,205.00	0		ROTARY DRILL F/13188' T/13205' (17' @ 34 FPH) WOB: 25K RPM: SURF 90 MOTOR 252 BIT 342 PSI & FLOW: SPP 5900 GPM 311 DIFF 700-1000 STRING WT: P/U 200 S/O 175 ROT 185 TORQUE: ON BTM 8-10K OFF BTM 4-5K MW: 13.4 PPG MOTOR: .81 REV/GAL GAS: BG 500 CG 4000
0:30	0.50	MNH1	DRL		13,218.00	0		SLIDE DRILL F/13205' T/13218' (13' @ 26 FPH) WOB: 15K RPM: SURF MOTOR 252 BIT 252 PSI & FLOW: SPP 5900 GPM 311 DIFF 150-250 STRING WT: P/U 200 S/O 175 ROT TORQUE: ON BTM OFF BTM MW: 13.4 PPG MOTOR: .81 REV/GAL GAS: BG 500 CG 4000
1:00	2.00	MNH1	DRL		13,394.00	0		ROTARY DRILL F/13218' T/13394' (176' @ 88 FPH) WOB: 25K RPM: SURF 90 MOTOR 252 BIT 342 PSI & FLOW: SPP 5900 GPM 311 DIFF 700-1000 STRING WT: P/U 200 S/O 175 ROT 185 TORQUE: ON BTM 8-10K OFF BTM 4-5K MW: 13.4 PPG MOTOR: .81 REV/GAL GAS: BG 500 CG 4000
3:00	1.50	MNH1	DRL		13,412.00	0		SLIDE DRILL F/13394' T/13412' (18' @ 12 FPH) WOB: 15K RPM: SURF MOTOR 252 BIT 252 PSI & FLOW: SPP 5900 GPM 311 DIFF 150-250 STRING WT: P/U 200 S/O 175 ROT TORQUE: ON BTM OFF BTM MW: 13.4 PPG MOTOR: .81 REV/GAL GAS: BG 500 CG 4000
4:30	3.00	MNH1	DRL		13,678.00	0		ROTARY DRILL F/13412' T/13678' ( 266' @ 88 FPH) WOB: 25K RPM: SURF 80 MOTOR 243 BIT 323 PSI & FLOW: SPP 5875 GPM 300 DIFF 800 STRING WT: P/U 210 S/O 175 ROT 190 TORQUE: ON BTM 8-10K OFF BTM 4-5K MW: 13.4 PPG MOTOR: .81 REV/GAL GAS: BG 500 CG 4000
7:30	1.00	MNH1	DRL		13,703.00	0		SLIDE DRILL F/13678' T/13703' ( 25' @ 25 FPH) WOB: 15K RPM: SURF 0 MOTOR 243 BIT 243 PSI & FLOW: SPP 5875 GPM 300 DIFF 250-300 STRING WT: P/U 210 S/O 170 ROT TORQUE: ON BTM OFF BTM MW: 13.4 PPG MOTOR: .81 REV/GAL GAS: BG 500 CG 4000
8:30	1.00	MNH1	DRL		13,773.00	0		ROTARY DRILL F/13703' T/13773' ( 70' @ 70 FPH) WOB: 25K RPM: SURF 80 MOTOR 243 BIT 323 PSI & FLOW: SPP 5875 GPM 300 DIFF 800 STRING WT: P/U 210 S/O 170 ROT 190 TORQUE: ON BTM 8-10K OFF BTM 4-5K MW: 13.4 PPG MOTOR: .81 REV/GAL GAS: BG 500 CG 4000
9:30	1.50	MNH1	DRL		13,803.00	0		SLIDE DRILL F/13773' T/13803' ( 30' @ 20 FPH) WOB: 15K RPM: SURF 0 MOTOR 243 BIT 243 PSI & FLOW: SPP 5875 GPM 300 DIFF 250-300

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## Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								STRING WT: P/U 210 S/O 170 ROT TORQUE: ON BTM OFF BTM MW: 13.4 PPG MOTOR: .81 REV/GAL GAS: BG 500 CG 4000
11:00	1.00	MNH1	DRL		13,853.00	0		ROTARY DRILL F/13803' T/13853' ( 50' @ 50 FPH) WOB: 25K RPM: SURF 80 MOTOR 243 BIT 323 PSI & FLOW: SPP 5875 GPM 300 DIFF 800 STRING WT: P/U 210 S/O 170 ROT 190 TORQUE: ON BTM 8-10K OFF BTM 4-5K MW: 13.4 PPG MOTOR: .81 REV/GAL GAS: BG 500 CG 4000
12:00	0.50	MNH1	CDM		13,853.00	0		PUMP CLEAN UP CYCLE
12:30	0.50	MNH1	DRL		13,863.00	0		ROTARY DRILL F/13853' T/13863' ( 10' @ 20 FPH) WOB: 25K RPM: SURF 80 MOTOR 243 BIT 323 PSI & FLOW: SPP 5875 GPM 300 DIFF 800 STRING WT: P/U 210 S/O 170 ROT 190 TORQUE: ON BTM 8-10K OFF BTM 4-5K MW: 13.4 PPG MOTOR: .81 REV/GAL GAS: BG 500 CG 4000
13:00	3.00	MNH1	DRL		13,908.00	0		SLIDE DRILL F/13863' T/13908' ( 45' @ 15 FPH) WOB: 15K RPM: SURF 0 MOTOR 230 BIT 230 PSI & FLOW: SPP 5875 GPM 285 DIFF 300-500 STRING WT: P/U 210 S/O 170 ROT TORQUE: ON BTM OFF BTM MW: 13.4 PPG MOTOR: .81 REV/GAL GAS: BG 500 CG 4000
16:00	4.50	MNH1	DRL		14,372.00	0		ROTARY DRILL F/13908' T/14372' ( 464' @ 103 FPH) WOB: 10K RPM: SURF 80 MOTOR 248 BIT 328 PSI & FLOW: SPP 5750 GPM 307 DIFF 850-950 STRING WT: P/U 210 S/O 170 ROT 190 TORQUE: ON BTM 8-10K OFF BTM 4-5K MW: 13.4 PPG MOTOR: .81 REV/GAL GAS: BG 500 CG 4000
20:30	0.50	MNH1	CDM		14,372.00	1		NPT: SHUT DOWN DUE TO WEATHER ( LIGHTING )
21:00	1.50	MNH1	DRL		14,531.00	0		ROTARY DRILL F/14372' T/14531' ( 159' @ 106 FPH) WOB: 10K RPM: SURF 80 MOTOR 248 BIT 328 PSI & FLOW: SPP 5750 GPM 307 DIFF 850-950 STRING WT: P/U 210 S/O 170 ROT 190 TORQUE: ON BTM 8-10K OFF BTM 4-5K MW: 13.4 PPG MOTOR: .81 REV/GAL GAS: BG 500 CG 4000
22:30	1.50	MNH1	DRL		14,550.00	0		SLIDE DRILL F/14531' T/14550' ( 19' @ 13 FPH) WOB: 15K RPM: SURF 0 MOTOR 230 BIT 230 PSI & FLOW: SPP 5875 GPM 285 DIFF 300-500 STRING WT: P/U 210 S/O 170 ROT TORQUE: ON BTM OFF BTM MW: 13.4 PPG MOTOR: .81 REV/GAL GAS: BG 500 CG 4000
<b>Total</b>	<b>24.00</b>							

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## 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
08/17/2017 20:30	SHELL	Wait On Weather	14,372.00	CDM	N		0.50	0.50		OPEN
Description: SHUT DOWN DUE TO WEATHER ( LIGHTING )						Title: SHUT DOWN DUE TO WEATHER ( LIGHTING )				
Total							0.50	0.50		

## Deepest 5 Surveys

MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	E/W (ft)	V.Sec (ft)	DLeg (°/100ft)	Tool
14,078.00	90.70	160.05	11,638.75	-2,457.18	461.76	2,498.85	1.11	PTW MWD+HDGM_2016
14,172.00	90.72	160.84	11,637.59	-2,545.75	493.22	2,592.13	0.84	PTW MWD+HDGM_2016
14,268.00	89.81	161.13	11,637.14	-2,636.51	524.50	2,687.51	0.99	PTW MWD+HDGM_2016
14,362.00	89.52	159.82	11,637.69	-2,725.10	555.92	2,780.81	1.43	PTW MWD+HDGM_2016
14,457.00	89.50	150.99	11,638.51	-2,811.39	595.42	2,873.61	9.29	PTW MWD+HDGM_2016

## Fluid Details

Mud type	Invermul	Oil/Water (%)	55.50/17.00	POM (cc)	2.07 525.0
MD (ft)	14,513.00	TS/HGS/LGS (%)	25.80/17.20/8.60	CaCl2 (%)	
Mud Density (ppg)	13.50	Sand (%)	0.12	Caom/Clom (ppm)	
Vis (s/qt)	61.00	Oil/Water Ratio (%)	76.60/23.40	ACT	
PV/YP (cp/lbf/100ft²)	24.00/10.000			XS Lime(lbm/bbl)	
Gels 10 s/m (lbf/100ft²)	11.000/14.000	LCM (lbm/bbl)		ES (Volts)	
API/HTHP WL (cc/30min)	/14.0	ECD (ppg)	15.400	R600/300 (°)	
FC/HTHP FC (32nd")	/5.0	H2S (gas unit)		R200/100 (°)	
WPS (ppm)	232,670	KCl (%)		R6/3 (°)	
FL temp. (°F)		Ditch Magnet in Last 24hrs/Cum. (gm)			

## Gas Concentrations and Fluid Losses

Avg Connection Gas (gas unit)	Avg. trip gas (gas unit)	Losses Last 24 Hours/Cumulative...	
Max. connection gas (gas unit)	Max. trip gas (gas unit)	Surface Losses (bbl)	/0.00
Avg. background gas (gas unit)	Avg H2S Gas (gas unit)	Sub Surface Losses (bbl)	/0.00
Max. background gas (gas unit)	Max H2S Gas (gas unit)	Total Losses	0.00/0.00
		End vol. (bbl)	0.00

## Bulks Summary

Product	Quantity Onboard	Units	Daily Usage
Diesel	-5,558.00	GAL	2,329.00

## Bit Details

Bit no.	Size (in)	Manufacturer	Model no.	Class	IADC code	Serial no.	Size (32nd")	MD in (ft)	MD out (ft)	IADC Dull Grade
5	6.125	BAKER HUGHES	TD405FX			7163435	1x15, 4x16	11,983.00		-----

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## Bit Operations

MD (ft)	WOB Min/Max (kip)	Current RPM (rpm)	Flow rate (gpm)	SPP (psi)	P bit (psi)	% @ Bit	HHP (hp)	Hours (hr)	Footage (ft)	ROP (ft/hr)	Hours cum (hr)	Footage cum. (ft)	ROP cum. (ft/hr)
13,205.00	25.0/25.0	90	311.0	5,900.00	130.07	2.20	23.60	0.50	17.00	34.0	24.00	1,222.00	50.9
13,218.00	15.0/15.0	0	311.0	5,900.00	130.07	2.20	23.60	0.50	13.00	26.0	24.50	1,235.00	50.4
13,394.00	25.0/25.0	90	311.0	5,900.00	130.07	2.20	23.60	2.00	176.00	88.0	26.50	1,411.00	53.2
13,412.00	15.0/15.0	0	311.0	5,900.00	130.07	2.20	23.60	1.50	18.00	12.0	28.00	1,429.00	51.0
13,678.00	25.0/25.0	80	300.0	5,875.00	121.03	2.06	21.18	3.00	266.00	88.7	31.00	1,695.00	54.7
13,703.00	15.0/15.0	0	300.0	5,875.00	121.03	2.06	21.18	1.00	25.00	25.0	32.00	1,720.00	53.7
13,773.00	25.0/25.0	80	300.0	5,875.00	121.03	2.06	21.18	1.00	70.00	70.0	33.00	1,790.00	54.2
13,803.00	15.0/15.0	0	300.0	5,875.00	121.03	2.06	21.18	1.50	30.00	20.0	34.50	1,820.00	52.8
13,853.00	25.0/25.0	80	300.0	5,875.00	121.03	2.06	21.18	1.00	50.00	50.0	35.50	1,870.00	52.7
13,863.00	25.0/25.0	80	300.0	5,875.00	121.03	2.06	21.18	0.50	10.00	20.0	36.00	1,880.00	52.2
13,908.00	15.0/15.0	0	285.0	5,875.00	109.23	1.86	18.16	3.00	45.00	15.0	39.00	1,925.00	49.4
14,372.00	10.0/10.0	80	307.0	5,750.00	126.74	2.20	22.70	4.50	464.00	103.1	43.50	2,389.00	54.9
14,531.00	10.0/10.0	80	307.0	5,750.00	126.74	2.20	22.70	1.50	159.00	106.0	45.00	2,548.00	56.6
14,550.00	15.0/15.0	0	285.0	5,875.00	109.23	1.86	18.16	1.50	19.00	12.7	46.50	2,567.00	55.2

## Drillstring Components

Item description	# Jts	Length (ft)	OD (in)	Max OD (in)	ID (in)	Connection Name	Weight (ppf)	Grade	Serial no.
4" DP	294	9,275.43	4.000		3.340	XT-39			RIG
SHOCK SUB	1	11.14	5.000		2.750	XT-39			W1681970
(110 JTS) DRILL PIPE	110	3,469.93	5.000		3.250	XT-39			RIG
AGITATOR 1.4 PLATE & SHOCK SUB	1	22.24	5.000		2.750	XT-39			W1830287
(53 JTS) DRILL PIPE	53	1,667.63	5.000		3.250	XT-39			RIG
CROSSOVER SUB	1	1.95	5.000		2.750	XT-39			DR18060
FLOAT SUB	1	2.96	4.750		2.750	3-1/2 IF			NESFS4751 51
SCREEN SUB	1	3.98	4.875		2.750	3-1/2 IF			DR31955
NM SLICK COLLAR	1	29.12	4.500		2.560	3-1/2 IF			NESNM4754 45
GAP SUB	1	3.76	5.125			3-1/2 IF			VG4755094 PTS
CENTRALIZER COLLAR	1	8.34	5.000			4.3 ACME			VC475012
LANDING SUB	1	3.43	5.125			4.3 ACME			VL475074
CROSSOVER	1	1.50	4.750		2.750	3-1/2 IF			VX475012
NM PONY SLICK COLLAR	1	11.01	4.630		2.750	3-1/2 IF			DR31741
STABILIZER	1	4.83	5.875		2.625	3-1/2 IF			DR27098
5" BICO MUD MOTOR, LOBES: 6/7 STG: 8 FIXED @ 1.83°	1	31.75	5.875			3-1/2 IF			G254
BIT #5 RUN #1 BAKER TD405FX, 4X16's. 1X15's. SN: 7163435	1	1.00	6.125	6.125					7163435

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## Drillstring Details

Date/Time in		Date/Time out		BHA no.	BHA Length (ft)	Min. ID (in)	Purpose
08/15/2017 00:00				5	137.01		DRILL 6.125" PRODUCTION SECTION
MD (ft)	SW Up (kip)	SW Down (kip)	SW Rotn (kip)	Drag (kip)	Tq On Btm (ft-lbf)	Tq Off Btm (ft-lbf)	Footage (ft)
13,205.00	200.0	175.00	185.00	15.00	10,000.0	5,000.0	17.00
13,218.00	200.0	175.00	0.00	200.00	0.0	0.0	13.00
13,394.00	200.0	175.00	185.00	15.00	10,000.0	5,000.0	176.00
13,412.00	200.0	175.00	0.00	200.00	0.0	0.0	18.00
13,678.00	210.0	175.00	190.00	20.00	10,000.0	5,000.0	266.00
13,703.00	210.0	170.00	0.00	210.00	0.0	0.0	25.00
13,773.00	210.0	170.00	190.00	20.00	10,000.0	5,000.0	70.00
13,803.00	210.0	170.00	0.00	210.00	0.0	0.0	30.00
13,853.00	210.0	170.00	190.00	20.00	10,000.0	5,000.0	50.00
13,863.00	210.0	170.00	190.00	20.00	10,000.0	5,000.0	10.00
13,908.00	210.0	170.00	0.00	210.00	0.0	0.0	45.00
14,372.00	210.0	170.00	190.00	20.00	10,000.0	5,000.0	464.00
14,531.00	210.0	170.00	190.00	20.00	10,000.0	5,000.0	159.00
14,550.00	210.0	170.00	0.00	210.00	0.0	0.0	19.00

## PUMP/HYDRAULIC DATA

Pump No.	Type	Make/Model	Stroke (in)	Liner size (in)	Efficiency (%)	Pressure (psi)	SPM (spm)	Output (gpm)	Kill SPM/Pressure/Depth (spm/psi/ft)
1		GARDENER-DENVER / PZ-11-1600	11.00						
2		GARDENER-DENVER / PZ-11-1600	11.00						

## Remarks

FUEL ON LOCATION: 15476 GAL  
FUEL USED (RIG): 3575 GAL  
FUEL USED (PITS): 2329 GAL  
FUEL DELIVERED: 11204 GAL