

EP WELLS DAILY OPERATIONS REPORT

Report 13

08/16/2017

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	12.92
Objective	Drill - Wolfcamp B1 Shale	Original Spud Date	06/17/2017	Days Since Spud	10.58
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)	13,188.00
Engineer	BRANDON FOOTE	TVD(ft)	11,616.69
Other Supervisor	TREVOR KELLEY	24 Hr Progress(ft)	1,210.00
Depth Ref/Grd Elev/Water Depth(ft)	DFE: 2,800.10 / 2,772.10	Hole size(in)	6.125
THF Datum			
Daily NPT(hr/%)	0/0	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	1,372,320/2,770,860.00	Current MW / BH EMW(ppg)	13.50/
Actual divided by AFE	0.50	LOT/FIT EMW(ppg)	
Daily Cost	48,408	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 GOAL ZERO DAYS PS BARRIER EVENT PS barrier bowtie review	09/29/2015	687	TRCF LWCF Safety Cards - Safe Safety Card - Unsafe SSE% Last casing pressure(psi)	1500
Safety Comments:							
270 MAN HOURS							

HSE Drills

Drills/Tests	Date	Days Since Last		
Last Derrick Inspection	08/15/2017	1	JSA's/Toolbox Talks	13
Last BOP function test	08/07/2017	9	Days Since Last Drill	
Last BOP Test	08/28/2017			
Next BOP Test				

Operations Summary

24 Hour Summary
ROTATE & SLIDE DRILL F/11983' T/13188'
Update Since Report Time
DRILL T/13310'
24 Hour Forecast
DRILL AHEAD. TD EST @ 21085'

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
0:00	3.00	MNH1	DRL		12,163.00	0		ROTARY DRILL F/11983' T/12163' (180' @ 60 FPH) WOB: 25K RPM: SURF 70 MOTOR 247 BIT 317 PSI & FLOW: SPP 6000 GPM 305 DIFF 600-750 STRING WT: P/U 230 S/O 180 ROT 190 TORQUE: ON BTM 6-8K OFF BTM 4-5K MW: 13.4 PPG MOTOR: .81 REV/GAL GAS: BG 500 CG 4000
3:00	3.00	MNH1	DRL		12,243.00	0		SLIDE DRILL F/12163' T/12243' (80' @ 26.7 FPH) WOB: 20K RPM: SURF MOTOR 247 BIT 247 PSI & FLOW: SPP 6000 GPM 305 DIFF 300-500 STRING WT: P/U 230 S/O 180 ROT TORQUE: ON BTM OFF BTM MW: 13.4 PPG MOTOR: .81 REV/GAL GAS: BG 500 CG 4000
6:00	0.50	MNH1	DRL		12,258.00	0		ROTARY DRILL F/12243' T/12258' (15' @ 30 FPH) WOB: 25K RPM: SURF 90 MOTOR 243 BIT 333 PSI & FLOW: SPP 5860 GPM 300 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
6:30	2.00	MNH1	DRL		12,318.00	0		SLIDE DRILL F/12258' T/12318' (60' @ 30 FPH) WOB: 20K RPM: SURF MOTOR 243 BIT 243 PSI & FLOW: SPP 5860 GPM 300 DIFF 300-500 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
8:30	1.00	MNH1	DRL		12,353.00	0		ROTARY DRILL F/12318' T/12353' (35' @ 35 FPH) WOB: 25K RPM: SURF 90 MOTOR 243 BIT 333 PSI & FLOW: SPP 5860 GPM 300 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
9:30	1.00	MNH1	DRL		12,398.00	0		SLIDE DRILL F/12353' T/12398' (45' @ 45 FPH) WOB: 20K RPM: SURF MOTOR 243 BIT 243 PSI & FLOW: SPP 5860 GPM 300 DIFF 300-500 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
10:30	1.00	MNH1	DRL		12,448.00	0		ROTARY DRILL F/12398' T/12448' (50' @ 50 FPH) WOB: 25K RPM: SURF 90 MOTOR 243 BIT 333 PSI & FLOW: SPP 5860 GPM 300 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
11:30	1.50	MNH1	DRL		12,498.00	0		SLIDE DRILL F/12448' T/12498' (50' @ 33.3 FPH) WOB: 20K RPM: SURF MOTOR 243 BIT 243

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Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								PSI & FLOW: SPP 5860 GPM 300 DIFF 300-500 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
13:00	0.50	MNH1	DRL		12,557.00	0		ROTARY DRILL F/12498' T/12557' (59' @ 118 FPH) WOB: 25K RPM: SURF 90 MOTOR 243 BIT 333 PSI & FLOW: SPP 5860 GPM 300 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
13:30	1.00	MNH1	DRL		12,585.00	0		SLIDE DRILL F/12557' T/12585' (28' @ 28 FPH) WOB: 20K RPM: SURF MOTOR 243 BIT 243 PSI & FLOW: SPP 5860 GPM 300 DIFF 300-500 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
14:30	2.00	MNH1	DRL		12,811.00	0		ROTARY DRILL F/12585' T/12811' (226' @ 113 FPH) WOB: 25K RPM: SURF 90 MOTOR 243 BIT 333 PSI & FLOW: SPP 5860 GPM 300 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
16:30	0.50	MNH1	SVC		12,811.00	0		LUBRICATE RIG
17:00	0.50	MNH1	DRL		12,826.00	0		ROTARY DRILL F/12811' T/12826' (15' @ 30 FPH) WOB: 25K RPM: SURF 90 MOTOR 243 BIT 333 PSI & FLOW: SPP 5860 GPM 300 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
17:30	0.50	MNH1	DRL		12,835.00	0		SLIDE DRILL F/12826' T/12835' (9' @ 18 FPH) WOB: 20K RPM: SURF MOTOR 243 BIT 243 PSI & FLOW: SPP 5860 GPM 300 DIFF 300-500 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
18:00	1.00	MNH1	DRL		12,921.00	0		ROTARY DRILL F/12835' T/12921' (86' @ 86 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
19:00	1.50	MNH1	DRL		12,958.00	0		SLIDE DRILL F/12921' T/12958' (37' @ 24.7 FPH) WOB: 20K RPM: SURF MOTOR 252 BIT 252 PSI & FLOW: SPP 5900 GPM 311 DIFF 150-250 STRING WT: P/U 200 S/O 175 ROT

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								TORQUE: ON BTM OFF BTM MW: 13.4 PPG MOTOR: .81 REV/GAL GAS: BG 500 CG 4000
20:30	0.50	MNH1	DRL		13,021.00	0		ROTARY DRILL F/12958' T/13021' (63' @ 126 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
21:00	1.50	MNH1	DRL		13,041.00	0		SLIDE DRILL F/13021' T/13041' (20' @ 13.3 FPH) WOB: 20K 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
22:30	1.50	MNH1	DRL		13,188.00	0		ROTARY DRILL F/13041' T/13188' (147' @ 98 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
Total	24.00							

Deepest 5 Surveys

MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	E/W (ft)	V.Sec (ft)	DLeg (°/100ft)	Tool
12,752.00	89.36	164.52	11,613.36	-1,199.07	45.78	1,193.07	1.43	PTW MWD+HDGM_2016
12,847.00	89.50	163.88	11,614.31	-1,290.47	71.65	1,287.25	0.69	PTW MWD+HDGM_2016
12,942.00	89.75	162.93	11,614.93	-1,381.51	98.78	1,381.26	1.03	PTW MWD+HDGM_2016
13,037.00	90.36	161.13	11,614.84	-1,471.87	128.09	1,474.91	2.00	PTW MWD+HDGM_2016
13,131.00	88.50	160.30	11,615.77	-1,560.59	159.13	1,567.19	2.17	PTW MWD+HDGM_2016

Fluid Details

Mud type	Invermul	Oil/Water (%)	54.00/18.50	POM (cc)	
MD (ft)	12,740.00	TS/HGS/LGS (%)	25.80/17.10/8.80	CaCl2 (%)	
Mud Density (ppg)	13.50	Sand (%)	0.08	Caom/Clom (ppm)	
Vis (s/qt)	68.00	Oil/Water Ratio (%)	74.50/25.50	ACT	
PV/YP (cp/lbf/100ft²)	28.00/11.000			XS Lime(lbm/bbl)	2.59
Gels 10 s/m (lbf/100ft²)	12.000/15.000	LCM (lbm/bbl)		ES (Volts)	425.0
API/HTHP WL (cc/30min)	/16.0	ECD (ppg)	15.180	R600/300 (°)	
FC/HTHP FC (32nd")	/4.0	H2S (gas unit)		R200/100 (°)	
WPS (ppm)	218,115	KCl (%)		R6/3 (°)	
FL temp. (°F)		Ditch Magnet in Last 24hrs/Cum. (gm)			

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Gas Concentrations and Fluid Losses

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

Bulks Summary

Product	Quantity Onboard	Units	Daily Usage
Diesel	-3,229.00		3,087.00

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		-----

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)
12,163.00	25.0/25.0	70	305.0	6,000.00	125.10	2.08	22.26	3.00	180.00	60.0	3.00	180.00	60.0
12,243.00	20.0/20.0	0	305.0	6,000.00	125.10	2.08	22.26	3.00	80.00	26.7	6.00	260.00	43.3
12,258.00	25.0/25.0	90	300.0	5,860.00	121.03	2.07	21.18	0.50	15.00	30.0	6.50	275.00	42.3
12,318.00	20.0/20.0	0	300.0	5,860.00	121.03	2.07	21.18	2.00	60.00	30.0	8.50	335.00	39.4
12,353.00	25.0/25.0	90	300.0	5,860.00	121.03	2.07	21.18	1.00	35.00	35.0	9.50	370.00	38.9
12,398.00	20.0/20.0	0	300.0	5,860.00	121.03	2.07	21.18	1.00	45.00	45.0	10.50	415.00	39.5
12,448.00	25.0/25.0	90	300.0	5,860.00	121.03	2.07	21.18	1.00	50.00	50.0	11.50	465.00	40.4
12,498.00	20.0/20.0	0	300.0	5,860.00	121.03	2.07	21.18	1.50	50.00	33.3	13.00	515.00	39.6
12,557.00	25.0/25.0	90	300.0	5,860.00	121.03	2.07	21.18	0.50	59.00	118.0	13.50	574.00	42.5
12,585.00	20.0/20.0	0	300.0	5,860.00	121.03	2.07	21.18	1.00	28.00	28.0	14.50	602.00	41.5
12,811.00	25.0/25.0	90	300.0	5,860.00	121.03	2.07	21.18	2.00	226.00	113.0	16.50	828.00	50.2
12,826.00	25.0/25.0	90	300.0	5,860.00	121.03	2.07	21.18	0.50	15.00	30.0	17.00	843.00	49.6
12,835.00	20.0/20.0	0	300.0	5,860.00	121.03	2.07	21.18	0.50	9.00	18.0	17.50	852.00	48.7
12,921.00	25.0/25.0	90	311.0	5,900.00	130.07	2.20	23.60	1.00	86.00	86.0	18.50	938.00	50.7
12,958.00	20.0/20.0	0	311.0	5,900.00	130.07	2.20	23.60	1.50	37.00	24.7	20.00	975.00	48.7
13,021.00	25.0/25.0	90	311.0	5,900.00	130.07	2.20	23.60	0.50	63.00	126.0	20.50	1,038.00	50.6
13,041.00	20.0/20.0	0	311.0	5,900.00	130.07	2.20	23.60	1.50	20.00	13.3	22.00	1,058.00	48.1
13,188.00	25.0/25.0	90	311.0	5,900.00	130.07	2.20	23.60	1.50	147.00	98.0	23.50	1,205.00	51.3

Drillstring Components

Item description	# Jts	Length (ft)	OD (in)	Max OD (in)	ID (in)	Connection Name	Weight (ppf)	Grade	Serial no.
4" DP	251	7,913.43	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			NESFS475151
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			NESNM475445

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Drillstring Components

Item description	# Jts	Length (ft)	OD (in)	Max OD (in)	ID (in)	Connection Name	Weight (ppf)	Grade	Serial no.
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

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)
12,163.00	230.0	180.00	190.00	40.00	8,000.0	5,000.0	180.00
12,243.00	230.0	180.00	0.00	230.00	0.0	0.0	80.00
12,258.00	200.0	175.00	185.00	15.00	10,000.0	5,000.0	15.00
12,318.00	200.0	175.00	0.00	200.00	0.0	0.0	60.00
12,353.00	200.0	175.00	185.00	15.00	10,000.0	5,000.0	35.00
12,398.00	200.0	175.00	0.00	200.00	0.0	0.0	45.00
12,448.00	200.0	175.00	185.00	15.00	10,000.0	5,000.0	50.00
12,498.00	200.0	175.00	0.00	200.00	0.0	0.0	50.00
12,557.00	200.0	175.00	185.00	15.00	10,000.0	5,000.0	59.00
12,585.00	200.0	175.00	0.00	200.00	0.0	0.0	28.00
12,811.00	200.0	175.00	185.00	15.00	10,000.0	5,000.0	226.00
12,826.00	200.0	175.00	185.00	15.00	10,000.0	5,000.0	15.00
12,835.00	200.0	175.00	0.00	200.00	0.0	0.0	9.00
12,921.00	200.0	175.00	185.00	15.00	10,000.0	5,000.0	86.00
12,958.00	200.0	175.00	0.00	200.00	0.0	0.0	37.00
13,021.00	200.0	175.00	185.00	15.00	10,000.0	5,000.0	63.00
13,041.00	200.0	175.00	0.00	200.00	0.0	0.0	20.00
13,188.00	200.0	175.00	185.00	15.00	10,000.0	5,000.0	147.00

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): 5088 GAL
FUEL USED (PITS): 3087 GAL
FUEL DELIVERED: 4225 GAL