



Directional Survey Report

Company: QEP	Well Surface Location	Report Date: Mar 13 2020
Well: UL 2539 W13 09SB	Latitude: 32.383830	Time: 11:03
County: Andrews	Longitude: -102.215257	Mag Reference: Grid North
State: Texas	Reference: NAD 1927	Mag Correction: 8.67
Field: Spraberry (Trend Area)	Y (Northing): 293,569.13	Vert Sect. Azi: 166.49
API: 42-003-48236	X (Easting): 544,860.70	Perm Datum: Mean Sea Level
Rig: Savanna 688	Field Engr: Matt O'Leary	Depth Ref: Rotary Table
Service Co: Gordon Technologies, LLC	Nicholas White	RKB Height: 19.5
Job #: GT2010327		GL Elev: 2938
Survey Calc: Minimum Curvature		

Survey	MD	Inc	Azimuth	TVD	VS	Rectangular Offsets		Course		Temp	Closure		Source
						NS	EW	Length	DLS		Distance	Azimuth	
Tie In	0	0	0	0	0	0	0	0	0	0	0	0	
1	133.00	0.41	105.76	133.00	0.23	-0.13	0.46	133.00	0.31	65.86	0.48	105.76	MWD Run 1
2	194.00	0.60	132.31	194.00	0.60	-0.40	0.90	61.00	0.49	65.86	0.99	114.05	MWD Run 1
3	255.00	0.56	132.84	254.99	1.12	-0.82	1.36	61.00	0.07	65.86	1.59	121.14	MWD Run 1
4	317.00	0.31	161.75	316.99	1.54	-1.19	1.63	62.00	0.52	65.86	2.02	125.99	MWD Run 1
5	378.00	0.44	159.33	377.99	1.93	-1.56	1.77	61.00	0.21	65.86	2.36	131.47	MWD Run 1
6	440.00	0.55	166.29	439.99	2.47	-2.07	1.92	62.00	0.20	65.86	2.83	137.17	MWD Run 1
7	501.00	0.70	146.59	500.98	3.11	-2.67	2.20	61.00	0.43	65.86	3.46	140.55	MWD Run 1
8	563.00	0.66	92.34	562.98	3.56	-3.00	2.76	62.00	1.00	65.86	4.08	137.36	MWD Run 1
9	625.00	1.58	49.19	624.97	3.27	-2.46	3.77	62.00	1.92	65.86	4.50	123.11	MWD Run 1
10	687.00	1.79	52.47	686.94	2.48	-1.31	5.18	62.00	0.37	65.86	5.34	104.17	MWD Run 1
11	749.00	2.15	41.56	748.91	1.42	0.15	6.72	62.00	0.84	65.86	6.72	88.70	MWD Run 1
12	810.00	3.67	17.92	809.83	-0.90	2.87	8.08	61.00	3.12	65.86	8.57	70.47	MWD Run 1
13	872.00	5.00	9.07	871.65	-5.09	7.42	9.12	62.00	2.40	65.86	11.76	50.85	MWD Run 1
14	934.00	5.39	5.91	933.39	-10.33	12.99	9.84	62.00	0.78	65.86	16.30	37.16	MWD Run 1
15	995.00	5.22	4.55	994.13	-15.67	18.60	10.36	61.00	0.35	65.86	21.29	29.11	MWD Run 1
16	1058.00	4.56	10.13	1056.90	-20.69	23.93	11.03	63.00	1.29	65.86	26.34	24.74	MWD Run 1
17	1120.00	3.21	17.64	1118.76	-24.43	28.01	11.99	62.00	2.32	65.86	30.46	23.17	MWD Run 1
18	1183.00	2.98	14.40	1181.67	-27.39	31.27	12.93	63.00	0.46	65.86	33.84	22.46	MWD Run 1

19	1245.00	2.76	10.54	1243.59	-30.18	34.30	13.60	62.00	0.47	65.86	36.90	21.63	MWD Run 1
20	1308.00	2.61	6.76	1306.52	-32.91	37.22	14.05	63.00	0.37	65.86	39.78	20.68	MWD Run 1
21	1371.00	2.73	359.19	1369.45	-35.72	40.14	14.19	63.00	0.59	65.86	42.58	19.47	MWD Run 1
22	1433.00	2.77	9.66	1431.38	-38.53	43.10	14.43	62.00	0.81	65.86	45.45	18.51	MWD Run 1
23	1496.00	3.22	30.10	1494.30	-41.21	46.13	15.57	63.00	1.83	65.86	48.68	18.65	MWD Run 1
24	1559.00	3.49	44.54	1557.19	-43.51	49.02	17.80	63.00	1.40	73.14	52.16	19.96	MWD Run 1
25	1622.00	3.56	48.78	1620.07	-45.43	51.68	20.62	63.00	0.43	73.14	55.64	21.75	MWD Run 1
26	1685.00	3.25	46.46	1682.96	-47.24	54.20	23.38	63.00	0.54	80.43	59.03	23.34	MWD Run 1
27	1748.00	2.85	42.90	1745.87	-49.00	56.58	25.74	63.00	0.70	80.43	62.16	24.47	MWD Run 1
28	1790.00	2.85	45.68	1787.82	-50.11	58.07	27.20	42.00	0.33	80.43	64.13	25.10	MWD Run 1
29	1889.00	2.68	39.24	1886.70	-52.77	61.58	30.43	99.00	0.36	87.71	68.69	26.29	MWD Run 2
30	1951.00	2.44	37.95	1948.64	-54.47	63.75	32.15	62.00	0.40	87.71	71.40	26.77	MWD Run 2
31	2014.00	2.34	38.74	2011.59	-56.09	65.81	33.78	63.00	0.17	87.71	73.97	27.18	MWD Run 2
32	2076.00	2.24	38.86	2073.54	-57.61	67.74	35.34	62.00	0.16	87.71	76.40	27.55	MWD Run 2
33	2139.00	2.59	43.97	2136.48	-59.13	69.72	37.10	63.00	0.65	80.43	78.98	28.02	MWD Run 2
34	2202.00	2.81	49.44	2199.41	-60.59	71.75	39.26	63.00	0.54	80.43	81.79	28.69	MWD Run 2
35	2265.00	2.88	48.80	2262.33	-62.03	73.80	41.62	63.00	0.12	80.43	84.73	29.42	MWD Run 2
36	2328.00	2.91	48.68	2325.25	-63.51	75.89	44.01	63.00	0.05	87.71	87.73	30.11	MWD Run 2
37	2390.00	2.92	44.79	2387.17	-65.08	78.05	46.31	62.00	0.32	87.71	90.76	30.68	MWD Run 2
38	2453.00	2.93	46.66	2450.09	-66.72	80.30	48.61	63.00	0.15	87.71	93.87	31.19	MWD Run 2
39	2516.00	3.00	47.29	2513.01	-68.33	82.52	50.99	63.00	0.12	87.71	97.01	31.71	MWD Run 2
40	2579.00	2.86	45.09	2575.93	-69.95	84.75	53.32	63.00	0.28	87.71	100.13	32.17	MWD Run 2
41	2642.00	2.93	43.53	2638.85	-71.64	87.03	55.54	63.00	0.17	87.71	103.24	32.55	MWD Run 2
42	2705.00	3.16	39.90	2701.76	-73.55	89.53	57.76	63.00	0.48	87.71	106.54	32.83	MWD Run 2
43	2767.00	3.32	40.75	2763.66	-75.62	92.20	60.03	62.00	0.27	109.57	110.02	33.07	MWD Run 2
44	2830.00	3.32	39.85	2826.55	-77.78	94.98	62.39	63.00	0.08	87.71	113.64	33.30	MWD Run 2
45	2893.00	3.54	44.27	2889.44	-79.90	97.77	64.92	63.00	0.55	87.71	117.36	33.58	MWD Run 2
46	2956.00	3.71	46.71	2952.31	-81.95	100.56	67.76	63.00	0.36	87.71	121.26	33.97	MWD Run 2
47	3019.00	3.85	46.22	3015.18	-84.03	103.42	70.77	63.00	0.23	87.71	125.32	34.38	MWD Run 2
48	3082.00	3.53	42.27	3078.04	-86.19	106.32	73.60	63.00	0.65	87.71	129.31	34.69	MWD Run 2
49	3145.00	3.39	35.30	3140.93	-88.50	109.28	75.98	63.00	0.70	87.71	133.10	34.81	MWD Run 2
50	3207.00	3.26	36.54	3202.83	-90.84	112.19	78.09	62.00	0.24	87.71	136.69	34.84	MWD Run 2
51	3269.00	3.23	35.69	3264.73	-93.12	115.03	80.16	62.00	0.09	87.71	140.20	34.87	MWD Run 2
52	3332.00	3.35	39.39	3327.62	-95.39	117.89	82.36	63.00	0.39	87.71	143.81	34.94	MWD Run 2
53	3395.00	3.56	40.08	3390.51	-97.66	120.81	84.79	63.00	0.34	95.00	147.59	35.06	MWD Run 2
54	3457.00	3.63	42.31	3452.39	-99.90	123.73	87.35	62.00	0.25	95.00	151.46	35.22	MWD Run 2
55	3520.00	3.84	42.52	3515.25	-102.20	126.76	90.12	63.00	0.33	95.00	155.53	35.41	MWD Run 2
56	3582.00	3.46	31.60	3577.13	-104.68	129.89	92.50	62.00	1.28	95.00	159.46	35.46	MWD Run 2

57	3645.00	3.25	24.45	3640.02	-107.43	133.13	94.24	63.00	0.74	95.00	163.11	35.29	MWD Run 2
58	3708.00	3.15	22.54	3702.92	-110.24	136.36	95.64	63.00	0.23	95.00	166.55	35.05	MWD Run 2
59	3770.00	3.20	21.46	3764.83	-113.04	139.54	96.93	62.00	0.13	95.00	169.90	34.78	MWD Run 2
60	3833.00	3.38	24.76	3827.72	-115.93	142.86	98.35	63.00	0.41	95.00	173.44	34.54	MWD Run 2
61	3896.00	3.79	26.76	3890.60	-118.98	146.41	100.06	63.00	0.68	95.00	177.34	34.35	MWD Run 2
62	3959.00	3.88	28.22	3953.46	-122.16	150.15	102.01	63.00	0.21	102.29	181.52	34.19	MWD Run 2
63	4021.00	3.78	23.85	4015.32	-125.35	153.86	103.83	62.00	0.50	109.57	185.62	34.01	MWD Run 2
64	4084.00	3.00	14.42	4078.21	-128.46	157.36	105.08	63.00	1.52	109.57	189.22	33.73	MWD Run 2
65	4147.00	3.10	10.48	4141.12	-131.47	160.63	105.80	63.00	0.37	109.57	192.34	33.37	MWD Run 2
66	4209.00	2.76	14.60	4203.04	-134.32	163.72	106.48	62.00	0.64	109.57	195.30	33.04	MWD Run 2
67	4272.00	2.11	20.25	4265.98	-136.62	166.28	107.26	63.00	1.10	116.86	197.87	32.82	MWD Run 2
68	4335.00	1.83	21.71	4328.94	-138.41	168.30	108.04	63.00	0.45	116.86	199.99	32.70	MWD Run 2
69	4397.00	2.05	22.65	4390.91	-140.11	170.25	108.83	62.00	0.36	116.86	202.06	32.59	MWD Run 2
70	4460.00	2.04	30.55	4453.87	-141.83	172.25	109.83	63.00	0.45	116.86	204.29	32.52	MWD Run 2
71	4523.00	2.20	30.42	4516.83	-143.50	174.26	111.01	63.00	0.25	116.86	206.62	32.50	MWD Run 2
72	4585.00	2.25	30.36	4578.78	-145.24	176.34	112.23	62.00	0.08	124.14	209.02	32.48	MWD Run 2
73	4648.00	2.16	26.91	4641.73	-147.03	178.46	113.39	63.00	0.25	124.14	211.44	32.43	MWD Run 2
74	4711.00	2.16	22.54	4704.69	-148.90	180.62	114.39	63.00	0.26	124.14	213.79	32.35	MWD Run 2
75	4774.00	2.34	22.50	4767.64	-150.90	182.90	115.33	63.00	0.29	124.14	216.23	32.23	MWD Run 2
76	4837.00	2.33	21.40	4830.59	-152.99	185.28	116.29	63.00	0.07	124.14	218.76	32.11	MWD Run 2
77	4900.00	2.28	20.50	4893.54	-155.08	187.65	117.20	63.00	0.10	124.14	221.24	31.99	MWD Run 2
78	4963.00	2.30	17.93	4956.49	-157.19	190.02	118.03	63.00	0.17	124.14	223.70	31.85	MWD Run 2
79	5026.00	2.37	18.72	5019.43	-159.37	192.46	118.84	63.00	0.12	131.43	226.19	31.69	MWD Run 2
80	5089.00	2.52	18.72	5082.38	-161.65	195.01	119.70	63.00	0.24	124.14	228.81	31.54	MWD Run 2
81	5152.00	2.89	24.16	5145.31	-164.08	197.77	120.79	63.00	0.71	124.14	231.74	31.42	MWD Run 2
82	5215.00	3.16	25.83	5208.22	-166.68	200.78	122.20	63.00	0.45	131.43	235.04	31.33	MWD Run 2
83	5277.00	3.09	26.05	5270.13	-169.29	203.82	123.68	62.00	0.11	131.43	238.41	31.25	MWD Run 2
84	5340.00	3.21	28.29	5333.03	-171.91	206.90	125.26	63.00	0.27	131.43	241.86	31.19	MWD Run 2
85	5403.00	3.12	27.71	5395.93	-174.51	209.97	126.89	63.00	0.15	131.43	245.33	31.15	MWD Run 2
86	5465.00	3.07	26.03	5457.84	-177.06	212.95	128.41	62.00	0.17	131.43	248.67	31.09	MWD Run 2
87	5528.00	3.22	25.11	5520.75	-179.75	216.07	129.90	63.00	0.25	131.43	252.11	31.01	MWD Run 2
88	5591.00	3.39	37.19	5583.65	-182.31	219.16	131.77	63.00	1.14	131.43	255.72	31.02	MWD Run 2
89	5653.00	3.41	48.85	5645.54	-184.33	221.83	134.27	62.00	1.11	131.43	259.30	31.19	MWD Run 2
90	5716.00	3.51	49.17	5708.42	-186.08	224.33	137.14	63.00	0.16	131.43	262.92	31.44	MWD Run 2
91	5774.00	3.31	45.21	5766.32	-187.76	226.67	139.67	58.00	0.53	131.43	266.24	31.64	MWD Run 2



MWD SURVEY CERTIFICATION
Gordon Technologies, LLC

State Of TEXAS

County Of ANDREWS

I, David Parish certify that; I am employed by Gordon Technologies, LLC.;
that I did on the day(s) of March 10, 2020 through March 13, 2020 conduct
or supervise the taking of a MWD survey from a depth of 133 feet to a depth of
5,774 feet; that the data is true, correct, complete and within the limitations of the
tool set forth by Gordon Technologies, LLC.; that I am authorized and qualified to make this report;
that this survey was conducted at the request of QEP Energy Company for the
UL 2539 W13 09SB Well, A.P.I. No. 42-003-48236 in
SPRABERRY (TREND AREA) Field and that I have reviewed this report and find that
it conforms to the principles and procedures set forth by Gordon Technologies, LLC.



Surveyor's Signature

MWD Coordinator
Title



Directional Survey Certification

Survey Company:	Native Navigation	Survey Company Job	20102473				
Well Name	UL 2539 W13 09SB	A.P.I.#	42-003-48256	Operator:	QEP Energy Services		
Latitude:	32.383830	Longitude:	-102.215257	County, State:	Martin County, Texas		
Legal Description (S,TS,R):	UL Block 7 Section 25						
Final Report	10/28/2020	Date of First Survey:	10/5/2020	Date of Last Survey:	10/14/2020		
Datum:	NAD 83	Survey MD From:	5861.00	To:	22329 FT.	Tool Type:	MWD + HRGM
Bit to Sensor:	49 FT.	Rig (Company & Number):	Unit 408		RKB Height:	21.00	
Ground Elevation:	2938.00	Northings:	293569.130	Eastings:	544860.700		
Surveyor	Jeremy Schaeffer / Rey		Depth of Final Projection:	22378 FT.			

The data and calculations for this survey have been checked by me and conform to the calibration standards and operational procedures set forth by Native Navigation. I am authorized and qualified to review the data, calculations and this report, and that the report represents a true and correct Directional Survey of this well, based on the original data corrected to Grid North and obtained at the well site. Wellbore coordinates are calculated using the minimum curvature method.


Signature

Well Planner
Title

Native Navigation
Company

10/28/20
Date

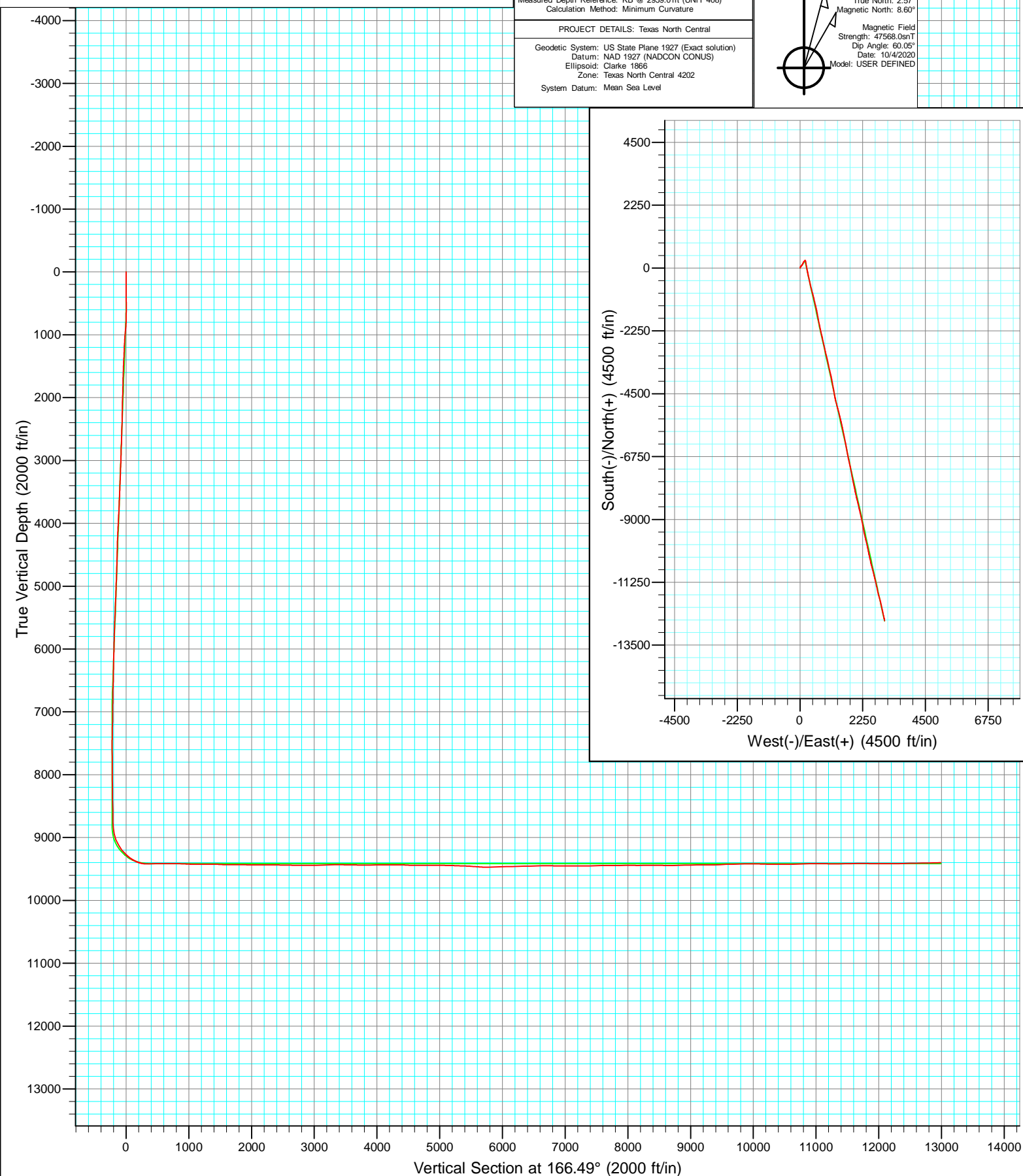
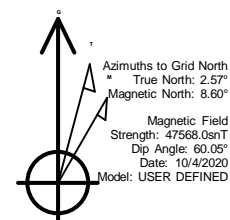
+N/-S	+E/-W	Northing	Ground Level: Easting	2938.01 Latitude	Longitude	Slot
0.00	0.00	293569.130	544860.700	32.383830	-102.215257	

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well UL 2539 W13 09SB, Grid North
Vertical (TVD) Reference: KB @ 2959.01ft (UNIT 408)
Section (VS) Reference: Slot - (0.00N, 0.00E)
Measured Depth Reference: KB @ 2959.01ft (UNIT 408)
Calculation Method: Minimum Curvature

PROJECT DETAILS: Texas North Central

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: Texas North Central 4202
System Datum: Mean Sea Level





QEP ENERGY (TX)

**Texas North Central
Martin County
UL 2539 W13 09SB**

Original Hole

Survey: MWD Surveys

Standard Survey Report

28 October, 2020



Company:	QEP ENERGY (TX)	Local Co-ordinate Reference:	Well UL 2539 W13 09SB
Project:	Texas North Central	TVD Reference:	KB @ 2959.01ft (UNIT 408)
Site:	Martin County	MD Reference:	KB @ 2959.01ft (UNIT 408)
Well:	UL 2539 W13 09SB	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	NN

Project	Texas North Central		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Texas North Central 4202		

Site		Martin County			
Site Position:		Northing:	263,112.750 usft	Latitude:	32.301342
From:	Map	Easting:	554,202.580 usft	Longitude:	-102.180632
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	-2.55 °

Well		UL 2539 W13 09SB				
Well Position	+N/-S	0.00 ft	Northing:	293,569.130 usft	Latitude:	32.383830
	+E/-W	0.00 ft	Easting:	544,860.700 usft	Longitude:	-102.215258
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	2,938.01 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	User Defined	10/4/2020	6.03	60.05	47,568

Design	As Drilled				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	166.49	

Survey Program	Date	10/28/2020			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
134.50	5,775.51	Gordon MWD (Original Hole)	MWD+IFR1+MS_WY	Fixed:v2:Rockies, crustal dec + 3-axis correction	
5,861.00	22,378.00	MWD Surveys (Original Hole)	MWD+IFR1+MS_WY	Fixed:v2:Rockies, crustal dec + 3-axis correction	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,775.51	3.31	45.21	5,767.83	226.70	139.61	-187.82	0.00	0.00	0.00	
5,861.00	3.14	47.97	5,853.18	230.00	143.10	-190.22	0.27	-0.20	3.23	
5,924.00	2.92	47.18	5,916.10	232.25	145.56	-191.83	0.36	-0.35	-1.25	
6,019.00	2.91	44.49	6,010.97	235.61	149.03	-194.29	0.14	-0.01	-2.83	
6,114.00	2.43	49.81	6,105.87	238.63	152.26	-196.47	0.57	-0.51	5.60	
6,208.00	2.52	45.92	6,199.78	241.36	155.26	-198.42	0.20	0.10	-4.14	
6,303.00	2.42	45.47	6,294.69	244.22	158.19	-200.52	0.11	-0.11	-0.47	
6,398.00	2.12	44.12	6,389.62	246.88	160.85	-202.49	0.32	-0.32	-1.42	
6,493.00	2.31	45.86	6,484.55	249.48	163.44	-204.41	0.21	0.20	1.83	
6,588.00	2.10	41.24	6,579.48	252.12	165.96	-206.39	0.29	-0.22	-4.86	

Company:	QEP ENERGY (TX)	Local Co-ordinate Reference:	Well UL 2539 W13 09SB
Project:	Texas North Central	TVD Reference:	KB @ 2959.01ft (UNIT 408)
Site:	Martin County	MD Reference:	KB @ 2959.01ft (UNIT 408)
Well:	UL 2539 W13 09SB	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	NN

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,683.00	1.97	47.07	6,674.42	254.54	168.31	-208.19	0.26	-0.14	6.14
6,777.00	1.76	47.00	6,768.37	256.63	170.55	-209.70	0.22	-0.22	-0.07
6,872.00	1.43	41.87	6,863.33	258.50	172.40	-211.09	0.38	-0.35	-5.40
6,966.00	1.25	57.73	6,957.31	259.93	174.05	-212.09	0.44	-0.19	16.87
7,061.00	1.25	62.85	7,052.28	260.95	175.85	-212.66	0.12	0.00	5.39
7,156.00	1.94	355.58	7,147.25	263.03	176.65	-214.50	1.96	0.73	-70.81
7,251.00	1.43	5.78	7,242.21	265.81	176.65	-217.20	0.62	-0.54	10.74
7,345.00	1.15	3.02	7,336.19	267.92	176.81	-219.21	0.31	-0.30	-2.94
7,440.00	1.34	29.22	7,431.17	269.84	177.41	-220.94	0.63	0.20	27.58
7,535.00	1.87	56.69	7,526.13	271.66	179.24	-222.29	0.97	0.56	28.92
7,629.00	1.25	135.68	7,620.10	271.77	181.24	-221.92	2.17	-0.66	84.03
7,724.00	1.08	128.58	7,715.09	270.47	182.67	-220.33	0.23	-0.18	-7.47
7,819.00	0.66	80.41	7,810.08	270.00	183.91	-219.58	0.85	-0.44	-50.71
7,913.00	1.21	63.05	7,904.06	270.54	185.32	-219.78	0.65	0.59	-18.47
8,008.00	1.61	125.27	7,999.04	270.23	187.31	-219.01	1.58	0.42	65.49
8,103.00	0.51	201.14	8,094.02	269.06	188.25	-217.66	1.65	-1.16	79.86
8,198.00	0.81	227.60	8,189.02	268.22	187.60	-216.98	0.44	0.32	27.85
8,292.00	0.49	172.06	8,283.01	267.37	187.16	-216.26	0.71	-0.34	-59.09
8,387.00	0.45	126.43	8,378.01	266.75	187.52	-215.57	0.39	-0.04	-48.03
8,482.00	1.92	145.80	8,472.99	265.21	188.71	-213.80	1.58	1.55	20.39
8,577.00	1.85	135.82	8,567.94	262.79	190.68	-210.99	0.35	-0.07	-10.51
8,671.00	1.99	113.25	8,661.88	261.06	193.23	-208.71	0.81	0.15	-24.01
8,766.00	1.52	88.85	8,756.84	260.43	196.01	-207.45	0.92	-0.49	-25.68
8,860.00	3.48	158.11	8,850.76	257.81	198.32	-204.36	3.48	2.09	73.68
8,955.00	13.57	168.80	8,944.60	244.17	201.57	-190.34	10.71	10.62	11.25
9,050.00	21.57	169.85	9,035.09	216.00	206.82	-161.72	8.43	8.42	1.11
9,145.00	29.28	170.20	9,120.82	175.86	213.86	-121.04	8.12	8.12	0.37
9,240.00	38.12	169.99	9,199.78	123.98	222.93	-68.49	9.31	9.31	-0.22
9,335.00	46.19	170.02	9,270.15	61.25	233.98	-4.90	8.49	8.49	0.03
9,429.00	54.56	170.83	9,330.05	-10.09	245.99	67.26	8.93	8.90	0.86
9,524.00	64.51	167.86	9,378.16	-90.43	261.21	148.93	10.81	10.47	-3.13
9,618.00	76.44	168.55	9,409.52	-177.00	279.27	237.33	12.71	12.69	0.73
9,713.00	89.98	168.44	9,420.73	-269.22	298.04	331.38	14.25	14.25	-0.12
9,761.00	91.46	167.59	9,420.12	-316.17	308.01	379.36	3.56	3.08	-1.77
9,855.00	91.36	167.86	9,417.81	-407.99	327.99	473.31	0.31	-0.11	0.29
9,951.00	91.24	167.08	9,415.63	-501.68	348.81	569.27	0.82	-0.13	-0.81
10,046.00	89.95	166.04	9,414.65	-594.07	370.89	664.26	1.74	-1.36	-1.09
10,141.00	90.07	165.75	9,414.63	-686.21	394.04	759.26	0.33	0.13	-0.31
10,236.00	87.31	165.17	9,416.80	-778.13	417.88	854.21	2.97	-2.91	-0.61
10,331.00	87.07	165.00	9,421.46	-869.82	442.30	949.06	0.31	-0.25	-0.18
10,426.00	89.71	166.50	9,424.13	-961.85	465.67	1,044.01	3.20	2.78	1.58
10,521.00	89.91	165.02	9,424.44	-1,053.93	489.04	1,139.00	1.57	0.21	-1.56
10,616.00	89.62	167.08	9,424.83	-1,146.12	511.94	1,233.99	2.19	-0.31	2.17

Company:	QEP ENERGY (TX)	Local Co-ordinate Reference:	Well UL 2539 W13 09SB
Project:	Texas North Central	TVD Reference:	KB @ 2959.01ft (UNIT 408)
Site:	Martin County	MD Reference:	KB @ 2959.01ft (UNIT 408)
Well:	UL 2539 W13 09SB	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	NN

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,711.00	89.53	166.73	9,425.54	-1,238.65	533.47	1,328.98	0.38	-0.09	-0.37
10,806.00	88.89	167.34	9,426.85	-1,331.21	554.78	1,423.97	0.93	-0.67	0.64
10,900.00	88.01	166.46	9,429.39	-1,422.73	576.07	1,517.93	1.32	-0.94	-0.94
10,996.00	89.99	167.67	9,431.06	-1,516.28	597.56	1,613.90	2.42	2.06	1.26
11,091.00	89.50	169.58	9,431.49	-1,609.40	616.29	1,708.83	2.08	-0.52	2.01
11,186.00	89.08	169.95	9,432.66	-1,702.89	633.17	1,803.67	0.59	-0.44	0.39
11,281.00	89.62	169.36	9,433.74	-1,796.33	650.23	1,898.52	0.84	0.57	-0.62
11,376.00	88.86	168.48	9,435.00	-1,889.55	668.49	1,993.42	1.22	-0.80	-0.93
11,471.00	88.63	168.31	9,437.08	-1,982.59	687.59	2,088.35	0.30	-0.24	-0.18
11,566.00	90.39	168.31	9,437.90	-2,075.61	706.84	2,183.29	1.85	1.85	0.00
11,661.00	90.35	167.95	9,437.28	-2,168.58	726.38	2,278.25	0.38	-0.04	-0.38
11,756.00	89.65	167.43	9,437.28	-2,261.39	746.63	2,373.23	0.92	-0.74	-0.55
11,851.00	89.33	166.45	9,438.13	-2,353.93	768.10	2,468.22	1.09	-0.34	-1.03
11,946.00	89.59	165.71	9,439.02	-2,446.14	790.95	2,563.22	0.83	0.27	-0.78
12,041.00	88.94	167.80	9,440.24	-2,538.60	812.72	2,658.20	2.30	-0.68	2.20
12,136.00	89.29	167.71	9,441.71	-2,631.42	832.86	2,753.17	0.38	0.37	-0.09
12,231.00	89.27	167.67	9,442.90	-2,724.23	853.11	2,848.14	0.05	-0.02	-0.04
12,326.00	89.58	167.56	9,443.86	-2,817.02	873.49	2,943.11	0.35	0.33	-0.12
12,421.00	92.22	168.57	9,442.36	-2,909.94	893.13	3,038.06	2.98	2.78	1.06
12,516.00	92.16	167.23	9,438.73	-3,002.76	913.03	3,132.96	1.41	-0.06	-1.41
12,611.00	92.28	165.61	9,435.05	-3,095.03	935.32	3,227.88	1.71	0.13	-1.71
12,706.00	90.13	165.50	9,433.06	-3,187.00	959.01	3,322.84	2.27	-2.26	-0.12
12,801.00	89.68	166.99	9,433.21	-3,279.28	981.60	3,417.84	1.64	-0.47	1.57
12,896.00	88.35	168.46	9,434.85	-3,372.09	1,001.79	3,512.80	2.09	-1.40	1.55
12,991.00	89.13	168.00	9,436.94	-3,465.06	1,021.16	3,607.73	0.95	0.82	-0.48
13,086.00	89.42	167.11	9,438.14	-3,557.82	1,041.64	3,702.71	0.99	0.31	-0.94
13,181.00	90.01	167.17	9,438.61	-3,650.44	1,062.78	3,797.70	0.62	0.62	0.06
13,275.00	90.45	166.78	9,438.23	-3,742.02	1,083.96	3,891.69	0.63	0.47	-0.41
13,370.00	91.37	166.55	9,436.72	-3,834.45	1,105.87	3,986.68	1.00	0.97	-0.24
13,465.00	90.76	168.45	9,434.96	-3,927.17	1,126.43	4,081.64	2.10	-0.64	2.00
13,560.00	89.52	169.12	9,434.73	-4,020.36	1,144.91	4,176.57	1.48	-1.31	0.71
13,655.00	89.68	169.92	9,435.39	-4,113.77	1,162.18	4,271.43	0.86	0.17	0.84
13,751.00	89.31	169.58	9,436.24	-4,208.23	1,179.27	4,367.27	0.52	-0.39	-0.35
13,846.00	87.90	168.52	9,438.55	-4,301.47	1,197.31	4,462.15	1.86	-1.48	-1.12
13,940.00	89.51	170.89	9,440.67	-4,393.93	1,214.10	4,555.96	3.05	1.71	2.52
14,034.00	89.77	170.34	9,441.26	-4,486.67	1,229.43	4,649.72	0.65	0.28	-0.59
14,128.00	89.37	168.91	9,441.97	-4,579.12	1,246.35	4,743.57	1.58	-0.43	-1.52
14,222.00	91.58	168.64	9,441.19	-4,671.32	1,264.65	4,837.49	2.37	2.35	-0.29
14,316.00	89.54	165.54	9,440.27	-4,762.92	1,285.65	4,931.46	3.95	-2.17	-3.30
14,410.00	88.24	165.55	9,442.09	-4,853.92	1,309.11	5,025.43	1.38	-1.38	0.01
14,504.00	87.66	164.91	9,445.45	-4,944.76	1,333.06	5,119.35	0.92	-0.62	-0.68
14,598.00	89.56	165.11	9,447.73	-5,035.53	1,357.36	5,213.28	2.03	2.02	0.21
14,692.00	88.11	165.68	9,449.65	-5,126.47	1,381.06	5,307.24	1.66	-1.54	0.61

Company:	QEP ENERGY (TX)	Local Co-ordinate Reference:	Well UL 2539 W13 09SB
Project:	Texas North Central	TVD Reference:	KB @ 2959.01ft (UNIT 408)
Site:	Martin County	MD Reference:	KB @ 2959.01ft (UNIT 408)
Well:	UL 2539 W13 09SB	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	NN

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,787.00	87.64	165.70	9,453.17	-5,218.46	1,404.52	5,402.17	0.50	-0.49	0.02
14,881.00	85.98	165.89	9,458.40	-5,309.44	1,427.55	5,496.01	1.78	-1.77	0.20
14,974.00	85.64	166.22	9,465.19	-5,399.46	1,449.90	5,588.76	0.51	-0.37	0.35
15,068.00	88.41	166.73	9,470.07	-5,490.72	1,471.86	5,682.63	3.00	2.95	0.54
15,162.00	90.87	167.44	9,470.66	-5,582.33	1,492.86	5,776.61	2.72	2.62	0.76
15,257.00	92.40	168.18	9,467.95	-5,675.15	1,512.91	5,871.54	1.79	1.61	0.78
15,352.00	90.98	167.98	9,465.15	-5,768.06	1,532.53	5,966.46	1.51	-1.49	-0.21
15,447.00	92.12	168.36	9,462.58	-5,861.00	1,552.00	6,061.39	1.26	1.20	0.40
15,542.00	90.56	168.38	9,460.36	-5,954.03	1,571.14	6,156.31	1.64	-1.64	0.02
15,637.00	91.53	168.80	9,458.63	-6,047.13	1,589.93	6,251.23	1.11	1.02	0.44
15,732.00	91.15	168.51	9,456.41	-6,140.25	1,608.61	6,346.13	0.50	-0.40	-0.31
15,827.00	91.14	168.58	9,454.51	-6,233.34	1,627.48	6,441.05	0.07	-0.01	0.07
15,922.00	92.90	169.60	9,451.16	-6,326.56	1,645.45	6,535.89	2.14	1.85	1.07
16,017.00	90.55	170.40	9,448.30	-6,420.07	1,661.93	6,630.66	2.61	-2.47	0.84
16,112.00	89.38	169.39	9,448.36	-6,513.59	1,678.60	6,725.49	1.63	-1.23	-1.06
16,207.00	88.27	169.03	9,450.30	-6,606.89	1,696.38	6,820.36	1.23	-1.17	-0.38
16,302.00	89.07	169.20	9,452.51	-6,700.15	1,714.32	6,915.24	0.86	0.84	0.18
16,397.00	90.08	168.68	9,453.21	-6,793.38	1,732.54	7,010.15	1.20	1.06	-0.55
16,492.00	90.12	167.59	9,453.05	-6,886.35	1,752.07	7,105.11	1.15	0.04	-1.15
16,587.00	90.09	166.71	9,452.87	-6,978.97	1,773.20	7,200.10	0.93	-0.03	-0.93
16,682.00	91.15	167.69	9,451.85	-7,071.60	1,794.25	7,295.08	1.52	1.12	1.03
16,777.00	91.12	169.23	9,449.96	-7,164.66	1,813.25	7,390.01	1.62	-0.03	1.62
16,872.00	91.03	169.08	9,448.18	-7,257.95	1,831.12	7,484.89	0.18	-0.09	-0.16
16,967.00	91.12	169.09	9,446.40	-7,351.21	1,849.10	7,579.77	0.10	0.09	0.01
17,062.00	90.27	169.12	9,445.25	-7,444.49	1,867.06	7,674.67	0.90	-0.89	0.03
17,157.00	90.65	168.63	9,444.48	-7,537.71	1,885.39	7,769.58	0.65	0.40	-0.52
17,252.00	89.49	167.70	9,444.37	-7,630.68	1,904.87	7,864.54	1.57	-1.22	-0.98
17,347.00	91.19	168.75	9,443.81	-7,723.68	1,924.26	7,959.49	2.10	1.79	1.11
17,442.00	89.32	167.09	9,443.38	-7,816.57	1,944.13	8,054.45	2.63	-1.97	-1.75
17,537.00	89.99	168.10	9,443.95	-7,909.34	1,964.54	8,149.43	1.28	0.71	1.06
17,632.00	91.46	169.52	9,442.75	-8,002.53	1,982.98	8,244.34	2.15	1.55	1.49
17,726.00	90.40	167.44	9,441.23	-8,094.61	2,001.74	8,338.26	2.48	-1.13	-2.21
17,821.00	90.05	166.87	9,440.85	-8,187.24	2,022.86	8,433.26	0.70	-0.37	-0.60
17,916.00	87.82	165.86	9,442.62	-8,279.54	2,045.25	8,528.23	2.58	-2.35	-1.06
18,011.00	88.41	165.98	9,445.74	-8,371.63	2,068.35	8,623.18	0.63	0.62	0.13
18,106.00	92.35	167.36	9,445.11	-8,464.05	2,090.25	8,718.15	4.39	4.15	1.45
18,201.00	92.94	167.61	9,440.73	-8,556.69	2,110.81	8,813.04	0.67	0.62	0.26
18,296.00	90.21	166.09	9,438.12	-8,649.15	2,132.42	8,907.99	3.29	-2.87	-1.60
18,390.00	89.95	166.96	9,437.99	-8,740.57	2,154.32	9,001.99	0.97	-0.28	0.93
18,485.00	90.64	167.90	9,437.50	-8,833.29	2,174.99	9,096.97	1.23	0.73	0.99
18,580.00	90.43	167.04	9,436.61	-8,926.02	2,195.60	9,191.95	0.93	-0.22	-0.91
18,675.00	90.22	167.22	9,436.07	-9,018.63	2,216.76	9,286.94	0.29	-0.22	0.19
18,770.00	91.20	168.74	9,434.90	-9,111.54	2,236.55	9,381.90	1.90	1.03	1.60
18,865.00	92.88	169.63	9,431.51	-9,204.79	2,254.36	9,476.73	2.00	1.77	0.94

Company:	QEP ENERGY (TX)	Local Co-ordinate Reference:	Well UL 2539 W13 09SB
Project:	Texas North Central	TVD Reference:	KB @ 2959.01ft (UNIT 408)
Site:	Martin County	MD Reference:	KB @ 2959.01ft (UNIT 408)
Well:	UL 2539 W13 09SB	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	NN

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
18,959.00	92.35	169.81	9,427.22	-9,297.18	2,271.12	9,570.48	0.60	-0.56	0.19
19,054.00	91.53	170.01	9,424.01	-9,390.66	2,287.75	9,665.26	0.89	-0.86	0.21
19,149.00	90.90	168.03	9,421.99	-9,483.89	2,305.84	9,760.14	2.19	-0.66	-2.08
19,244.00	90.40	166.32	9,420.92	-9,576.51	2,326.93	9,855.12	1.88	-0.53	-1.80
19,338.00	90.70	167.41	9,420.01	-9,668.05	2,348.29	9,949.12	1.20	0.32	1.16
19,433.00	88.68	166.07	9,420.53	-9,760.51	2,370.07	10,044.11	2.55	-2.13	-1.41
19,528.00	88.98	166.64	9,422.47	-9,852.80	2,392.48	10,139.09	0.68	0.32	0.60
19,623.00	88.81	167.09	9,424.30	-9,945.30	2,414.06	10,234.07	0.51	-0.18	0.47
19,718.00	89.00	168.48	9,426.12	-10,038.13	2,434.16	10,329.02	1.48	0.20	1.46
19,813.00	89.19	169.01	9,427.62	-10,131.29	2,452.70	10,423.94	0.59	0.20	0.56
19,907.00	90.57	167.96	9,427.81	-10,223.40	2,471.46	10,517.88	1.84	1.47	-1.12
20,002.00	91.25	169.11	9,426.30	-10,316.49	2,490.34	10,612.80	1.41	0.72	1.21
20,097.00	91.70	167.27	9,423.86	-10,409.44	2,509.78	10,707.72	1.99	0.47	-1.94
20,191.00	93.40	167.29	9,419.68	-10,501.04	2,530.46	10,801.62	1.81	1.81	0.02
20,286.00	91.48	165.41	9,415.63	-10,593.26	2,552.85	10,896.52	2.83	-2.02	-1.98
20,381.00	90.09	165.10	9,414.33	-10,685.12	2,577.03	10,991.49	1.50	-1.46	-0.33
20,476.00	89.09	165.22	9,415.01	-10,776.95	2,601.36	11,086.46	1.06	-1.05	0.13
20,571.00	87.84	165.71	9,417.56	-10,868.88	2,625.19	11,181.41	1.41	-1.32	0.52
20,665.00	88.75	165.74	9,420.35	-10,959.93	2,648.36	11,275.36	0.97	0.97	0.03
20,760.00	92.25	166.93	9,419.52	-11,052.22	2,670.80	11,370.34	3.89	3.68	1.25
20,855.00	90.44	167.04	9,417.29	-11,144.75	2,692.19	11,465.30	1.91	-1.91	0.12
20,949.00	91.50	167.56	9,415.70	-11,236.44	2,712.85	11,559.28	1.26	1.13	0.55
21,044.00	90.98	167.59	9,413.65	-11,329.19	2,733.29	11,654.24	0.55	-0.55	0.03
21,138.00	89.93	167.48	9,412.90	-11,420.97	2,753.57	11,748.22	1.12	-1.12	-0.12
21,233.00	88.77	167.40	9,413.98	-11,513.69	2,774.23	11,843.20	1.22	-1.22	-0.08
21,328.00	88.24	166.92	9,416.46	-11,606.28	2,795.34	11,938.16	0.75	-0.56	-0.51
21,422.00	90.72	165.03	9,417.31	-11,697.47	2,818.11	12,032.14	3.32	2.64	-2.01
21,517.00	90.05	164.16	9,416.67	-11,789.05	2,843.35	12,127.09	1.16	-0.71	-0.92
21,612.00	90.32	164.33	9,416.36	-11,880.48	2,869.14	12,222.01	0.34	0.28	0.18
21,707.00	91.72	166.50	9,414.67	-11,972.40	2,893.06	12,316.97	2.72	1.47	2.28
21,802.00	91.14	167.28	9,412.30	-12,064.89	2,914.60	12,411.94	1.02	-0.61	0.82
21,897.00	90.53	166.98	9,410.92	-12,157.49	2,935.76	12,506.92	0.72	-0.64	-0.32
21,992.00	91.96	168.03	9,408.85	-12,250.22	2,956.31	12,601.88	1.87	1.51	1.11
22,087.00	90.88	167.41	9,406.50	-12,343.01	2,976.51	12,696.83	1.31	-1.14	-0.65
22,182.00	91.00	167.78	9,404.94	-12,435.78	2,996.91	12,791.80	0.41	0.13	0.39
22,277.00	91.14	168.17	9,403.17	-12,528.68	3,016.70	12,886.75	0.44	0.15	0.41
22,329.00	91.62	169.15	9,401.91	-12,579.65	3,026.92	12,938.70	2.10	0.92	1.88
22,378.00	91.62	169.15	9,400.53	-12,627.76	3,036.14	12,987.62	0.00	0.00	0.00
UL 2539 W13 09SB									

Company:	QEP ENERGY (TX)	Local Co-ordinate Reference:	Well UL 2539 W13 09SB
Project:	Texas North Central	TVD Reference:	KB @ 2959.01ft (UNIT 408)
Site:	Martin County	MD Reference:	KB @ 2959.01ft (UNIT 408)
Well:	UL 2539 W13 09SB	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	NN

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
UL 2539 W13 09SB	0.00	360.00	9,413.96	-12,634.01	3,034.64	280,935.145	547,895.334	32.349510	-102.203605
- survey misses target center by 14.89ft at 22378.00ft MD (9400.53 TVD, -12627.76 N, 3036.14 E)									
- Point									

Checked By: _____	Approved By: _____	Date: _____
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