HALLIBURTON

12-Jul-17

Texas Railroad Commission
Pam Johns, Oil Gas Division
P.O. Box 12967, Capitol Station
Austin, TX 78711

Final Survey for:

Company:	FELIX ENERGY HOLDINGS II, LLC
RRC Operator #:	265322
Well Name:	UL GUANELLA 05-17 1H
Drilling Permit #:	824506
Abstract #:	0
County:	WARD COUNTY, TX
API #:	42-475-37215
Sperry DS Job #:	904050985

Dear Ms. Johns:
Enclosed you will find the original survey performed by Halliburton Energy Services, Inc. (AKA Sperry Drilling Services) on the above referenced well. In addition to the survey, I have included a certified plat on which the bottom hole location is oriented to both the surface location and the nearest lease line (or unit of lines in case of pooling) and a signed letter from the surveyor.

Other information required by your office is as follows:

Name & Title of Surveyor:	RIGO MEJIA		
Type of Survey:	MWD		
Dates Performed:	5/25/2017	thru	6/27/2017
Drainhole Number:	ORIGINAL		
Surveyed Depths:	469	to	16305

Should you have any questions or require additional information, please do not hesitate to contact me @ 281-871-7767.

Sandra Curvey
Sperry Drilling Services

Created On : Jun 26 2017

Survey Report for

Felix Energy

Rig	:	Cactus 139
Well Name	:	UL Guanella 05-17 1H
Field Name	:	Wolfcamp
Country	:	USA
Job Number	:	MO-XX-0904050985
Job Start Date	:	25-May-17
API Number	:	42-475-37215

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GENERAL INFORMATION

Company	: Felix Energy
Rig	: Cactus 139
Well	: UL Guanella 05-17 1H
Field	: Wolfcamp
Lease Name	: UL Guanella 05-17
State	: Texas
County	: Ward County
Country	: USA
API Number	: 42-475-37215
Sperry Drilling Job Number	: MO-XX-0904050985
Job Start Date	: 25-May-17
Job End Date	: 27-Jun-17
North Reference	: Grid
Total Correction (deg)	: 8.316
Dip Angle (deg)	: 59.539
Total Magnetic Field (nT)	: 47641
Date of Magnetic Data	: 25 May, 2017
Well Head coordinates N	: 31 deg. 34 min 57.37 sec North
Well Head coordinates E	: 103 deg. 9 min 51.8 sec West
Vertical section direction (deg)	: 343.73
Unit Number	: 11498524
MWD Engineers	: Rigo Mejia, Don Cowart
Company Representatives	: Jerry Preston, Adam Bailey
Company Geologist:	: Chris Persellin

OPERATIONAL OVERVIEW

HALLIBURTON / SPERRY DRILLING WAS CONTRACTED BY FELIX ENERGY TO PERFORM MWD SERVICES FOR THE UL GUANELLA 05-17 1H WELL IN WARD COUNTY, TX. EQUIPMENT AND PERSONNEL ARRIVED ON LOCATION ON MAY 24, 2017 AND RIGGED UP ACCORDINGLY.

RUN 100: DRILLED FROM 80' MD TO 1245' MD. POOH DUE TO TD OF SURFACE SECTION.

RUN 200: DRILLED FROM 1245' MD TO 2107' MD. POOH DUE TO LOSS OF MUD. PU DUMB IRON TO PUMP BULK MATERIAL.

RUN 300: DRILLED FROM 2107' MD TO 5015' MD. POOH DUE TO FIRST INTERMEDIATE SECTION TD.

RUN 400: DRILLED FROM 5015' MD TO 7832' MD. POOH DUE TO LOW ROP. CHANGED OUT MWD, MOTOR AND BIT.

RUN 500: DRILLED FROM 7832' MD TO 8788' MD. POOH DUE TO LOW ROP. CHANGED MOTOR AND BIT.

RUN 600: DRILLED FROM 8788' MD TO 9513' MD. POOH DUE TO LOW ROP. CHANGED OUT BIT.

RUN 700: DRILLED FROM 9513' MD TO10824' MD. POOH DUE TO TD OF SECOND INTERMEDIATE SECTION.

RUN 800: DRILLED FROM 10824' MD TO 11220' MD. POOH DUE TO GAMMA FAILURE. CHANGED OUT MWD AND BIT.

RUN 900: DRILLED FROM 11220' MD TO 11734' MD. POOH DUE TO TD OF CURVE SECTION.

RUN 1000: DRILLED FROM 11734' MD TO 14584' MD. POOH DUE TO TORQUE AND DIFFERENTIAL OVERLIMITS, AND LOW ROP. CHANGED MOTOR, BIT AND MWD.

RUN 1100: DRILLED FROM 14584' MD TO 15607' MD. POOH DUE TO LOW ROP. CHANGED MOTOR AND BIT.

RUN 1200: DRILLED FROM 15607' MD TO 16361' MD. POOH DUE TO TD OF LATERAL SECTION.

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SUMMARY OF MWD RUNS

Run No.	Rig Run No.	Hole Size (in)	MWD Service	Start Depth (ft)	End Depth (ft)	Drill/Wipe Distance (ft)	Run Start Date Time	Run End Date Time	BRT Hrs	Oper. Hrs	Circ. Hrs	Max Temp. (degF)	Serv Int.	Trip for MWD	Failure Type
100	0100	17.5	D/GWD	80.00	1245.00	1165.00	25-May-17 15:30	26-May-17 12:30	21.00	21.000	5.000	117.73	No	No	
200	0200	12.25	D/GWD	1245.00	2107.00	862.00	27-May-17 12:30	29-May-17 03:00	38.50	38.500	10.170	117.73	No	No	
300	0300	12.25	D/GWD	2107.00	5015.00	2908.00	31-May-17 06:30	02-Jun-17 21:30	63.00	63.000	52.000	117.73	No	No	
400	0400	9.875	D/GWD	5015.00	7832.00	2817.00	04-Jun-17 14:30	07-Jun-17 10:30	68.00	68.000	52.000	142.25	No	No	
500	0500	9.875	D/GWD	7832.00	8788.00	956.00	07-Jun-17 11:00	09-Jun-17 00:00	37.00	37.000	25.000	158.47	No	No	
600	0600	9.875	D/GWD	8788.00	9513.00	725.00	09-Jun-17 00:30	10-Jun-17 14:00	37.50	37.500	19.000	158.47	No	No	
700	0700	9.875	D/GWD	9513.00	10824.00	1311.00	10-Jun-17 14:30	12-Jun-17 23:00	56.50	56.500	33.000	158.47	No	No	
800	0800	6.75	D/GWD	10824.00	11220.00	396.00	16-Jun-17 01:00	17-Jun-17 06:30	29.50	29.500	14.000	153.79	Yes	Yes	PCGK
900	0900	6.75	D/GWD	11220.00	11734.00	514.00	17-Jun-17 07:00	18-Jun-17 18:00	35.00	35.000	20.000	167.97	No	No	
1000	1000	6.75	D/GWD	11734.00	14584.00	2850.00	18-Jun-17 18:00	22-Jun-17 02:00	80.00	80.000	63.000	185.02	No	No	
1100	1100	6.75	D/GWD	14584.00	15607.00	1023.00	22-Jun-17 02:30	24-Jun-17 04:00	49.50	49.500	34.000	188.10	No	No	
1200	1200	6.75	D/GWD	15607.00	16361.00	754.00	24-Jun-17 04:30	27-Jun-17 12:30	80.00	80.000	42.000	196.50	No	No	

DIRECTIONAL SURVEY DATA

Tie-in

0.00	0.00	0.00	0.00	0.00 N	0.00 E

Measured Depth (ft)	Inclination (deg)	Direction (deg)	Vertical Depth (ft)	Latitude (ft)	Departure (ft)	Vertical Section (ft)	Dogleg (°/100')
469.00	1.15	278.18	468.97	0.67 N	4.65 W	1.94	0.24
927.00	2.85	282.69	926.67	3.83 N	20.31 W	9.36	0.37
1181.00	4.28	290.27	1,180.18	8.50 N	35.37 W	18.06	0.59
1258.00	3.79	295.96	1,256.98	10.61 N	40.35 W	21.49	0.82
1319.00	3.03	290.40	1,317.88	12.05 N	43.68 W	23.81	1.36
1411.00	2.34	209.62	1,409.80	11.27 N	46.88 W	23.95	3.82
1501.00	4.91	173.47	1,499.63	5.85 N	47.35 W	18.88	3.69
1592.00	7.00	151.94	1,590.14	2.91 S	44.30 W	9.61	3.32
1866.00	6.88	143.39	1,862.14	30.83 S	26.66 W	-22.12	0.38
2143.00	6.62	141.68	2,137.22	56.67 S	6.86 W	-52.48	0.12
2236.00	6.99	142.64	2,229.56	65.38 S	0.10 W	-62.73	0.42
2330.00	6.06	144.95	2,322.95	73.99 S	6.22 E	-72.77	1.03
2425.00	3.80	144.32	2,417.60	80.65 S	10.94 E	-80.49	2.38
2520.00	4.12	138.88	2,512.37	85.79 S	15.02 E	-86.56	0.52
2615.00	3.68	144.61	2,607.15	90.85 S	19.04 E	-92.54	0.62
2710.00	2.31	159.97	2,702.02	95.14 S	21.46 E	-97.34	1.66
2804.00	2.04	154.93	2,795.95	98.43 S	22.82 E	-100.88	0.36
2900.00	1.85	152.57	2,891.89	101.36 S	24.26 E	-104.09	0.21
2994.00	2.38	120.69	2,985.83	103.70 S	26.63 E	-107.01	1.35
3090.00	2.52	114.52	3,081.75	105.59 S	30.27 E	-109.84	0.31
3184.00	1.96	122.90	3,175.67	107.32 S	33.50 E	-112.41	0.69
3279.00	2.41	119.83	3,270.60	109.20 S	36.59 E	-115.08	0.49
3373.00	2.58	116.54	3,364.52	111.12 S	40.20 E	-117.94	0.24
3469.00	2.24	113.97	3,460.43	112.85 S	43.85 E	-120.62	0.38
3564.00	1.98	116.56	3,555.37	114.34 S	47.00 E	-122.93	0.29
3659.00	1.99	120.60	3,650.31	115.91 S	49.89 E	-125.24	0.15
3753.00	1.88	114.03	3,744.26	117.37 S	52.70 E	-127.43	0.27
3847.00	1.97	115.87	3,838.20	118.70 S	55.56 E	-129.51	0.12
3942.00	1.66	119.69	3,933.16	120.09 S	58.23 E	-131.60	0.35
4036.00	1.61	129.33	4,027.12	121.60 S	60.43 E	-133.67	0.30
4131.00	1.34	133.86	4,122.09	123.22 S	62.27 E	-135.73	0.31
4226.00	1.92	115.85	4,217.05	124.68 S	64.50 E	-137.76	0.81
4320.00	2.05	114.84	4,310.99	126.07 S	67.43 E	-139.92	0.14
4415.00	2.32	118.99	4,405.92	127.72 S	70.66 E	-142.40	0.34
4510.00	2.70	111.54	4,500.83	129.47 S	74.42 E	-145.14	0.52
4605.00	2.63	112.58	4,595.73	131.13 S	78.51 E	-147.87	0.08
4700.00	2.74	117.17	4,690.62	133.00 S	82.54 E	-150.80	0.25
4794.00	2.65	114.61	4,784.52	134.93 S	86.52 E	-153.77	0.16
4889.00	2.50	115.17	4,879.42	136.73 S	90.39 E	-156.58	0.16
4955.00	2.40	116.74	4,945.36	137.97 S	92.93 E	-158.48	0.19
5083.00	2.36	114.33	5,073.25	140.25 S	97.72 E	-162.02	0.08

DIRECTIONAL SURVEY DATA

Measured Depth (ft)	Inclination (deg)	Direction (deg)	Vertical Depth (ft)	Latitude (ft)	Departure (ft)	Vertical Section (ft)	Dogleg (°/100')
5178.00	1.70	107.10	5,168.19	141.47 S	100.85 E	-164.06	0.74
5273.00	0.18	115.73	5,263.18	141.95 S	102.33 E	-164.94	1.60
5368.00	1.30	259.64	5,358.17	142.21 S	101.41 E	-164.93	1.52
5462.00	2.26	269.78	5,452.13	142.41 S	98.51 E	-164.31	1.07
5557.00	1.50	268.40	5,547.07	142.45 S	95.39 E	-163.47	0.80
5652.00	1.52	260.26	5,642.04	142.70 S	92.91 E	-163.01	0.23
5747.00	1.90	270.14	5,737.00	142.91 S	90.09 E	-162.42	0.51
5842.00	1.10	262.64	5,831.96	143.02 S	87.61 E	-161.84	0.87
5937.00	1.07	256.61	5,926.95	143.34 S	85.84 E	-161.65	0.12
6032.00	0.99	257.39	6,021.93	143.73 S	84.18 E	-161.55	0.08
6222.00	1.45	195.79	6,211.90	146.40 S	81.92 E	-163.49	0.69
6412.00	0.90	194.27	6,401.85	150.16 S	80.90 E	-166.81	0.29
6507.00	0.85	175.40	6,496.84	151.58 S	80.77 E	-168.14	0.31
6602.00	1.80	248.57	6,591.82	152.83 S	79.44 E	-168.97	1.84
6697.00	1.03	250.41	6,686.79	153.66 S	77.25 E	-169.15	0.81
6791.00	0.99	260.90	6,780.78	154.08 S	75.65 E	-169.10	0.20
6885.00	1.04	251.51	6,874.76	154.48 S	74.04 E	-169.03	0.18
6980.00	0.74	237.21	6,969.75	155.08 S	72.71 E	-169.24	0.39
7075.00	0.81	242.74	7,064.74	155.72 S	71.59 E	-169.55	0.10
7170.00	0.49	248.33	7,159.74	156.18 S	70.62 E	-169.71	0.34
7265.00	0.11	184.88	7,254.74	156.42 S	70.23 E	-169.84	0.48
7360.00	0.22	257.57	7,349.74	156.56 S	70.04 E	-169.91	0.22
7455.00	0.52	327.41	7,444.73	156.23 S	69.64 E	-169.49	0.51
7549.00	0.52	59.62	7,538.73	155.66 S	69.78 E	-168.98	0.80
7644.00	1.48	73.64	7,633.72	155.09 S	71.34 E	-168.87	1.03
7739.00	0.73	48.81	7,728.70	154.35 S	72.97 E	-168.61	0.92
7836.00	0.28	336.14	7,825.70	153.72 S	73.34 E	-168.11	0.72
7930.00	0.44	325.50	7,919.69	153.21 S	73.04 E	-167.54	0.18
8026.00	0.29	358.57	8,015.69	152.67 S	72.83 E	-166.95	0.26
8120.00	0.32	41.33	8,109.69	152.23 S	72.99 E	-166.58	0.24
8214.00	0.50	55.18	8,203.69	151.80 S	73.50 E	-166.31	0.21
8309.00	0.66	65.89	8,298.68	151.34 S	74.34 E	-166.10	0.20
8404.00	0.94	64.03	8,393.67	150.77 S	75.54 E	-165.90	0.30
8499.00	1.12	64.93	8,488.66	150.04 S	77.08 E	-165.63	0.19
8593.00	0.25	299.58	8,582.65	149.55 S	77.73 E	-165.34	1.37
8688.00	0.47	288.10	8,677.65	149.32 S	77.18 E	-164.96	0.24
8782.00	0.56	313.15	8,771.65	148.89 S	76.48 E	-164.36	0.25
8876.00	0.72	313.89	8,865.64	148.17 S	75.72 E	-163.45	0.17
8971.00	0.61	331.39	8,960.63	147.32 S	75.05 E	-162.45	0.24
9064.00	0.53	319.97	9,053.63	146.56 S	74.54 E	-161.57	0.15
9159.00	1.48	317.02	9,148.62	145.32 S	73.42 E	-160.08	1.01
9254.00	2.44	329.08	9,243.56	142.69 S	71.55 E	-157.02	1.09
9348.00	2.31	337.27	9,337.48	139.23 S	69.79 E	-153.21	0.38
9443.00	2.50	350.77	9,432.40	135.42 S	68.72 E	-149.25	0.63
9538.00	2.45	7.48	9,527.31	131.36 S	68.65 E	-145.33	0.76

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DIRECTIONAL SURVEY DATA

Measured Depth (ft)	Inclination (deg)	Direction (deg)	Vertical Depth (ft)	Latitude (ft)	Departure (ft)	Vertical Section (ft)	Dogleg (°/100')
9633.00	1.73	17.28	9,622.24	127.98 S	69.34 E	-142.28	0.84
9728.00	2.60	185.96	9,717.22	128.75 S	69.54 E	-143.07	4.54
9822.00	2.84	179.67	9,811.11	133.20 S	69.33 E	-147.29	0.41
9917.00	2.72	159.06	9,906.00	137.66 S	70.16 E	-151.80	1.05
10012.00	3.04	146.04	10,000.88	141.86 S	72.37 E	-156.46	0.77
10107.00	2.32	160.05	10,095.78	145.76 S	74.44 E	-160.78	1.03
10201.00	1.54	156.40	10,189.73	148.70 S	75.59 E	-163.92	0.84
10296.00	1.83	112.01	10,284.69	150.44 S	77.51 E	-166.13	1.37
10390.00	0.57	73.74	10,378.67	150.87 S	79.35 E	-167.06	1.52
10485.00	0.94	314.89	10,473.66	150.19 S	79.25 E	-166.38	1.38
10580.00	0.96	359.40	10,568.65	148.85 S	78.69 E	-164.94	0.75
10674.00	1.09	350.18	10,662.64	147.19 S	78.53 E	-163.30	0.22
10764.00	1.14	342.55	10,752.62	145.50 S	78.12 E	-161.56	0.17
10847.00	1.58	356.27	10,835.60	143.58 S	77.80 E	-159.62	0.66
10894.00	3.93	349.91	10,882.54	141.35 S	77.47 E	-157.39	5.05
10941.00	9.07	339.87	10,929.22	136.28 S	75.92 E	-152.09	11.15
10988.00	14.08	342.65	10,975.25	127.34 S	72.93 E	-142.67	10.72
11035.00	17.30	346.37	11,020.50	115.09 S	69.58 E	-129.97	7.19
11082.00	18.73	344.13	11,065.19	101.03 S	65.87 E	-115.44	3.38
11128.00	21.63	338.47	11,108.37	86.04 S	60.74 E	-99.61	7.59
11175.00	25.02	339.52	11,151.52	68.66 S	54.08 E	-81.07	7.26
11221.00	30.48	338.82	11,192.21	48.66 S	46.45 E	-59.72	11.91
11268.00	35.84	343.96	11,231.55	24.30 S	38.34 E	-34.06	12.86
11315.00	37.01	344.26	11,269.37	2.54 N	30.69 E	-6.16	2.53
11362.00	43.79	337.80	11,305.16	31.26 N	20.70 E	24.21	16.93
11409.00	51.31	337.72	11,336.86	63.34 N	7.58 E	58.68	16.00
11456.00	56.64	339.10	11,364.49	98.67 N	6.39 W	96.51	11.59
11502.00	61.86	337.68	11,388.01	135.41 N	20.95 W	135.85	11.65
11549.00	67.75	335.45	11,408.01	174.40 N	37.87 W	178.03	13.25
11595.00	74.75	335.38	11,422.78	213.99 N	55.98 W	221.10	15.22
11642.00	82.90	339.63	11,431.89	256.55 N	73.58 W	266.89	19.47
11689.00	86.76	340.83	11,436.12	300.59 N	89.41 W	313.60	8.61
11728.00	85.77	339.99	11,438.66	337.26 N	102.46 W	352.45	3.32
11821.00	90.28	340.68	11,441.87	424.76 N	133.72 W	445.21	4.90
11915.00	89.91	340.11	11,441.71	513.31 N	165.27 W	539.05	0.73
12009.00	92.34	341.75	11,439.87	602.12 N	195.97 W	632.91	3.13
12102.00	92.53	340.05	11,435.92	689.92 N	226.37 W	725.71	1.83
12195.00	91.11	338.58	11,432.96	776.88 N	259.20 W	818.38	2.20
12289.00	90.62	339.26	11,431.55	864.57 N	293.00 W	912.04	0.90
12382.00	92.28	343.88	11,429.20	952.75 N	322.39 W	1004.92	5.28
12414.00	88.71	343.77	11,428.92	983.48 N	331.30 W	1036.91	11.18
12476.00	88.49	344.08	11,430.44	1,043.04 N	348.46 W	1098.89	0.60
12569.00	91.48	348.53	11,430.46	1,133.36 N	370.46 W	1191.76	5.76
12663.00	93.64	349.96	11,426.26	1,225.61 N	387.99 W	1285.23	2.76
12756.00	88.64	347.97	11,424.41	1,316.84 N	405.78 W	1377.79	5.79

HALLIBURTON | Sperry Drilling

DIRECTIONAL SURVEY DATA

Measured Depth (ft)	Inclination (deg)	Direction (deg)	Vertical Depth (ft)	Latitude (ft)	Departure (ft)	Vertical Section (ft)	Dogleg (°/100')
12849.00	91.39	348.44	11,424.38	1,407.86 N	424.79 W	1470.49	2.99
12943.00	88.18	347.58	11,424.74	1,499.80 N	444.31 W	1564.22	3.53
13036.00	91.70	348.29	11,424.83	1,590.73 N	463.75 W	1656.95	3.85
13130.00	92.93	347.39	11,421.04	1,682.55 N	483.53 W	1750.63	1.62
13224.00	91.29	343.77	11,417.58	1,773.50 N	506.92 W	1844.50	4.22
13318.00	91.14	343.24	11,415.58	1,863.62 N	533.59 W	1938.48	0.59
13411.00	88.00	338.02	11,416.28	1,951.31 N	564.42 W	2031.29	6.55
13505.00	92.06	338.15	11,416.23	2,038.50 N	599.50 W	2124.82	4.33
13598.00	90.68	338.88	11,414.00	2,125.01 N	633.55 W	2217.40	1.68
13691.00	94.69	341.54	11,409.65	2,212.39 N	665.00 W	2310.10	5.17
13785.00	92.71	342.72	11,403.58	2,301.66 N	693.79 W	2403.86	2.45
13878.00	89.88	342.61	11,401.48	2,390.41 N	721.48 W	2496.81	3.05
13972.00	88.06	341.74	11,403.17	2,479.88 N	750.24 W	2590.76	2.14
14065.00	91.08	343.14	11,403.87	2,568.53 N	778.30 W	2683.72	3.58
14159.00	89.45	342.40	11,403.44	2,658.31 N	806.14 W	2777.70	1.91
14252.00	92.74	343.26	11,401.66	2,747.13 N	833.59 W	2870.66	3.67
14345.00	92.03	338.98	11,397.78	2,835.03 N	863.65 W	2963.46	4.66
14439.00	90.86	343.51	11,395.41	2,923.99 N	893.85 W	3057.31	4.97
14532.00	89.29	345.16	11,395.28	3,013.53 N	918.97 W	3150.30	2.45
14624.00	93.48	348.67	11,393.05	3,103.08 N	939.79 W	3242.10	5.95
14718.00	94.63	349.25	11,386.41	3,195.10 N	957.74 W	3335.47	1.36
14811.00	96.64	349.62	11,377.28	3,286.08 N	974.71 W	3427.56	2.20
14904.00	93.27	345.18	11,369.24	3,376.46 N	994.92 W	3519.98	5.98
14998.00	92.25	345.46	11,364.72	3,467.29 N	1,018.71 W	3613.84	1.12
15091.00	89.20	346.17	11,363.54	3,557.44 N	1,041.50 W	3706.76	3.37
15184.00	91.17	347.20	11,363.24	3,647.93 N	1,062.91 W	3799.63	2.39
15277.00	92.00	347.91	11,360.67	3,738.71 N	1,082.95 W	3892.38	1.18
15371.00	89.01	347.68	11,359.83	3,830.57 N	1,102.81 W	3986.13	3.19
15464.00	89.69	347.42	11,360.88	3,921.38 N	1,122.86 W	4078.92	0.78
15558.00	94.52	345.87	11,357.43	4,012.74 N	1,144.55 W	4172.70	5.39
15651.00	88.98	344.09	11,354.58	4,102.48 N	1,168.63 W	4265.60	6.25
15745.00	86.80	345.36	11,358.05	4,193.09 N	1,193.38 W	4359.51	2.69
15838.00	89.91	345.87	11,360.72	4,283.13 N	1,216.47 W	4452.41	3.39
15931.00	93.46	341.90	11,357.99	4,372.41 N	1,242.26 W	4545.34	5.73
16025.00	91.05	340.28	11,354.29	4,461.25 N	1,272.70 W	4639.15	3.09
16119.00	90.15	340.73	11,353.30	4,549.86 N	1,304.07 W	4733.00	1.07
16212.00	90.22	340.34	11,353.00	4,637.54 N	1,335.06 W	4825.85	0.43
16305.00	92.16	340.14	11,351.08	4,725.04 N	1,366.49 W	4918.66	2.10
16361.00	92.16	340.14	11,348.97	4,777.68 N	1,385.50 W	4974.51	0.01

SURVEY FOOTER

SURVEYS CALCULATED USING SHORT COLLAR METHOD.
TIE ON SURVEY ASSUMED VERTICAL AT SURFACE.
SURVEYS FROM 469' MD TO 16305' MD PROVIDED BY SPERRY DRILLING MWD.
SURVEY AT 16305' MD IS PROJECTED TD AT 16361' MD.
SPERRY DRILLING ENGINEERS: RIGO MEJIA, DON COWART

DIRECTIONAL SURVEY DATA NOTES

- Calculation based on minimum curvature method.
- Survey coordinates relative to well system reference point.
- TVD values given relative to drilling measurement point.
- Vertical section relative to well head.
- Vertical section is computed along a direction of 343.73 degrees (Grid)
- A total correction of 8.32 deg from Magnetic north to Grid north has been applied
- Horizontal displacement is relative to the well head.
- Horizontal displacement (closure) at 16,361.00 feet is 4,974.52 feet along 343.83 degrees (Grid)

HALLIBURTON | Sperry Drilling

Halliburton/Sperry Drilling
3950 Interwood S. Pkwy
Houston, Texas 77032
Phone 281.986.4400
Fax 281.986.4498

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

PERMIT TO DRILL, DEEPEN, PLUG BACK, OR RE-ENTER ON A REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

PERMIT NUMBER	DATE PERMIT ISSUED OR AMENDED	DISTRICT
824506	Mar 24, 2017	* 08
API NUMBER	**FORM W-1 RECEIVED**	**COUNTY**
42-475-37215	Mar 15, 2017	WARD
TYPE OF OPERATION	**WELLBORE PROFILE(S)**	**ACRES**
NEW DRILL	Horizontal	640.72

OPERATOR 265322
FELIX ENERGY HOLDINGS II, LLC
FELIX ENERGY
1530 16TH ST SUITE 500
DENVER, CO 80202-0000

NOTICE
This permit and any allowable assigned may be revoked if payment for fee(s) submitted to the Commission is not honored.
District Office Telephone No:
(432) 684-5581

LEASE NAME	WELL NUMBER
UL GUANELLA 05-17	1H
LOCATION	**TOTAL DEPTH**
3.76 miles NW direction from PYOTE	14000

Section, Block and/or Survey
SECTION 5 BLOCK 17 ABSTRACT
SURVEY UL

DISTANCE TO SURVEY LINES	DISTANCE TO NEAREST LEASE LINE
225 ft. S 330 ft. W	200 ft.
DISTANCE TO LEASE LINES	**DISTANCE TO NEAREST WELL ON LEASE**
225 ft. S 330 ft. W	See FIELD(s) Below

FIELD(s) and LIMITATIONS:
* SEE FIELD DISTRICT FOR REPORTING PURPOSES *

FIELD NAME / LEASE NAME	ACRES / NEAREST LEASE	DEPTH	WELL # / NEAREST WE	DIST
PHANTOM (WOLFCAMP)	640.72	14,000	1H	08
UL GUANELLA 05-17	200		0	

WELLBORE PROFILE(s) FOR FIELD: Horizontal

RESTRICTIONS: This is a hydrogen sulfide field. Hydrogen Sulfide Fields with perforations must be isolated and tested per State Wide Rule 36 and a Form H-9 filed with the district office. Fields with SWR 10 authority to downhole commingle must be isolated and tested individually prior to commingling production.

Lateral: TH1
Penetration Point Location
Lease Lines: 225.0 F S L
330.0 F W L
Terminus Location
BH County: WARD
Section: 5 Block: 17 Abstract: 44
Survey: UL
Lease Lines: 50.0 F N L
330.0 F W L
Survey Lines: 50.0 F N L
330.0 F W L

THE FOLLOWING RESTRICTIONS APPLY TO ALL FIELDS

BHL STØP

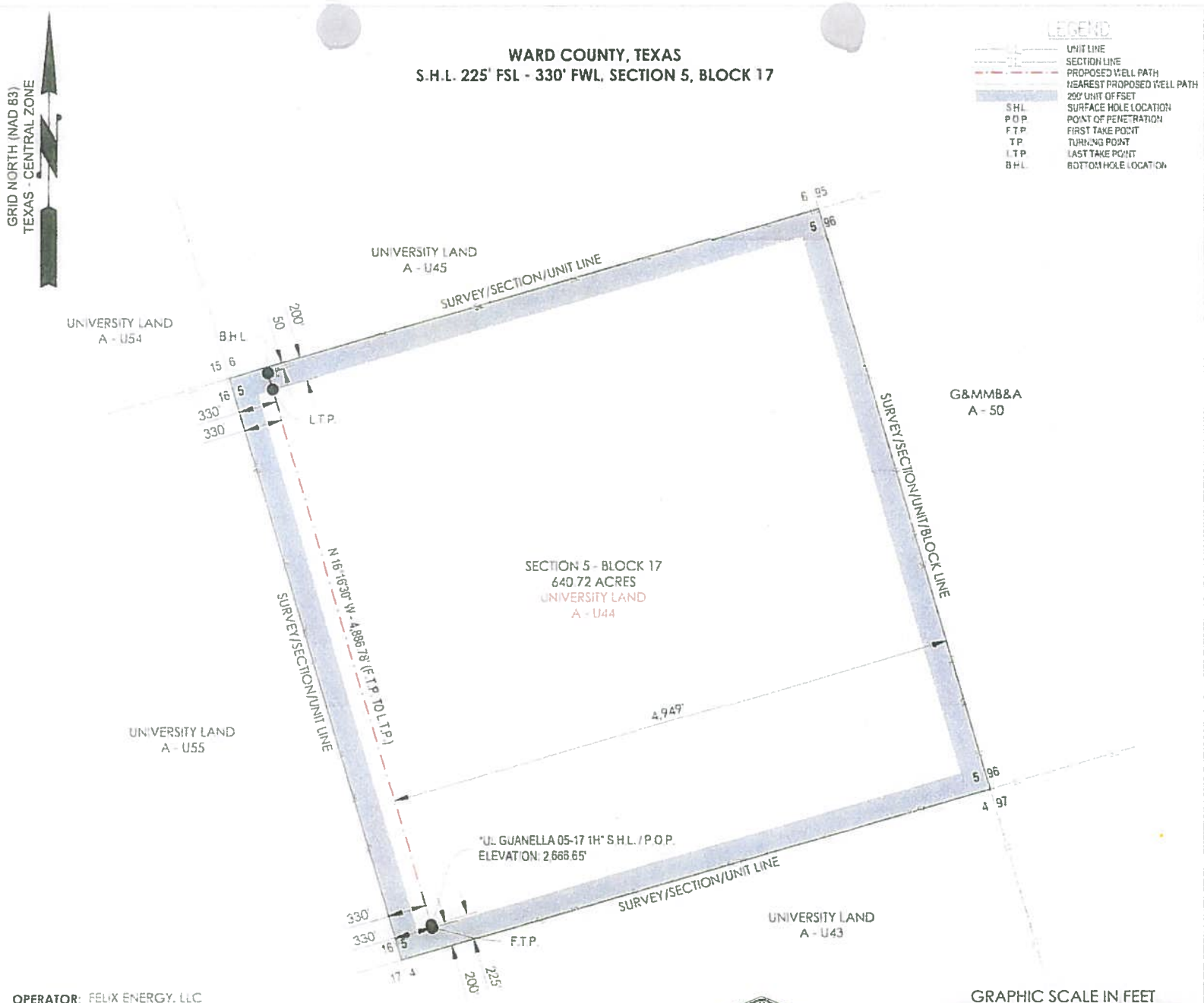
MD: 16305.00

TVD: 11,351.08

From Surf Loc: 4725.04N
1366.49W

SPERRY DRILLING JOB NO. 904050985
DATE SURVEYED 5/25/17
SURVEYED FROM 469 TO 16305
TIE-ON COORDINATES FROM Surf
BHL AT 16,361.00 FT. (MD) = 4,974.52 FT.
AT 343.83° * Grid
FROM SURFACE LOCATION NW
BHL _____ = TO _____ NW LEASE LINE

WARD COUNTY, TEXAS
S.H.L. 225' FSL - 330' FWL, SECTION 5, BLOCK 17



GRAPHIC SCALE IN FEET
1000' 500' 0 1000'

OPERATOR: FELIX ENERGY, LLC

WELL NAME: UL GUANELLA 05-17 WELL NO: 1H

TOPOGRAPHIC & VEGETATION: FLAT LOCATION WITH LOW LYING BRUSH

GOOD DRILL SITE: YES

REFERENCE STAKES OR ALTERNATE LOCATION STAKES SET: NONE

BEST ACCESSIBILITY TO LOCATION: FROM SOUTH

DISTANCE & DIRECTION
FROM HWY JCT OR TOWN: ±3.76 MILES NORTHWEST OF PYOTE, TX
FROM THE INTERSECTION OF PYOTE ST. AND HIGHWAY 2355 IN PYOTE, TEXAS, TAKE HIGHWAY 2355 AND TRAVEL WEST FOR ±3.11 MILES, TURN RIGHT ON AN EXISTING LEASE ROAD AND TRAVEL FOR ±1.46 MILES, TURN RIGHT ON AN EXISTING LEASE ROAD AND TRAVEL ±1.31 MILES TO A PROPOSED LEASE ROAD STRAIGHT AHEAD IN CURVE AND TRAVEL ±426 FEET TO THE WELL PAD

STATE OF TEXAS
SHANNON D. OZMENT
6542
REGISTERED
LAND SURVEYOR
3/9/2017

CONTACT INFORMATION
Shannon D. Ozment
Crafton Tull (10193715)
1000 Ledgelawn Dr.
Conway, AR 72034

SURFACE HOLE LOCATION / POINT OF PENETRATION:
225' FSL & 330' FWL (SEC. 5)
GROUND ELEVATION: 2,666.65
NAD 27 TEXAS CENTRAL ZONE
NORTHING: 708028.35, EASTING: 1118509.48
LATITUDE: N 31.58260250°, LONGITUDE: W -103.16438961°
NAD 83 TEXAS CENTRAL ZONE
NORTHING: 10550603.99, EASTING: 1414975.31
LATITUDE: N 31.58273459°, LONGITUDE: W -103.16483069°

FIRST TAKE POINT:
200' FSL & 330' FWL (SEC. 5)
NAD 27 TEXAS CENTRAL ZONE
NORTHING: 708004.35, EASTING: 1118516.49
LATITUDE: N 31.58253703°, LONGITUDE: W -103.16436515°

WELL PATH DATA

LINE	BEARING	DISTANCE
S.H.L./P.O.P. TO F.T.P.	S 16°16'30" E	25.00'
F.T.P. TO L.T.P.	N 16°16'30" W	4,866.76'
L.T.P. TO B.H.L.	N 16°16'30" W	150.00'

CALLS FROM SECTION LINE

S.H.L./P.O.P.	225' FSL, 330' FWL
F.T.P.	200' FSL, 330' FWL
L.T.P.	200' FNL, 330' FWL
B.H.L.	50' FNL, 330' FWL

LAST TAKE POINT:
200' FNL & 330' FWL (SEC. 5)
NAD 27 TEXAS CENTRAL ZONE
NORTHING: 712695.25, EASTING: 1117147.05
LATITUDE: N 31.59533319°, LONGITUDE: W -103.16914541°

BOTTOM HOLE LOCATION:
50' FNL & 330' FWL (SEC. 5)
NAD 27 TEXAS CENTRAL ZONE
NORTHING: 712839.23, EASTING: 1117105.01
LATITUDE: N 31.59572597°, LONGITUDE: W -103.16929216°

UNIT CORNERS

LOCATION	NAD27 STATE PLANE TEXAS CENTRAL (FIPS 4203)	NAD27 GEOGRAPHIC (FIPS 4267)
NE CORNER BLK 17-SEC 5	N: 714275.75 E: 1121841.67	LAT: 31.60000501° LONG: -103.15426102°
SE CORNER BLK 17-SEC 5	N: 709200.92 E: 1123322.71	LAT: 31.58616092° LONG: -103.14903303°
SW CORNER BLK 17-SEC 5	N: 707719.78 E: 1116255.79	LAT: 31.58173670° LONG: -103.16517681°
NW CORNER BLK 17-SEC 5	N: 712794.65 E: 1116774.28	LAT: 31.59556026° LONG: -103.17035647°

GENERAL NOTES
1 THE LOCATIONS OF UNDERGROUND UTILITIES AS SHOWN HEREON ARE BASED ON REASONABLE VISUAL OBSERVATION. LOCATIONS OF UNDERGROUND UTILITIES/ STRUCTURES MAY VARY FROM LOCATIONS SHOWN HEREIN. ADDITIONAL BURIED UTILITIES/ STRUCTURES MAY BE ENCOUNTERED. NO EXCAVATIONS WERE MADE DURING THE PROGRESS OF THIS SURVEY TO LOCATE BURIED UTILITIES/ STRUCTURES. BEFORE EXCAVATIONS ARE BEGUN, THE OFFICES OF THE VARIOUS UTILITIES SERVICING THIS AREA SHOULD BE CONTACTED FOR THEIR UTILITY LOCATION.
2 BASIS OF BEARINGS: TEXAS STATE PLANE GRID, CENTRAL ZONE, NAD83 AS DETERMINED BY GPS OBSERVATION.
3 COMBINED SCALE FACTOR AT S.H.L. = 0.99980654
4 VERTICAL DATUM IS NAVD 88
5 AREAS, DISTANCES, AND COORDINATES ARE "GRID" BASED ON U.S. SURVEY FEET.
6 THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY.

1000 Ledgelawn Dr
Conway, Arkansas 72034
Crafton Tull surveying
501.328.3316 | 501.328.3251
www.craftontull.com

REVISION

"UL GUANELLA 05-17 1H"
SECTION 5, BLOCK 17
640.72 ACRES
PROPOSED DRILL SITE
WARD COUNTY, TEXAS

FELIX ENERGY

SCALE: 1" = 1000' CHECKED BY: HFD APPROVED BY: A.LILEY
PLOT DATE: 03-09-2017 DRAWN BY: LDOW SHEET NO.: 1 OF 1

HALLIBURTON

3950 Interwood S. Pkwy • Houston, TX 77032
PHONE 281.986.4400 • FAX 281.986.4499

State of Texas, Ward

I, Rigo Mejia certify that I am employed by Halliburton Energy Services, Inc. (aka Sperry Drilling) and that on the dates of May 25, 2017 through June 27, 2017, I did conduct or supervise the taking of MWD directional surveys for the UL Guanella 05-17 1H well from a depth of 469' MD to a depth of 16305' MD. This data is true, correct, complete and within the limiations of the tools as set forth by Halliburton Energy Services, Inc. (aka Sperry Drilling). I am authorized and qualified to make this report and these surveys were conducted at the request of Felix Energy, for the UL Guanella 05-17 1H well in Ward. I have reviewed this report and find that it confirms to the principles and procedures as set forth by Halliburton Energy Services, Inc. (aka Sperry Drilling.)

Rigo Mejia
Field Engineer

Felix Energy

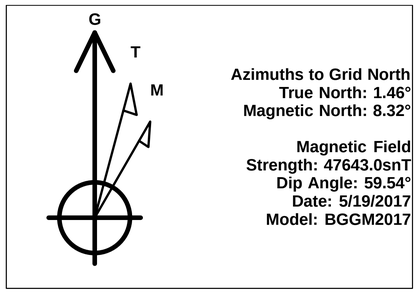
WELL DETAILS: UL Guanella 05-17 1H

GL2666.65'+25ft @ 2691.65usft (Cactus 139(+25ft))
Ground Level: 2666.65

		Northing	Easting	Latittude	Longitude
0.00	0.00	708028.35	1118509.48	31.58260244	-103.16438956

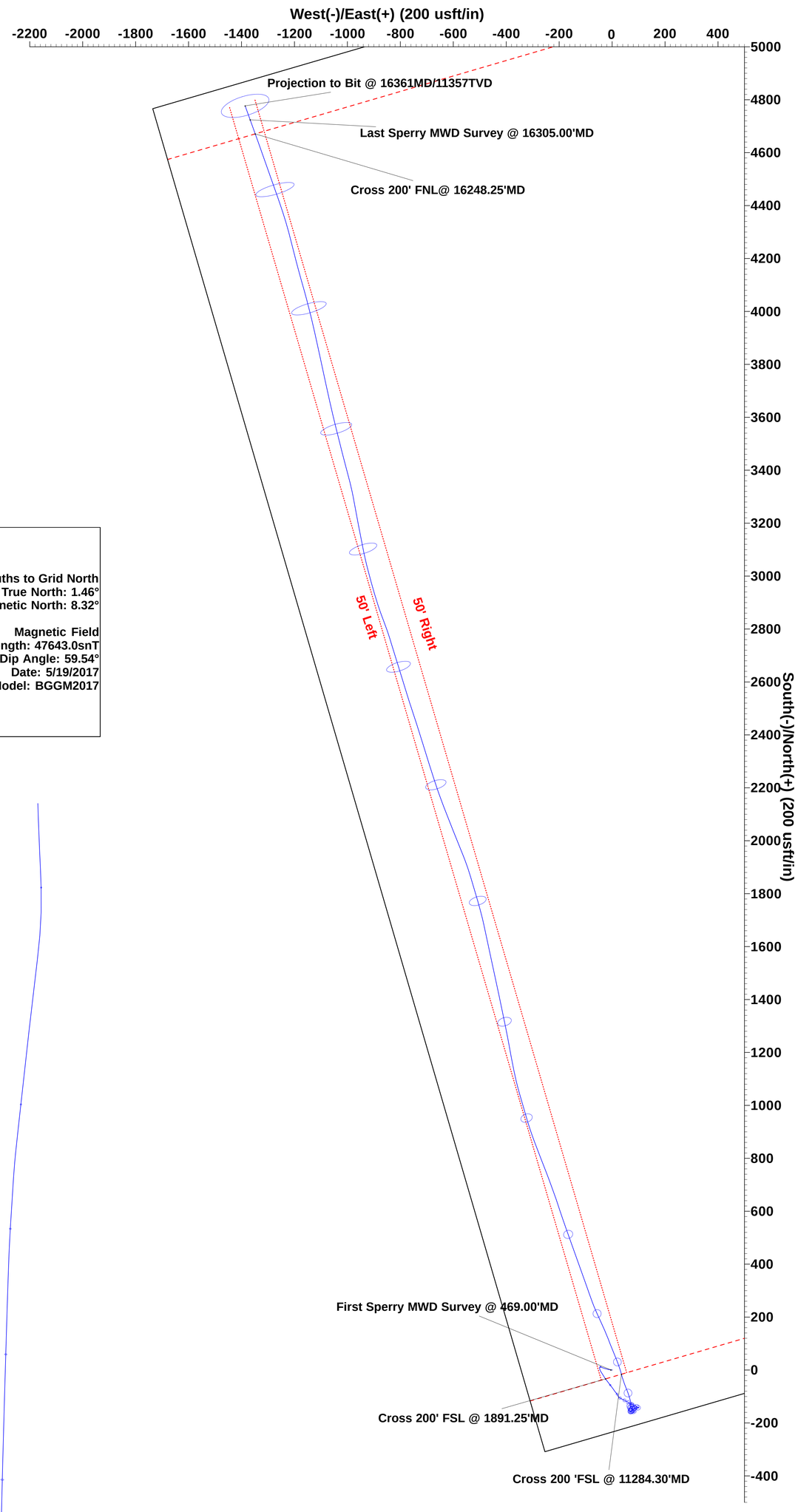
Ward County, TX (TXCZ)
UL Guanella 05-17
UL Guanella 05-17 1H
225' FSL & 330' FWL of Sec. 5
Wellbore #1
Final Surveys
Cactus 139(+25ft)
No plan data is available

HALLIBURTON | Sperry Drilling



Azimuths to Grid North
True North: 1.46°
Magnetic North: 8.32°

Magnetic Field
Strength: 47643.0snT
Dip Angle: 59.54°
Date: 5/19/2017
Model: BGGM2017



Cactus 139(+25ft)

Felix Energy

Ward County, TX (TXCZ) UL Guanella 05-17

API# 42-475-37215

UL Guanella 05-17 1H

225' FSL & 330' FWL of Sec. 5

Wellbore #1

Design: Final Surveys

Sperry Drilling Services

Combo Report

08 July, 2017

Well Coordinates:	31° 34' 57.37" N 103° 09' 51.80" W	NAD 1927 (NADCON CONUS) Texas Central 4203 708,028.35 N 1,118,509.48 E

Ground Level: 2,666.65 usft

Local Coordinate Origin:	Centered on Well UL Guanella 05-17 1H
Viewing Datum:	GL2666.65'+25ft @ 2691.65usft (Cactus 139(+25ft))
TVDs to System:	N
North Reference:	**Grid**
Unit System:	Midcon (2 decimal)

Version: 5000.1 Build: 81D

Report Version: Midcon Combo v1.11

HALLIBURTON

Design Report for UL Guanella 05-17 1H - Final Surveys

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	TVD below System (usft)	Vertical Depth (usft)	Local Coordinates Northing (usft)	Local Coordinates Easting (usft)	Map Coordinates Northing (usft)	Map Coordinates Easting (usft)	Dogleg Rate (°/100usft)	Vertical Section (usft)	Comments
0.00	0.00	0.00	-2,691.65	0.00	0.00 N	0.00 E	708,028.35	1,118,509.48	0.00	0.00	
469.00	1.15	278.18	-2,222.68	468.97	0.67 N	4.66 W	708,029.02	1,118,504.82	0.25	1.94	First Sperry MWD Survey @ 469.00'MD
927.00	2.85	282.69	-1,764.98	926.67	3.83 N	20.32 W	708,032.18	1,118,489.16	0.37	9.34	
1,181.00	4.28	290.27	-1,511.47	1,180.18	8.50 N	35.37 W	708,036.85	1,118,474.11	0.59	18.02	
1,258.00	3.79	295.96	-1,434.66	1,256.99	10.61 N	40.35 W	708,038.96	1,118,469.13	0.82	21.43	
1,319.00	3.03	290.40	-1,373.77	1,317.88	12.05 N	43.68 W	708,040.40	1,118,465.80	1.36	23.75	
1,411.00	2.34	209.62	-1,281.85	1,409.80	11.26 N	46.88 W	708,039.61	1,118,462.60	3.82	23.89	
1,501.00	4.91	173.47	-1,192.02	1,499.63	5.84 N	47.36 W	708,034.19	1,118,462.12	3.69	18.81	
1,592.00	7.00	151.94	-1,101.51	1,590.14	2.93 S	44.30 W	708,025.42	1,118,465.18	3.32	9.54	
1,866.00	6.88	143.89	-829.51	1,862.14	30.92 S	26.78 W	707,997.43	1,118,482.70	0.36	-22.23	
1,891.25	6.86	143.70	-804.44	1,887.21	33.35 S	24.99 W	707,995.00	1,118,484.49	0.13	-25.07	Cross 200' FSL @ 1891.25'MD
2,143.00	6.62	141.68	-554.43	2,137.22	56.85 S	7.10 W	707,971.50	1,118,502.38	0.13	-52.62	
2,236.00	6.99	142.64	-462.09	2,229.56	65.55 S	0.34 W	707,962.80	1,118,509.14	0.42	-62.86	
2,330.00	6.06	144.95	-368.70	2,322.95	74.16 S	5.98 E	707,954.19	1,118,515.46	1.03	-72.89	
2,425.00	3.80	144.23	-274.05	2,417.60	80.82 S	10.70 E	707,947.53	1,118,520.18	2.38	-80.60	
2,520.00	4.12	138.88	-179.28	2,512.37	85.95 S	14.78 E	707,942.40	1,118,524.26	0.51	-86.66	
2,615.00	3.68	144.61	-84.50	2,607.15	91.00 S	18.79 E	707,937.35	1,118,528.27	0.62	-92.63	
2,710.00	2.31	159.97	10.37	2,702.02	95.29 S	21.22 E	707,933.06	1,118,530.70	1.66	-97.42	
2,804.00	2.04	154.93	104.30	2,795.95	98.58 S	22.57 E	707,929.77	1,118,532.05	0.35	-100.97	
2,900.00	1.85	152.57	200.25	2,891.90	101.50 S	24.01 E	707,926.85	1,118,533.49	0.21	-104.17	
2,994.00	2.38	120.69	294.19	2,985.84	103.85 S	26.39 E	707,924.50	1,118,535.87	1.35	-107.09	
3,090.00	2.52	114.52	390.10	3,081.75	105.74 S	30.02 E	707,922.61	1,118,539.50	0.31	-109.92	
3,184.00	1.96	122.90	484.03	3,175.68	107.47 S	33.25 E	707,920.88	1,118,542.73	0.69	-112.48	
3,279.00	2.41	119.83	578.96	3,270.61	109.35 S	36.35 E	707,919.00	1,118,545.83	0.49	-115.15	
3,373.00	2.58	116.54	672.87	3,364.52	111.28 S	39.96 E	707,917.07	1,118,549.44	0.24	-118.00	
3,469.00	2.24	113.97	768.78	3,460.43	113.00 S	43.60 E	707,915.35	1,118,553.08	0.37	-120.68	
3,564.00	1.98	116.56	863.72	3,555.37	114.49 S	46.77 E	707,913.86	1,118,556.25	0.29	-122.99	
3,659.00	1.99	120.60	958.66	3,650.31	116.07 S	49.66 E	707,912.28	1,118,559.14	0.15	-125.31	
3,753.00	1.88	114.03	1,052.61	3,744.26	117.52 S	52.47 E	707,910.83	1,118,561.95	0.26	-127.49	
3,847.00	1.97	115.87	1,146.56	3,838.21	118.86 S	55.33 E	707,909.49	1,118,564.81	0.12	-129.57	
3,942.00	1.66	119.69	1,241.51	3,933.16	120.25 S	58.00 E	707,908.10	1,118,567.48	0.35	-131.65	
4,036.00	1.61	129.33	1,335.47	4,027.12	121.76 S	60.20 E	707,906.59	1,118,569.68	0.30	-133.72	
4,131.00	1.34	133.86	1,430.44	4,122.09	123.38 S	62.03 E	707,904.97	1,118,571.51	0.31	-135.78	
4,226.00	1.92	115.85	1,525.40	4,217.05	124.84 S	64.27 E	707,903.51	1,118,573.75	0.81	-137.81	
4,320.00	2.05	114.84	1,619.34	4,310.99	126.23 S	67.21 E	707,902.12	1,118,576.69	0.14	-139.96	
4,415.00	2.32	118.99	1,714.27	4,405.92	127.88 S	70.43 E	707,900.47	1,118,579.91	0.33	-142.44	
4,510.00	2.70	111.54	1,809.18	4,500.83	129.63 S	74.20 E	707,898.72	1,118,583.68	0.53	-145.18	
4,605.00	2.63	112.58	1,904.08	4,595.73	131.29 S	78.29 E	707,897.06	1,118,587.77	0.09	-147.91	
4,700.00	2.74	117.17	1,998.98	4,690.63	133.17 S	82.32 E	707,895.18	1,118,591.80	0.25	-150.83	
4,794.00	2.65	114.61	2,092.87	4,784.52	135.10 S	86.30 E	707,893.25	1,118,595.78	0.16	-153.80	
4,889.00	2.50	115.17	2,187.78	4,879.43	136.89 S	90.17 E	707,891.46	1,118,599.65	0.16	-156.60	

Design Report for UL Guanella 05-17 1H - Final Surveys

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	TVD below System (usft)	Vertical Depth (usft)	Local Coordinates Northing (usft)	Local Coordinates Easting (usft)	Map Coordinates Northing (usft)	Map Coordinates Easting (usft)	Dogleg Rate (°/100usft)	Vertical Section (usft)	Comments
4,955.00	2.40	116.74	2,253.72	4,945.37	138.13 S	92.71 E	707,890.22	1,118,602.19	0.18	-158.49	
5,083.00	2.36	114.35	2,381.61	5,073.26	140.42 S	97.50 E	707,887.93	1,118,606.98	0.08	-162.03	
5,178.00	1.70	107.10	2,476.55	5,168.20	141.64 S	100.63 E	707,886.71	1,118,610.11	0.74	-164.07	
5,273.00	0.18	115.73	2,571.53	5,263.18	142.12 S	102.11 E	707,886.23	1,118,611.59	1.60	-164.95	
5,368.00	1.30	259.64	2,666.52	5,358.17	142.38 S	101.19 E	707,885.97	1,118,610.67	1.53	-164.94	
5,462.00	2.26	269.78	2,760.48	5,452.13	142.58 S	98.28 E	707,885.77	1,118,607.76	1.07	-164.32	
5,557.00	1.50	268.40	2,855.42	5,547.07	142.62 S	95.17 E	707,885.73	1,118,604.65	0.80	-163.49	
5,652.00	1.52	260.26	2,950.39	5,642.04	142.87 S	92.68 E	707,885.48	1,118,602.16	0.23	-163.04	
5,747.00	1.90	270.14	3,045.35	5,737.00	143.08 S	89.87 E	707,885.27	1,118,599.35	0.50	-162.45	
5,842.00	1.10	262.64	3,140.32	5,831.97	143.19 S	87.39 E	707,885.16	1,118,596.87	0.87	-161.87	
5,937.00	1.07	256.61	3,235.30	5,926.95	143.51 S	85.62 E	707,884.84	1,118,595.10	0.12	-161.69	
6,032.00	0.99	257.39	3,330.28	6,021.93	143.90 S	83.95 E	707,884.45	1,118,593.43	0.09	-161.59	
6,222.00	1.45	195.79	3,520.25	6,211.90	146.57 S	81.70 E	707,881.78	1,118,591.18	0.69	-163.53	
6,412.00	0.90	194.27	3,710.21	6,401.86	150.33 S	80.68 E	707,878.02	1,118,590.16	0.29	-166.86	
6,507.00	0.85	175.40	3,805.20	6,496.85	151.75 S	80.55 E	707,876.60	1,118,590.03	0.31	-168.19	
6,602.00	1.80	248.57	3,900.17	6,591.82	153.00 S	79.22 E	707,875.35	1,118,588.70	1.85	-169.02	
6,697.00	1.03	250.41	3,995.14	6,686.79	153.83 S	77.02 E	707,874.52	1,118,586.50	0.81	-169.20	
6,791.00	0.99	260.90	4,089.13	6,780.78	154.24 S	75.43 E	707,874.11	1,118,584.91	0.20	-169.15	
6,885.00	1.04	251.51	4,183.12	6,874.77	154.64 S	73.81 E	707,873.71	1,118,583.29	0.18	-169.09	
6,980.00	0.74	237.21	4,278.10	6,969.75	155.25 S	72.48 E	707,873.10	1,118,581.96	0.39	-169.30	
7,075.00	0.81	242.74	4,373.10	7,064.75	155.89 S	71.37 E	707,872.46	1,118,580.85	0.11	-169.60	
7,170.00	0.49	248.33	4,468.09	7,159.74	156.34 S	70.39 E	707,872.01	1,118,579.87	0.34	-169.77	
7,265.00	0.11	184.80	4,563.09	7,254.74	156.59 S	70.01 E	707,871.76	1,118,579.49	0.48	-169.89	
7,360.00	0.22	257.57	4,658.09	7,349.74	156.72 S	69.82 E	707,871.63	1,118,579.30	0.23	-169.97	
7,455.00	0.52	327.41	4,753.09	7,444.74	156.39 S	69.41 E	707,871.96	1,118,578.89	0.52	-169.54	
7,549.00	0.52	59.62	4,847.08	7,538.73	155.82 S	69.55 E	707,872.53	1,118,579.03	0.80	-169.03	
7,644.00	1.48	73.64	4,942.07	7,633.72	155.25 S	71.10 E	707,873.10	1,118,580.58	1.04	-168.92	
7,739.00	0.73	48.81	5,037.05	7,728.70	154.51 S	72.73 E	707,873.84	1,118,582.21	0.92	-168.66	
7,836.00	0.28	336.14	5,134.05	7,825.70	153.88 S	73.10 E	707,874.47	1,118,582.58	0.72	-168.16	
7,930.00	0.44	325.50	5,228.04	7,919.69	153.38 S	72.81 E	707,874.97	1,118,582.29	0.18	-167.59	
8,026.00	0.29	358.57	5,324.04	8,015.69	152.83 S	72.59 E	707,875.52	1,118,582.07	0.26	-167.01	
8,120.00	0.32	41.37	5,418.04	8,109.69	152.40 S	72.76 E	707,875.95	1,118,582.24	0.24	-166.64	
8,214.00	0.50	55.18	5,512.04	8,203.69	151.96 S	73.27 E	707,876.39	1,118,582.75	0.22	-166.36	
8,309.00	0.66	65.89	5,607.03	8,298.68	151.50 S	74.11 E	707,876.85	1,118,583.59	0.20	-166.16	
8,404.00	0.94	64.03	5,702.02	8,393.67	150.94 S	75.31 E	707,877.41	1,118,584.79	0.30	-165.95	
8,499.00	1.12	64.93	5,797.01	8,488.66	150.21 S	76.85 E	707,878.14	1,118,586.33	0.19	-165.67	
8,593.00	0.25	299.58	5,891.00	8,582.65	149.71 S	77.50 E	707,878.64	1,118,586.98	1.36	-165.38	
8,688.00	0.47	288.10	5,986.00	8,677.65	149.49 S	76.95 E	707,878.86	1,118,586.43	0.24	-165.02	
8,782.00	0.56	313.15	6,080.00	8,771.65	149.06 S	76.25 E	707,879.29	1,118,585.73	0.26	-164.40	
8,876.00	0.72	313.89	6,173.99	8,865.64	148.33 S	75.49 E	707,880.02	1,118,584.97	0.17	-163.50	
8,971.00	0.61	331.39	6,268.99	8,960.64	147.48 S	74.82 E	707,880.87	1,118,584.30	0.24	-162.49	

Design Report for UL Guanella 05-17 1H - Final Surveys

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	TVD below System (usft)	Vertical Depth (usft)	Local Coordinates Northing (usft)	Local Coordinates Easting (usft)	Map Coordinates Northing (usft)	Map Coordinates Easting (usft)	Dogleg Rate (°/100usft)	Vertical Section (usft)	Comments
9,064.00	0.53	319.97	6,361.98	9,053.63	146.71 S	74.30 E	707,881.64	1,118,583.78	0.15	-161.61	
9,159.00	1.48	317.02	6,456.97	9,148.62	145.48 S	73.19 E	707,882.87	1,118,582.67	1.00	-160.11	
9,254.00	2.44	329.08	6,551.91	9,243.56	142.85 S	71.31 E	707,885.50	1,118,580.79	1.09	-157.06	
9,348.00	2.31	337.27	6,645.83	9,337.48	139.38 S	69.55 E	707,888.97	1,118,579.03	0.39	-153.24	
9,443.00	2.50	350.77	6,740.75	9,432.40	135.57 S	68.48 E	707,892.78	1,118,577.96	0.63	-149.28	
9,633.00	1.73	17.28	6,930.62	9,622.27	128.74 S	68.66 E	707,899.61	1,118,578.14	0.65	-142.78	
9,728.00	2.60	185.96	7,025.59	9,717.24	129.52 S	68.87 E	707,898.83	1,118,578.35	4.54	-143.58	
9,822.00	2.84	179.67	7,119.49	9,811.14	133.97 S	68.66 E	707,894.38	1,118,578.14	0.41	-147.79	
9,917.00	2.72	159.06	7,214.38	9,906.03	138.42 S	69.48 E	707,889.93	1,118,578.96	1.05	-152.30	
10,012.00	3.04	146.04	7,309.26	10,000.91	142.62 S	71.69 E	707,885.73	1,118,581.17	0.76	-156.95	
10,107.00	2.32	160.05	7,404.16	10,095.81	146.52 S	73.75 E	707,881.83	1,118,583.23	1.02	-161.27	
10,201.00	1.54	156.40	7,498.10	10,189.75	149.46 S	74.91 E	707,878.89	1,118,584.39	0.84	-164.42	
10,296.00	1.83	112.01	7,593.06	10,284.71	151.20 S	76.83 E	707,877.15	1,118,586.31	1.37	-166.62	
10,390.00	0.57	73.74	7,687.04	10,378.69	151.63 S	78.67 E	707,876.72	1,118,588.15	1.52	-167.55	
10,485.00	0.94	314.89	7,782.04	10,473.69	150.95 S	78.57 E	707,877.40	1,118,588.05	1.38	-166.87	
10,580.00	0.96	359.40	7,877.03	10,568.68	149.60 S	78.01 E	707,878.75	1,118,587.49	0.76	-165.42	
10,674.00	1.09	350.18	7,971.01	10,662.66	147.93 S	77.85 E	707,880.42	1,118,587.33	0.22	-163.77	
10,764.00	1.14	342.55	8,061.00	10,752.65	146.24 S	77.43 E	707,882.11	1,118,586.91	0.17	-162.02	
10,847.00	1.58	356.27	8,143.97	10,835.62	144.31 S	77.11 E	707,884.04	1,118,586.59	0.66	-160.08	
10,894.00	3.93	349.91	8,190.91	10,882.56	142.08 S	76.79 E	707,886.27	1,118,586.27	5.03	-157.85	
10,941.00	9.07	339.87	8,237.60	10,929.25	137.01 S	75.23 E	707,891.34	1,118,584.71	11.16	-152.55	
10,988.00	14.08	342.65	8,283.63	10,975.28	128.07 S	72.25 E	707,900.28	1,118,581.73	10.72	-143.13	
11,035.00	17.30	346.37	8,328.87	11,020.52	115.81 S	68.89 E	707,912.54	1,118,578.37	7.17	-130.43	
11,082.00	18.73	344.13	8,373.57	11,065.22	101.76 S	65.18 E	707,926.59	1,118,574.66	3.38	-115.90	
11,128.00	21.63	338.47	8,416.74	11,108.39	86.77 S	60.05 E	707,941.58	1,118,569.53	7.59	-100.07	
11,175.00	25.02	339.52	8,459.90	11,151.55	69.39 S	53.39 E	707,958.96	1,118,562.87	7.27	-81.53	
11,221.00	30.48	338.82	8,500.59	11,192.24	49.39 S	45.77 E	707,978.96	1,118,555.25	11.89	-60.19	
11,268.00	35.84	343.96	8,539.93	11,231.58	25.03 S	37.65 E	708,003.32	1,118,547.13	12.87	-34.53	
11,284.30	36.25	344.07	8,553.11	11,244.76	15.81 S	35.01 E	708,012.54	1,118,544.49	2.52	-24.94	Cross 200 'FSL @ 11284.30'MD
11,315.00	37.01	344.26	8,577.75	11,269.40	1.81 N	30.01 E	708,030.16	1,118,539.49	2.52	-6.62	
11,362.00	43.79	337.80	8,613.53	11,305.18	30.53 N	20.01 E	708,058.88	1,118,529.49	16.94	23.74	
11,409.00	51.31	337.72	8,645.23	11,336.88	62.61 N	6.90 E	708,090.96	1,118,516.38	16.00	58.20	
11,456.00	56.64	339.10	8,672.87	11,364.52	97.94 N	7.07 W	708,126.29	1,118,502.41	11.59	96.03	
11,502.00	61.86	337.68	8,696.38	11,388.03	134.68 N	21.64 W	708,163.03	1,118,487.84	11.65	135.37	
11,549.00	67.75	335.45	8,716.38	11,408.03	173.67 N	38.56 W	708,202.02	1,118,470.92	13.25	177.54	
11,595.00	74.75	335.38	8,731.16	11,422.81	213.26 N	56.67 W	708,241.61	1,118,452.81	15.22	220.60	
11,642.00	82.90	339.63	8,740.26	11,431.91	255.82 N	74.27 W	708,284.17	1,118,435.21	19.47	266.38	
11,689.00	86.76	340.83	8,744.50	11,436.15	299.86 N	90.10 W	708,328.21	1,118,419.38	8.60	313.09	
11,728.00	85.77	339.99	8,747.04	11,438.69	336.53 N	103.15 W	708,364.88	1,118,406.33	3.33	351.94	
11,821.00	90.28	340.68	8,750.24	11,441.89	424.03 N	134.42 W	708,452.38	1,118,375.06	4.91	444.69	
11,915.00	89.91	340.11	8,750.09	11,441.74	512.58 N	165.96 W	708,540.93	1,118,343.52	0.72	538.52	

Design Report for UL Guanella 05-17 1H - Final Surveys

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	TVD below System (usft)	Vertical Depth (usft)	Local Coordinates Northing (usft)	Local Coordinates Easting (usft)	Map Coordinates Northing (usft)	Map Coordinates Easting (usft)	Dogleg Rate (°/100usft)	Vertical Section (usft)	Comments
12,009.00	92.34	341.75	8,748.24	11,439.89	601.39 N	196.66 W	708,629.74	1,118,312.82	3.12	632.37	
12,102.00	92.53	340.05	8,744.29	11,435.94	689.19 N	227.06 W	708,717.54	1,118,282.42	1.84	725.16	
12,195.00	91.11	338.58	8,741.33	11,432.98	776.14 N	259.89 W	708,804.49	1,118,249.59	2.20	817.83	
12,289.00	90.62	339.26	8,739.92	11,431.57	863.84 N	293.70 W	708,892.19	1,118,215.78	0.89	911.47	
12,382.00	92.28	343.88	8,737.56	11,429.21	952.02 N	323.08 W	708,980.37	1,118,186.40	5.28	1,004.34	
12,414.00	88.71	343.77	8,737.28	11,428.93	982.74 N	332.00 W	709,011.09	1,118,177.48	11.16	1,036.34	
12,476.00	88.49	344.08	8,738.80	11,430.45	1,042.30 N	349.16 W	709,070.65	1,118,160.32	0.61	1,098.32	
12,569.00	91.48	348.53	8,738.82	11,430.47	1,132.63 N	371.17 W	709,160.98	1,118,138.31	5.76	1,191.19	
12,663.00	93.64	349.96	8,734.63	11,426.28	1,224.87 N	388.69 W	709,253.22	1,118,120.79	2.75	1,284.67	
12,756.00	88.64	347.97	8,732.78	11,424.43	1,316.10 N	406.48 W	709,344.45	1,118,103.00	5.79	1,377.24	
12,849.00	91.39	348.44	8,732.75	11,424.40	1,407.13 N	425.49 W	709,435.48	1,118,083.99	3.00	1,469.96	
12,943.00	88.18	347.58	8,733.10	11,424.75	1,499.07 N	445.02 W	709,527.42	1,118,064.46	3.54	1,563.70	
13,036.00	91.70	348.29	8,733.20	11,424.85	1,590.00 N	464.45 W	709,618.35	1,118,045.03	3.86	1,656.44	
13,130.00	92.93	347.39	8,729.40	11,421.05	1,681.81 N	484.24 W	709,710.16	1,118,025.24	1.62	1,750.13	
13,224.00	91.29	343.77	8,725.94	11,417.59	1,772.77 N	507.63 W	709,801.12	1,118,001.85	4.23	1,844.00	
13,318.00	91.14	343.24	8,723.95	11,415.60	1,862.88 N	534.31 W	709,891.23	1,117,975.17	0.59	1,937.98	
13,411.00	88.00	338.02	8,724.65	11,416.30	1,950.57 N	565.14 W	709,978.92	1,117,944.34	6.55	2,030.79	
13,505.00	92.06	338.15	8,724.60	11,416.25	2,037.76 N	600.21 W	710,066.11	1,117,909.27	4.32	2,124.30	
13,598.00	90.68	338.88	8,722.37	11,414.02	2,124.27 N	634.27 W	710,152.62	1,117,875.21	1.68	2,216.87	
13,691.00	94.69	341.54	8,718.02	11,409.67	2,211.66 N	665.71 W	710,240.01	1,117,843.77	5.17	2,309.56	
13,785.00	92.71	342.72	8,711.95	11,403.60	2,300.93 N	694.49 W	710,329.28	1,117,814.99	2.45	2,403.32	
13,878.00	89.88	342.61	8,709.85	11,401.50	2,389.67 N	722.19 W	710,418.02	1,117,787.29	3.05	2,496.27	
13,972.00	88.06	341.74	8,711.54	11,403.19	2,479.14 N	750.96 W	710,507.49	1,117,758.52	2.15	2,590.21	
14,065.00	91.08	343.14	8,712.24	11,403.89	2,567.79 N	779.02 W	710,596.14	1,117,730.46	3.58	2,683.16	
14,159.00	89.45	342.40	8,711.80	11,403.45	2,657.57 N	806.86 W	710,685.92	1,117,702.62	1.90	2,777.14	
14,252.00	92.74	343.26	8,710.03	11,401.68	2,746.40 N	834.30 W	710,774.75	1,117,675.18	3.66	2,870.10	
14,345.00	92.03	338.98	8,706.15	11,397.80	2,834.29 N	864.37 W	710,862.64	1,117,645.11	4.66	2,962.89	
14,439.00	90.86	343.51	8,703.78	11,395.43	2,923.25 N	894.57 W	710,951.60	1,117,614.91	4.98	3,056.74	
14,532.00	89.29	345.16	8,703.66	11,395.31	3,012.79 N	919.68 W	711,041.14	1,117,589.80	2.45	3,149.73	
14,624.00	93.48	348.67	8,701.44	11,393.09	3,102.34 N	940.50 W	711,130.69	1,117,568.98	5.94	3,241.54	
14,718.00	94.63	349.25	8,694.79	11,386.44	3,194.37 N	958.45 W	711,222.72	1,117,551.03	1.37	3,334.92	
14,811.00	96.64	349.62	8,685.66	11,377.31	3,285.34 N	975.42 W	711,313.69	1,117,534.06	2.20	3,427.02	
14,904.00	93.27	345.18	8,677.62	11,369.27	3,375.73 N	995.63 W	711,404.08	1,117,513.85	5.98	3,519.46	
14,998.00	92.25	345.46	8,673.10	11,364.75	3,466.55 N	1,019.43 W	711,494.90	1,117,490.05	1.13	3,613.32	
15,091.00	89.20	346.17	8,671.92	11,363.57	3,556.70 N	1,042.21 W	711,585.05	1,117,467.27	3.37	3,706.24	
15,184.00	91.17	347.20	8,671.62	11,363.27	3,647.19 N	1,063.63 W	711,675.54	1,117,445.85	2.39	3,799.12	
15,277.00	92.00	347.91	8,669.05	11,360.70	3,737.97 N	1,083.66 W	711,766.32	1,117,425.82	1.17	3,891.88	
15,371.00	89.10	347.68	8,668.15	11,359.80	3,829.83 N	1,103.53 W	711,858.18	1,117,405.95	3.09	3,985.64	
15,464.00	89.69	347.42	8,669.13	11,360.78	3,920.64 N	1,123.58 W	711,948.99	1,117,385.90	0.69	4,078.44	
15,558.00	94.52	345.87	8,665.68	11,357.33	4,012.01 N	1,145.27 W	712,040.36	1,117,364.21	5.40	4,172.23	
15,651.00	88.98	344.09	8,662.84	11,354.49	4,101.75 N	1,169.35 W	712,130.10	1,117,340.13	6.26	4,265.13	

Design Report for UL Guanella 05-17 1H - Final Surveys

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	TVD below System (usft)	Vertical Depth (usft)	Local Coordinates Northing (usft)	Local Coordinates Easting (usft)	Map Coordinates Northing (usft)	Map Coordinates Easting (usft)	Dogleg Rate (°/100usft)	Vertical Section (usft)	Comments
15,745.00	86.80	345.36	8,666.30	11,357.95	4,192.36 N	1,194.10 W	712,220.71	1,117,315.38	2.68	4,359.04	
15,838.00	89.91	345.87	8,668.97	11,360.62	4,282.39 N	1,217.19 W	712,310.74	1,117,292.29	3.39	4,451.95	
15,931.00	93.46	341.90	8,666.23	11,357.88	4,371.67 N	1,242.98 W	712,400.02	1,117,266.50	5.72	4,544.87	
16,025.00	91.05	340.28	8,662.53	11,354.18	4,460.52 N	1,273.42 W	712,488.87	1,117,236.06	3.09	4,638.68	
16,119.00	90.15	340.73	8,661.55	11,353.20	4,549.12 N	1,304.78 W	712,577.47	1,117,204.70	1.07	4,732.52	
16,212.00	90.22	340.34	8,661.25	11,352.90	4,636.81 N	1,335.78 W	712,665.16	1,117,173.70	0.43	4,825.37	
16,248.25	90.98	340.26	8,660.87	11,352.52	4,670.93 N	1,347.99 W	712,699.28	1,117,161.49	2.10	4,861.55	Cross 200' FNL@ 16248.25'MD
16,305.00	92.16	340.14	8,659.32	11,350.97	4,724.31 N	1,367.21 W	712,752.66	1,117,142.27	2.10	4,918.16	Last Sperry MWD Survey @ 16305.00'MD
16,361.00	92.16	340.14	8,657.21	11,348.86	4,776.94 N	1,386.22 W	712,805.29	1,117,123.26	0.00	4,974.01	Projection to Bit @ 16361MD/11357TVD

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
469.00	468.97	0.67	-4.66	First Sperry MWD Survey @ 469.00'MD
1,891.25	1,887.21	-33.35	-24.99	Cross 200' FSL @ 1891.25'MD
11,284.30	11,244.76	-15.81	35.01	Cross 200 'FSL @ 11284.30'MD
16,248.25	11,352.52	4,670.93	-1,347.99	Cross 200' FNL@ 16248.25'MD
16,305.00	11,350.97	4,724.31	-1,367.21	Last Sperry MWD Survey @ 16305.00'MD
16,361.00	11,348.86	4,776.94	-1,386.22	Projection to Bit @ 16361MD/11357TVD

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (usft)	Origin +E/-W (usft)	Start TVD (usft)
User	No Target (Freehand)	343.82	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
469.00	1,181.00	MWD (Surface)	MWD+SC
1,258.00	4,955.00	MWD (12.25in)	MWD+SC
5,083.00	10,764.00	MWD (9.875in)	MWD+SC
10,847.00	16,305.00	MWD (curve & lateral)	MWD+SC
16,361.00	16,361.00	Projection to Bit	Blind (OWSG)

Design Report for UL Guanella 05-17 1H - Final Surveys

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
10,806.00	10,794.64	7 5/8"	7-5/8	9-7/8

Design Targets

Target Name - hit/miss target - Shape	Dip Angle ()	Dip Dir. ()	TVD ()	+N/-S ()	+E/-W ()	Northing ()	Easting ()	Latitude	Longitude
()									

Directional Difficulty Index

Average Dogleg over Survey:	1.89 °/100usft	Maximum Dogleg over Survey:	19.47 °/100usft at 11,642.00 usft
Net Tortousity applicable to Plans:	1.25 °/100usft	Directional Difficulty Index:	6.389

Audit Info

North Reference Sheet for UL Guanella 05-17 - UL Guanella 05-17 1H - Wellbore #1

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to GL2666.65'+25ft @ 2691.65usft (Cactus 139(+25ft)). Northing and Easting are relative to UL Guanella 05-17 1H

Coordinate System is US State Plane 1927 (Exact solution), Texas Central 4203 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is -100.33333333°, Longitude Origin:0.00000000°, Latitude Origin:31.88333333°

False Easting: 2,000,000.00usft, False Northing: 0.00usft, Scale Reduction: 0.99993305

Grid Coordinates of Well: 708,028.35 usft N, 1,118,509.48 usft E

Geographical Coordinates of Well: 31° 34' 57.37" N, 103° 09' 51.80" W

Grid Convergence at Surface is: -1.46°

Based upon Minimum Curvature type calculations, at a Measured Depth of 16,361.00usft

the Bottom Hole Displacement is 4,974.01usft in the Direction of 343.82° (Grid).

Magnetic Convergence at surface is: -8.32° (19 May 2017, , BGGM2017)