

Operator: XTO Energy
Well/Lease: Perla Verde 31 State 2H
County: Lea

STATE OF NEW MEXICO
DEVIATION REPORT

<u>Footage</u>	<u>Degree</u>
311	1.00
750	1.00
1155	1.00
1558	0.75
1836	0.75
2207	0.25
2700	0.25
3258	2.25
3604	2.75
4177	2.50
4490	1.25
4959	0.50
5242	0.50
5707	1.00
6237	0.50
6649	1.00
7026	0.25
7404	0.25
7935	0.25
8349	1.75
8511	2.00
9035	0.25
9456	0.25
10056	0.25

HOBBS OGD

JUL 30 2015

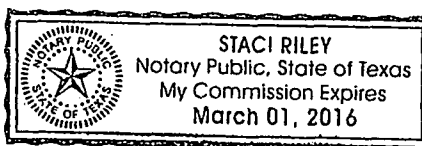
RECEIVED

30-025-41861

Signed By: Charles Walsh
Charles Walsh, Division Manager
Pioneer Energy Services

Appeared before me on Dec. 16, 2014.

Staci Riley
Notary Public



AUG 03 2015

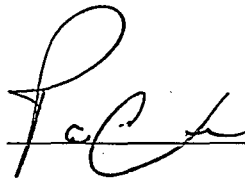
HALLIBURTON

14103 Interdrive West • Houston, TX 77032

PHONE 281.986.4400 • FAX 281.986.4499

State of New Mexico, Lea County

I, Patrick Cowan, certify that I am employed by Halliburton Energy Services, Inc. (AKA Sperry Drilling) and that on the dates of 28-October-2014 through 15-November-2014 I did conduct or supervise the taking of a DGWD-FE Directional survey for the Well Perla Verde 31 State 2H from a depth of 10,518' MD to a depth of 15,630' MD. This data is true, correct, complete and within the limitations of the tools as set forth by Halliburton Energy Services, Inc. (AKA Sperry Drilling). I am authorized and qualified to make this report and this survey was conducted at the request of XTO Energy for the Well Perla Verde 31 State 2H, API No. 30-025-41861-0000 in Lea County, Texas. I have reviewed this report and find that it conforms to the principles and procedures as set forth by Halliburton Energy Services, Inc. (AKA Sperry Drilling).



Field Engineer

XTO Energy

Perla Verde 31 State 2H

Lea County, NM

Pioneer 33

API# 30-025-41861-0000

October 28, 2014 – November 15, 2014

HD-MJ-0901671881

Sperry Drilling Services MWD Survey Report

Submitted by Patrick Cowan Jr.

3950 Interwood South Parkway

Houston, Texas 77032

Ph: 281.986.4400

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**Drilling and Formation
Evaluation**

Survey Report for XTO Energy

Rig	:	Pioneer 33
Well Name	:	Perla Verde 31 State 2H
Field Name	:	Permian
Country	:	Lea County, NM
Job Number	:	HD-XX-0901671881
Job Start Date	:	28-Oct-14
API Number	:	30-025-41861-0000

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1. General Information
2. Directional Survey Data

GENERAL INFORMATION

Company	: XTO Energy
Rig	: Pioneer 33
Well	: Perla Verde 31 State 2H
Field	: Permian
Lease Name	: Perla Verde 31 State
State	: New Mexico
County	: Lea County, NM
Country	: USA
API Number	: 30-025-41861-0000
Sperry Drilling Job Number	: HD-XX-0901671881
Job Start Date	: 28-Oct-14
Job End Date	: 28-Oct-14
North Reference	: Grid
Total Correction (deg)	: 6.879
Dip Angle (deg)	: 60.469
Total Magnetic Field (nT)	: 48505
Date of Magnetic Data	: 28 October, 2014
Well Head coordinates N	: 32 deg. 36 min 36.3 sec North
Well Head coordinates E	: 103 deg. 29 min 39.38 sec West
Vertical section direction (deg)	: 1.74
Unit Number	: 11310664
MWD Engineers	: Patrick Cowan Jr, Ryan Caldwell
Company Representatives	: Wayland R
Company Geologist:	: Tom Anderson,

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)
100.00	0.38	145.20	100.00	0.27 S	0.19 E	-0.27	0.38
200.00	0.34	190.97	200.00	0.84 S	0.32 E	-0.83	0.28
300.00	0.07	233.65	300.00	1.16 S	0.22 E	-1.16	0.29
400.00	0.11	208.42	400.00	1.28 S	0.12 E	-1.28	0.06
500.00	0.04	294.48	500.00	1.35 S	0.04 E	-1.35	0.11
600.00	0.06	27.45	600.00	1.29 S	0.04 E	-1.29	0.07
700.00	0.09	323.09	700.00	1.18 S	0.01 E	-1.18	0.08
800.00	0.13	234.02	800.00	1.19 S	0.13 W	-1.19	0.16
900.00	0.12	196.25	900.00	1.35 S	0.25 W	-1.36	0.08
1000.00	0.15	106.08	1,000.00	1.49 S	0.15 W	-1.50	0.19
1100.00	0.15	73.31	1,100.00	1.49 S	0.10 E	-1.49	0.08
1200.00	0.08	125.28	1,200.00	1.49 S	0.28 E	-1.48	0.12
1300.00	0.20	344.84	1,300.00	1.36 S	0.29 E	-1.36	0.27
1400.00	0.08	227.70	1,400.00	1.24 S	0.20 E	-1.24	0.25
1500.00	0.16	50.36	1,499.99	1.20 S	0.25 E	-1.19	0.24
1600.00	0.17	265.18	1,599.99	1.12 S	0.21 E	-1.12	0.31
1700.00	0.09	205.68	1,699.99	1.21 S	0.03 E	-1.21	0.15
1800.00	0.25	247.85	1,799.99	1.36 S	0.20 W	-1.37	0.19
1900.00	0.08	292.41	1,899.99	1.42 S	0.47 W	-1.43	0.20
2000.00	0.28	217.16	1,999.99	1.58 S	0.68 W	-1.60	0.27
2100.00	0.04	218.89	2,099.99	1.81 S	0.85 W	-1.83	0.24
2200.00	0.15	109.98	2,199.99	1.88 S	0.75 W	-1.90	0.17
2300.00	0.20	93.40	2,299.99	1.93 S	0.45 W	-1.95	0.07
2400.00	0.34	68.71	2,399.99	1.84 S	0.00 W	-1.84	0.18
2500.00	0.21	55.05	2,499.99	1.62 S	0.42 E	-1.61	0.14
2600.00	0.25	19.91	2,599.99	1.31 S	0.65 E	-1.29	0.14
2700.00	0.39	57.45	2,699.99	0.93 S	1.01 E	-0.89	0.24
2800.00	0.60	56.45	2,799.98	0.45 S	1.73 E	-0.40	0.21
2900.00	0.74	62.34	2,899.98	0.14 N	2.74 E	0.22	0.16
3000.00	1.69	63.55	2,999.95	1.09 N	4.63 E	1.23	0.95
3100.00	2.51	72.99	3,099.89	2.39 N	8.05 E	2.63	0.89
3200.00	2.62	70.36	3,199.79	3.80 N	12.29 E	4.17	0.16
3300.00	2.94	68.39	3,299.67	5.51 N	16.83 E	6.02	0.33
3400.00	2.72	62.13	3,399.55	7.57 N	21.31 E	8.21	0.38
3500.00	2.53	57.80	3,499.44	9.85 N	25.28 E	10.61	0.27
3600.00	2.68	53.92	3,599.34	12.40 N	29.03 E	13.28	0.23
3700.00	2.72	56.39	3,699.23	15.09 N	32.90 E	16.09	0.12
3800.00	2.78	57.03	3,799.11	17.73 N	36.91 E	18.84	0.07
3900.00	2.80	55.72	3,898.99	20.42 N	40.96 E	21.66	0.07
4000.00	2.34	51.98	3,998.89	23.06 N	44.59 E	24.40	0.49
4100.00	2.43	49.98	4,098.81	25.68 N	47.82 E	27.12	0.12

DIRECTIONAL SURVEY DATA

Measured Depth (ft)	Inclination (deg)	Direction (deg)	Vertical Depth (ft)	Latitude (ft)	Departure (ft)	Vertical Section (ft)	Dogleg (%/100)
4200.00	2.42	46.76	4,198.72	28.49 N	50.98 E	30.02	0.14
4300.00	1.82	49.76	4,298.65	30.96 N	53.73 E	32.58	0.61
4400.00	1.24	49.56	4,398.61	32.69 N	55.77 E	34.36	0.58
4500.00	1.28	30.31	4,498.59	34.35 N	57.16 E	36.07	0.42
4600.00	0.78	40.94	4,598.57	35.83 N	58.17 E	37.58	0.53
4700.00	0.52	22.55	4,698.56	36.76 N	58.79 E	38.53	0.33
4800.00	0.59	61.17	4,798.56	37.43 N	59.41 E	39.22	0.37
4900.00	0.65	35.87	4,898.55	38.14 N	60.19 E	39.95	0.28
5000.00	0.64	35.82	4,998.55	39.05 N	60.85 E	40.88	0.01
5100.00	0.29	52.56	5,098.54	39.66 N	61.38 E	41.50	0.37
5200.00	0.38	15.44	5,198.54	40.13 N	61.67 E	41.99	0.23
5300.00	0.55	25.81	5,298.54	40.88 N	61.97 E	42.75	0.19
5400.00	0.44	68.40	5,398.54	41.46 N	62.53 E	43.34	0.37
5500.00	0.59	45.79	5,498.53	41.96 N	63.26 E	43.86	0.25
5600.00	0.58	61.68	5,598.53	42.56 N	64.07 E	44.48	0.16
5700.00	1.00	62.48	5,698.52	43.20 N	65.29 E	45.16	0.42
5800.00	1.06	64.90	5,798.50	44.00 N	66.90 E	46.01	0.07
5900.00	0.57	60.76	5,898.49	44.63 N	68.18 E	46.68	0.49
6000.00	0.56	88.72	5,998.49	44.88 N	69.10 E	46.96	0.27
6100.00	0.67	56.22	6,098.48	45.22 N	70.07 E	47.33	0.36
6200.00	0.27	85.83	6,198.48	45.56 N	70.79 E	47.69	0.46
6300.00	0.34	61.51	6,298.48	45.72 N	71.29 E	47.86	0.15
6400.00	0.53	103.67	6,398.47	45.75 N	72.00 E	47.92	0.36
6500.00	0.71	66.43	6,498.47	45.89 N	73.02 E	48.09	0.43
6600.00	0.83	54.37	6,598.46	46.56 N	74.17 E	48.79	0.20
6700.00	0.88	33.05	6,698.45	47.63 N	75.18 E	49.89	0.32
6800.00	0.52	32.94	6,798.44	48.65 N	75.85 E	50.93	0.36
6900.00	0.49	47.57	6,898.44	49.32 N	76.41 E	51.62	0.13
7000.00	0.27	33.62	6,998.43	49.81 N	76.86 E	52.12	0.24
7100.00	0.48	348.24	7,098.43	50.41 N	76.90 E	52.72	0.35
7200.00	0.36	27.68	7,198.43	51.10 N	76.96 E	53.41	0.31
7300.00	0.40	354.41	7,298.43	51.73 N	77.07 E	54.04	0.22
7400.00	0.33	349.59	7,398.43	52.36 N	76.99 E	54.67	0.08
7500.00	0.16	276.27	7,498.43	52.65 N	76.80 E	54.96	0.32
7600.00	0.12	260.84	7,598.42	52.65 N	76.55 E	54.95	0.05
7700.00	0.15	277.41	7,698.42	52.65 N	76.32 E	54.95	0.05
7800.00	0.46	252.67	7,798.42	52.55 N	75.81 E	54.83	0.33
7900.00	0.26	244.72	7,898.42	52.33 N	75.22 E	54.59	0.21
8000.00	0.47	316.02	7,998.42	52.53 N	74.73 E	54.78	0.46
8100.00	0.61	19.60	8,098.42	53.33 N	74.62 E	55.57	0.58
8200.00	1.41	348.96	8,198.40	55.04 N	74.57 E	57.28	0.94
8300.00	1.85	358.64	8,298.36	57.86 N	74.29 E	60.09	0.52
8400.00	1.65	4.58	8,398.31	60.91 N	74.37 E	63.14	0.27
8500.00	2.16	353.96	8,498.26	64.22 N	74.29 E	66.44	0.62
8600.00	2.63	351.84	8,598.17	68.36 N	73.76 E	70.57	0.48

DIRECTIONAL SURVEY DATA

Measured Depth (ft)	Inclination (deg)	Direction (deg)	Vertical Depth (ft)	Latitude (ft)	Departure (ft)	Vertical Section (ft)	Dogleg (%/100)
8700.00	4.04	336.80	8,698.00	73.87 N	72.05 E	76.03	1.65
8800.00	1.86	311.28	8,797.87	78.18 N	69.44 E	80.25	2.49
8900.00	0.34	293.42	8,897.84	79.37 N	67.95 E	81.40	1.54
9000.00	0.13	357.54	8,997.84	79.60 N	67.67 E	81.62	0.31
9100.00	0.12	89.78	9,097.84	79.71 N	67.77 E	81.74	0.18
9200.00	0.14	5.32	9,197.84	79.84 N	67.89 E	81.86	0.18
9300.00	0.19	232.89	9,297.84	79.86 N	67.77 E	81.88	0.30
9400.00	0.13	227.10	9,397.84	79.68 N	67.55 E	81.70	0.06
9500.00	0.14	144.56	9,497.84	79.50 N	67.54 E	81.52	0.18
9600.00	0.08	47.74	9,597.84	79.45 N	67.66 E	81.47	0.17
9700.00	0.17	86.73	9,697.84	79.51 N	67.86 E	81.53	0.12
9800.00	0.20	141.83	9,797.84	79.38 N	68.12 E	81.41	0.17
9900.00	0.17	156.07	9,897.84	79.11 N	68.29 E	81.14	0.05
10000.00	0.21	183.62	9,997.84	78.79 N	68.33 E	80.83	0.10
10100.00	0.18	167.16	10,097.84	78.45 N	68.36 E	80.49	0.06
10200.00	0.62	125.26	10,197.84	77.99 N	68.83 E	80.04	0.50
10300.00	0.47	169.59	10,297.83	77.27 N	69.35 E	79.34	0.43
10406.00	0.26	195.85	10,403.83	76.61 N	69.36 E	78.68	0.25
10518.00	2.31	312.01	10,515.80	77.88 N	67.62 E	79.89	2.17
10550.00	5.55	331.55	10,547.72	79.67 N	66.40 E	81.65	10.81
10582.00	8.59	340.46	10,579.48	83.28 N	64.86 E	85.21	10.09
10613.00	11.73	347.62	10,609.99	88.55 N	63.41 E	90.43	10.88
10645.00	15.47	347.54	10,641.09	95.89 N	61.79 E	97.72	11.69
10675.00	19.34	347.72	10,669.71	104.65 N	59.87 E	106.42	12.89
10707.00	21.33	346.97	10,699.71	115.50 N	57.44 E	117.19	6.27
10739.00	24.44	347.93	10,729.19	127.65 N	54.74 E	129.25	9.80
10770.00	27.29	350.70	10,757.08	140.93 N	52.25 E	142.46	9.98
10802.00	30.33	353.13	10,785.12	156.20 N	50.10 E	157.65	10.17
10834.00	33.08	354.59	10,812.34	172.92 N	48.31 E	174.30	8.93
10865.00	36.29	355.06	10,837.83	190.48 N	46.72 E	191.81	10.39
10896.00	39.42	355.29	10,862.31	209.44 N	45.12 E	210.71	10.11
10928.00	41.84	355.45	10,886.59	230.20 N	43.44 E	231.42	7.56
10959.00	44.65	355.28	10,909.17	251.37 N	41.72 E	252.52	9.08
10990.00	47.11	356.51	10,930.75	273.56 N	40.14 E	274.66	8.43
11021.00	49.57	357.39	10,951.36	296.69 N	38.91 E	297.73	8.22
11053.00	51.77	357.04	10,971.64	321.41 N	37.70 E	322.41	6.92
11084.00	54.15	356.28	10,990.31	346.11 N	36.26 E	347.05	7.92
11115.00	57.48	354.75	11,007.73	371.67 N	34.25 E	372.54	11.50
11146.00	60.82	354.05	11,023.62	398.15 N	31.65 E	398.93	10.95
11178.00	64.36	353.65	11,038.35	426.39 N	28.60 E	427.06	11.13
11209.00	66.07	355.02	11,051.34	454.40 N	25.82 E	454.97	6.82
11240.00	68.14	356.76	11,063.40	482.88 N	23.78 E	483.38	8.45
11272.00	70.76	358.17	11,074.63	512.81 N	22.46 E	513.26	9.17
11304.00	74.35	359.97	11,084.22	543.33 N	21.97 E	543.75	12.41
11335.00	78.04	0.57	11,091.62	573.43 N	22.11 E	573.84	12.08

DIRECTIONAL SURVEY DATA

Measured Depth (ft)	Inclination (deg)	Direction (deg)	Vertical Depth (ft)	Latitude (ft)	Departure (ft)	Vertical Section (ft)	Dogleg (%/100)
11365.00	81.78	0.83	11,096.88	602.96 N	22.47 E	603.36	12.47
11461.00	93.92	2.66	11,100.47	698.66 N	25.39 E	699.11	12.79
11516.00	95.26	2.83	11,096.07	753.42 N	28.01 E	753.92	2.46
11590.00	95.32	1.61	11,089.25	827.05 N	30.87 E	827.60	1.65
11685.00	93.84	359.16	11,081.66	921.73 N	31.50 E	922.26	3.01
11779.00	91.79	0.44	11,077.04	1,015.61 N	31.17 E	1016.09	2.57
11873.00	91.61	1.27	11,074.26	1,109.56 N	32.57 E	1110.04	0.90
11968.00	92.10	2.14	11,071.18	1,204.47 N	35.39 E	1204.99	1.05
12061.00	90.80	359.65	11,068.83	1,297.42 N	36.84 E	1297.94	3.02
12157.00	90.00	358.83	11,068.16	1,393.40 N	35.56 E	1393.84	1.20
12252.00	89.51	359.20	11,068.57	1,488.39 N	33.93 E	1488.73	0.66
12346.00	90.93	357.99	11,068.21	1,582.36 N	31.63 E	1582.59	1.99
12440.00	92.53	0.01	11,065.38	1,676.29 N	29.99 E	1676.43	2.74
12536.00	93.71	2.66	11,060.15	1,772.11 N	32.21 E	1772.27	3.02
12630.00	91.17	1.99	11,056.14	1,865.94 N	36.02 E	1866.17	2.79
12725.00	89.01	2.61	11,055.99	1,960.86 N	39.83 E	1961.16	2.37
12820.00	90.87	3.84	11,056.09	2,055.70 N	45.18 E	2056.13	2.34
12914.00	92.78	3.01	11,053.10	2,149.48 N	50.79 E	2150.03	2.22
13009.00	92.97	2.08	11,048.34	2,244.27 N	55.00 E	2244.90	1.00
13102.00	94.45	359.62	11,042.32	2,337.05 N	56.37 E	2337.69	3.09
13196.00	93.95	357.53	11,035.43	2,430.76 N	54.04 E	2431.28	2.28
13290.00	90.80	0.68	11,031.52	2,524.65 N	52.57 E	2525.08	4.74
13385.00	91.17	6.86	11,029.89	2,619.38 N	58.81 E	2619.96	6.52
13479.00	91.67	7.82	11,027.55	2,712.58 N	70.82 E	2713.48	1.15
13574.00	92.78	10.75	11,023.87	2,806.25 N	86.14 E	2807.58	3.29
13668.00	92.97	11.51	11,019.15	2,898.37 N	104.26 E	2900.20	0.83
13762.00	92.72	11.51	11,014.49	2,990.37 N	122.99 E	2992.72	0.27
13857.00	92.41	7.40	11,010.24	3,083.96 N	138.58 E	3086.75	4.33
13948.00	92.41	8.58	11,006.41	3,174.00 N	151.22 E	3177.12	1.29
13978.00	92.35	8.99	11,005.16	3,203.62 N	155.79 E	3206.87	1.37
14009.00	92.59	9.01	11,003.83	3,234.21 N	160.64 E	3237.60	0.80
14041.00	92.78	8.69	11,002.33	3,265.79 N	165.56 E	3269.31	1.16
14057.00	93.09	8.17	11,001.51	3,281.60 N	167.90 E	3285.18	3.79
14075.00	93.22	7.87	11,000.52	3,299.40 N	170.41 E	3303.05	1.83
14092.00	93.21	7.15	10,999.57	3,316.22 N	172.62 E	3319.94	4.20
14109.00	92.96	6.65	10,998.65	3,333.08 N	174.66 E	3336.84	3.28
14136.00	92.66	4.98	10,997.33	3,359.90 N	177.40 E	3363.74	6.28
14167.00	92.16	2.43	10,996.02	3,390.81 N	179.40 E	3394.69	8.38
14182.00	91.98	1.67	10,995.48	3,405.79 N	179.93 E	3409.68	5.21
14199.00	91.91	1.37	10,994.91	3,422.77 N	180.38 E	3426.67	1.80
14230.00	91.85	0.74	10,993.89	3,453.75 N	180.95 E	3457.65	2.05
14266.00	91.73	359.29	10,992.76	3,489.73 N	180.96 E	3493.62	4.03
14293.00	91.67	358.53	10,991.96	3,516.72 N	180.45 E	3520.57	2.82
14324.00	91.67	357.44	10,991.06	3,547.68 N	179.36 E	3551.49	3.52
14370.00	91.79	356.58	10,989.67	3,593.60 N	176.96 E	3597.32	1.89

DIRECTIONAL SURVEY DATA

Measured Depth (ft)	Inclination (deg)	Direction (deg)	Vertical Depth (ft)	Latitude (ft)	Departure (ft)	Vertical Section (ft)	Dogleg (°/100)
14419.00	91.91	356.73	10,988.08	3,642.49 N	174.11 E	3646.10	0.39
14514.00	92.96	356.89	10,984.04	3,737.26 N	168.83 E	3740.66	1.11
14610.00	92.04	357.33	10,979.86	3,833.04 N	163.99 E	3836.25	1.06
14705.00	91.24	358.21	10,977.14	3,927.93 N	160.30 E	3930.99	1.26
14799.00	92.22	1.48	10,974.31	4,021.87 N	160.05 E	4024.88	3.63
14893.00	91.42	1.51	10,971.32	4,115.79 N	162.50 E	4118.83	0.85
14988.00	90.74	2.02	10,969.53	4,210.73 N	165.42 E	4213.81	0.89
15081.00	90.93	2.19	10,968.17	4,303.66 N	168.84 E	4306.80	0.27
15174.00	91.48	1.38	10,966.22	4,396.59 N	171.73 E	4399.78	1.05
15271.00	90.56	0.63	10,964.49	4,493.56 N	173.44 E	4496.75	1.23
15364.00	91.91	2.78	10,962.49	4,586.49 N	176.21 E	4589.72	2.73
15459.00	90.49	8.25	10,960.49	4,680.99 N	185.34 E	4684.46	5.94
15528.00	88.27	13.33	10,961.24	4,748.74 N	198.26 E	4752.57	8.04
15630.00	83.19	20.63	10,968.83	4,845.93 N	227.92 E	4850.61	8.70
15660.00	82.56	20.63	10,972.55	4,873.79 N	238.41 E	4878.78	2.11

SURVEY FOOTER

SURVEYS CALCULATED USING SHORT COLLAR METHOD
 WELL ASSUMED VERTICAL AT SURFACE
 SURVEYS AT 100' MD TO 10,406' MD PROVIDED BY VAUGHN ENERGY SERVICES
 SURVEYS AT 10,518' MD TO 15,630' MD PROVIDED BY SPERRY DRILLING
 SURVEY AT 15,630' MD HAS BEEN PROJECTED TO TD AT 15,660' MD
 SPERRY DRILLING ENGINEERS: P.COWAN, R. CALDWELL

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 1.74 degrees (Grid)
- A total correction of 6.88 deg from Magnetic north to Grid north has been applied
- Horizontal displacement is relative to the well head.
- Horizontal displacement (closure) at 15,660.00 feet is 4,879.61 feet along 2.80 degrees (Grid)

WARRANTY

HALLIBURTON ENERGY SERVICES, INC. WILL USE ITS BEST EFFORTS TO FURNISH CUSTOMERS WITH ACCURATE INFORMATION AND INTERPRETATIONS THAT ARE PART OF, AND INCIDENT TO, THE SERVICES PROVIDED. HOWEVER, HALLIBURTON ENERGY SERVICES, INC. CANNOT AND DOES NOT WARRANT THE ACCURACY OR CORRECTNESS OF SUCH INFORMATION AND INTERPRETATIONS. UNDER NO CIRCUMSTANCES SHOULD ANY SUCH INFORMATION OR INTERPRETATION BE RELIED UPON AS THE SOLE BASIS FOR ANY DRILLING, COMPLETION, PRODUCTION, OR FINANCIAL DECISION OR ANY PROCEDURE INVOLVING ANY RISK TO THE SAFETY OF ANY DRILLING VENTURE, DRILLING RIG OR ITS CREW OR ANY THIRD PARTY. THE CUSTOMER HAS FULL RESPONSIBILITY FOR ALL DRILLING, COMPLETION, AND PRODUCTION OPERATION. HALLIBURTON ENERGY SERVICES, INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO THE SERVICES RENDERED. IN NO EVENT WILL HALLIBURTON ENERGY SERVICES, INC. SERVICES BE LIABLE FOR FAILURE TO OBTAIN ANY PARTICULAR RESULTS OR FOR ANY DAMAGES, INCLUDING, BUT NOT LIMITED TO, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES, RESULTING FROM THE USE OF ANY INFORMATION OR INTERPRETATION PROVIDED BY HALLIBURTON ENERGY SERVICES, INC.

HALLIBURTON / SPERRY DRILLING
3950 INTERWOOD SOUTH PARKWAY
HOUSTON, TEXAS 77032-3346
PHONE: 281-986-4400
FAX: 281-986-4498

XTOENERGY

Company: XTO Energy
Lease/Well: Perla Verde 31 State/No. 002H

Rig Name: Pioneer 33
State/County: New Mexico/Lea
Latitude: 32.61, Longitude: -103.49
GRID North is 0.45 Degrees East of True North
VS-Azi: 0.00 Degrees



Depth Reference : RKB = 17 feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: gyro survey.ut
Minimum Curvature Method
Report Date/Time: 11/7/2014 / 09:34

VES Survey International
Midland, Texas
432-563-5444
Surveyor: Adam Askew
Perla Verde 31 State No. 002H / API 30-025-41861

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.38	145.20	100.00	-0.27	0.19	-0.27	0.33	145.20	0.38
200.00	0.34	190.97	200.00	-0.83	0.32	-0.83	0.89	158.81	0.28
300.00	0.07	233.65	300.00	-1.16	0.22	-1.16	1.18	169.26	0.29
400.00	0.11	208.42	400.00	-1.27	0.13	-1.27	1.28	174.31	0.05
500.00	0.04	294.48	500.00	-1.34	0.05	-1.34	1.34	177.86	0.11
600.00	0.06	27.45	600.00	-1.28	0.04	-1.28	1.28	178.10	0.07
700.00	0.09	323.09	700.00	-1.17	0.02	-1.17	1.17	179.05	0.08
800.00	0.13	234.02	800.00	-1.17	-0.12	-1.17	1.18	185.76	0.16
900.00	0.12	196.25	900.00	-1.33	-0.24	-1.33	1.36	190.05	0.08
1000.00	0.15	106.08	1000.00	-1.47	-0.14	-1.47	1.48	185.59	0.19
1100.00	0.15	73.31	1100.00	-1.47	0.10	-1.47	1.47	176.07	0.08
1200.00	0.08	125.28	1200.00	-1.47	0.28	-1.47	1.50	169.17	0.12
1300.00	0.20	344.84	1300.00	-1.35	0.29	-1.35	1.38	167.68	0.26
1400.00	0.08	227.70	1400.00	-1.23	0.19	-1.23	1.24	171.02	0.25
1500.00	0.16	50.36	1500.00	-1.19	0.25	-1.19	1.21	168.12	0.25
1600.00	0.17	265.18	1599.99	-1.11	0.21	-1.11	1.13	169.34	0.32
1700.00	0.09	205.68	1699.99	-1.19	0.02	-1.19	1.19	178.81	0.15
1800.00	0.25	247.85	1799.99	-1.34	-0.21	-1.34	1.36	188.83	0.19

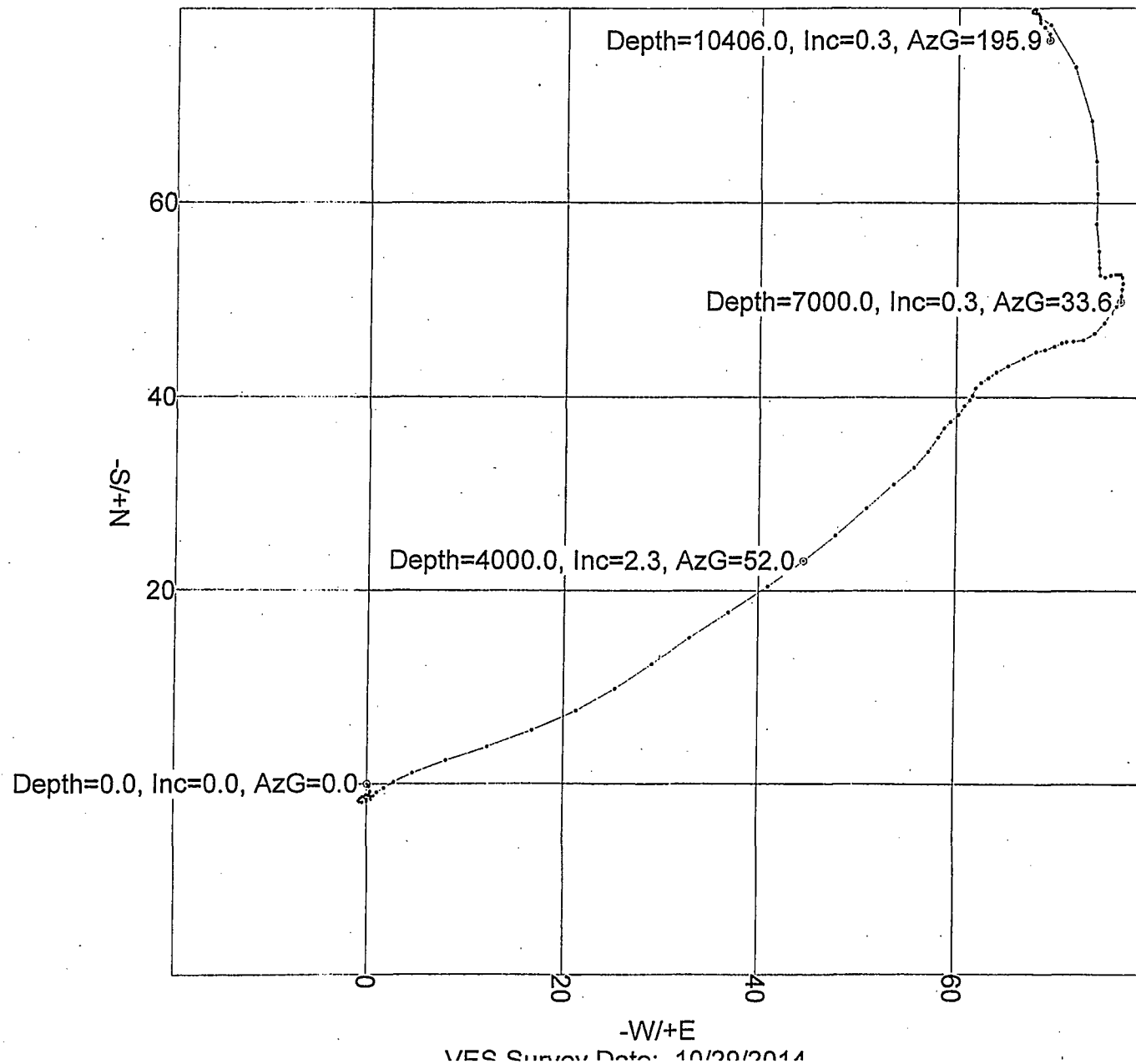
Depth FT	Angle Deg	Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Degree Severity Deg/100
1900.00	0.08	292.41	1899.99	-1.39	-0.48	-1.39	1.47	198.85	0.20
2000.00	0.28	217.16	1999.99	-1.56	-0.69	-1.56	1.71	203.93	0.28
2100.00	0.04	218.89	2099.99	-1.79	-0.87	-1.79	1.99	205.84	0.24
2200.00	0.15	109.98	2199.99	-1.86	-0.77	-1.86	2.01	202.35	0.17
2300.00	0.20	93.40	2299.99	-1.92	-0.47	-1.92	1.97	193.77	0.07
2400.00	0.34	68.71	2399.99	-1.82	-0.02	-1.82	1.82	180.60	0.18
2500.00	0.21	55.05	2499.99	-1.60	0.41	-1.60	1.66	165.60	0.15
2600.00	0.25	19.91	2599.99	-1.29	0.64	-1.29	1.44	153.61	0.15
2700.00	0.39	57.45	2699.99	-0.90	1.00	-0.90	1.34	131.99	0.24
2800.00	0.60	56.45	2799.98	-0.43	1.72	-0.43	1.77	104.08	0.21
2900.00	0.74	62.34	2899.98	0.16	2.72	0.16	2.73	86.70	0.16
3000.00	1.69	63.55	2999.95	1.11	4.61	1.11	4.75	76.43	0.95
3100.00	2.51	72.99	3099.89	2.41	8.03	2.41	8.38	73.28	0.89
3200.00	2.62	70.36	3199.79	3.82	12.27	3.82	12.85	72.71	0.16
3300.00	2.94	68.39	3299.67	5.53	16.81	5.53	17.70	71.78	0.34
3400.00	2.72	62.13	3399.55	7.59	21.30	7.59	22.61	70.39	0.38
3500.00	2.53	57.80	3499.44	9.88	25.27	9.88	27.13	68.65	0.28
3600.00	2.68	53.92	3599.34	12.43	29.02	12.43	31.57	66.82	0.23
3700.00	2.72	56.39	3699.23	15.12	32.89	15.12	36.20	65.31	0.12
3800.00	2.78	57.03	3799.11	17.75	36.90	17.75	40.95	64.31	0.07
3900.00	2.80	55.72	3898.99	20.45	40.95	20.45	45.77	63.47	0.07
4000.00	2.34	51.98	3998.89	23.08	44.58	23.08	50.20	62.63	0.49
4100.00	2.43	49.98	4098.81	25.70	47.81	25.70	54.28	61.74	0.12
4200.00	2.42	46.76	4198.72	28.51	50.98	28.51	58.41	60.78	0.14
4300.00	1.82	49.76	4298.65	30.99	53.73	30.99	62.02	60.03	0.61
4400.00	1.24	49.56	4398.61	32.71	55.76	32.71	64.65	59.60	0.58
4500.00	1.28	30.31	4498.59	34.38	57.15	34.38	66.69	58.97	0.42
4600.00	0.78	40.94	4598.57	35.86	58.16	35.86	68.33	58.34	0.53
4700.00	0.52	22.55	4698.56	36.80	58.78	36.80	69.35	57.95	0.33
4800.00	0.59	61.17	4798.56	37.47	59.41	37.47	70.24	57.76	0.37
4900.00	0.65	35.87	4898.55	38.17	60.19	38.17	71.28	57.62	0.28
5000.00	0.64	35.82	4998.55	39.09	60.85	39.09	72.32	57.29	0.00
5100.00	0.29	52.56	5098.54	39.69	61.38	39.69	73.09	57.11	0.37
5200.00	0.38	15.44	5198.54	40.17	61.67	40.17	73.60	56.92	0.23
5300.00	0.55	25.81	5298.54	40.92	61.96	40.92	74.26	56.56	0.18
5400.00	0.44	68.40	5398.54	41.49	62.53	41.49	75.04	56.43	0.37
5500.00	0.59	45.79	5498.53	42.00	63.26	42.00	75.93	56.42	0.25
5600.00	0.58	61.68	5598.53	42.60	64.07	42.60	76.94	56.38	0.16
5700.00	1.00	62.48	5698.52	43.24	65.29	43.24	78.31	56.49	0.42

Depth FT	Angle Deg	Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Section FT	Distance FT	Direction Deg	Severity Deg/100
5800.00	1.06	64.90	5798.50	44.03	66.90	44.03	80.09	56.65	0.07
5900.00	0.57	60.76	5898.49	44.67	68.17	44.67	81.51	56.77	0.49
6000.00	0.56	88.72	5998.49	44.93	69.10	44.93	82.42	56.97	0.27
6100.00	0.67	56.22	6098.48	45.26	70.07	45.26	83.42	57.14	0.36
6200.00	0.27	85.83	6198.48	45.60	70.80	45.60	84.21	57.21	0.45
6300.00	0.34	61.51	6298.48	45.76	71.30	45.76	84.72	57.31	0.14
6400.00	0.53	103.67	6398.47	45.79	72.00	45.79	85.33	57.54	0.36
6500.00	0.71	66.43	6498.47	45.93	73.02	45.93	86.27	57.83	0.43
6600.00	0.83	54.37	6598.46	46.60	74.18	46.60	87.60	57.86	0.20
6700.00	0.88	33.05	6698.45	47.66	75.18	47.66	89.01	57.62	0.32
6800.00	0.52	32.94	6798.44	48.69	75.84	48.69	90.12	57.30	0.36
6900.00	0.49	47.57	6898.44	49.35	76.40	49.35	90.96	57.14	0.13
7000.00	0.27	33.62	6998.43	49.84	76.85	49.84	91.59	57.04	0.24
7100.00	0.48	348.24	7098.43	50.44	76.89	50.44	91.96	56.74	0.35
7200.00	0.36	27.68	7198.43	51.12	76.95	51.12	92.38	56.40	0.30
7300.00	0.40	354.41	7298.43	51.74	77.06	51.74	92.82	56.12	0.22
7400.00	0.33	349.59	7398.43	52.37	76.98	52.37	93.10	55.77	0.07
7500.00	0.16	276.27	7498.42	52.67	76.78	52.67	93.11	55.55	0.32
7600.00	0.12	260.84	7598.42	52.67	76.54	52.67	92.91	55.47	0.05
7700.00	0.15	277.41	7698.42	52.67	76.31	52.67	92.72	55.38	0.05
7800.00	0.46	252.67	7798.42	52.57	75.79	52.57	92.24	55.26	0.33
7900.00	0.26	244.72	7898.42	52.35	75.21	52.35	91.63	55.16	0.20
8000.00	0.47	316.02	7998.42	52.55	74.72	52.55	91.34	54.88	0.46
8100.00	0.61	19.60	8098.42	53.35	74.61	53.35	91.72	54.44	0.58
8200.00	1.41	348.96	8198.40	55.06	74.55	55.06	92.68	53.56	0.93
8300.00	1.85	358.64	8298.36	57.87	74.28	57.87	94.17	52.08	0.52
8400.00	1.65	4.58	8398.31	60.92	74.36	60.92	96.13	50.67	0.27
8500.00	2.16	353.96	8498.26	64.23	74.27	64.23	98.19	49.15	0.62
8600.00	2.63	351.84	8598.17	68.38	73.75	68.38	100.57	47.16	0.48
8700.00	4.04	336.80	8698.00	73.89	72.04	73.89	103.19	44.27	1.64
8800.00	1.86	311.28	8797.86	78.19	69.43	78.19	104.57	41.60	2.49
8900.00	0.34	293.42	8897.84	79.38	67.94	79.38	104.48	40.56	1.53
9000.00	0.13	357.54	8997.84	79.61	67.66	79.61	104.48	40.36	0.31
9100.00	0.12	89.78	9097.84	79.72	67.76	79.72	104.63	40.36	0.18
9200.00	0.14	5.32	9197.84	79.84	67.88	79.84	104.80	40.37	0.18
9300.00	0.19	232.89	9297.84	79.86	67.76	79.86	104.73	40.31	0.30
9400.00	0.13	227.10	9397.84	79.68	67.54	79.68	104.46	40.29	0.06
9500.00	0.14	144.56	9497.84	79.51	67.53	79.51	104.31	40.34	0.18
9600.00	0.08	47.74	9597.84	79.45	67.65	79.45	104.35	40.41	0.17

Depth FT	Angle Deg	Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Section FT	Distance FT	Direction Deg	Severity Deg/100
9700.00	0.17	86.73	9697.84	79.50	67.85	79.50	104.52	40.48	0.12
9800.00	0.20	141.83	9797.84	79.37	68.10	79.37	104.58	40.63	0.17
9900.00	0.17	156.07	9897.84	79.10	68.27	79.10	104.49	40.80	0.06
10000.00	0.21	183.62	9997.84	78.78	68.32	78.78	104.28	40.93	0.10
10100.00	0.18	167.16	10097.84	78.45	68.34	78.45	104.04	41.06	0.06
10200.00	0.62	125.26	10197.84	77.98	68.82	77.98	104.00	41.43	0.50
10300.00	0.47	169.59	10297.83	77.27	69.33	77.27	103.81	41.90	0.43
10406.00	0.26	195.85	10403.83	76.61	69.34	76.61	103.33	42.15	0.25

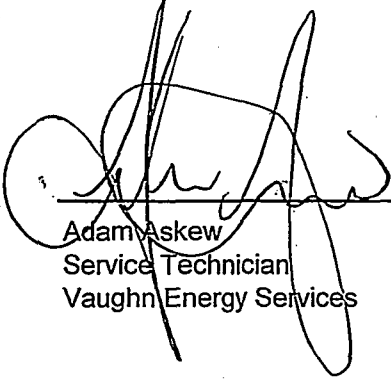
XTOENERGY

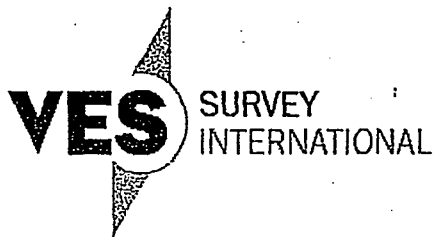
VES Survey International
Midland, Texas
432-563-5444
Surveyor: Adam Askew
Perla Verde 31 State No. 002H / API 30-025-41861



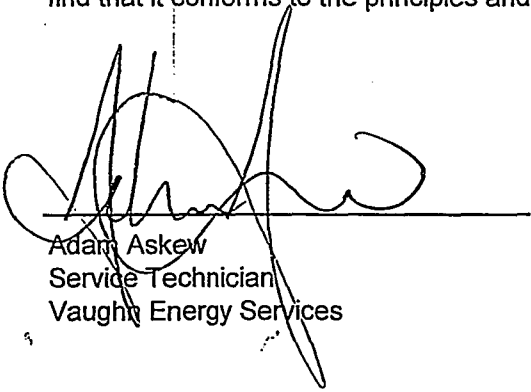


I Adam Askew certify that I am employed by Vaughn Energy Services. That I did on the day(s) of 10/30/14 through 10/30/14 conduct or supervise the taking of a HA Gyro survey from a depth of 0 feet to a depth of 10406 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Vaughn Energy Services, that I am authorized and qualified to make this report; that this survey was conducted at the request of XTO Energy for the Perla Verde 31 State Well # 2H API # 32-025-41861 in Lea County / Parish New Mexico; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by Vaughn Energy Services


Adam Askew
Service Technician
Vaughn Energy Services



I Adam Askew certify that I am employed by Vaughn Energy Services. That I did on the day(s) of 10/30/14 through 10/30/14 conduct or supervise the taking of a HA Gyro survey from a depth of 0 feet to a depth of 10406 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Vaughn Energy Services, that I am authorized and qualified to make this report; that this survey was conducted at the request of XTO Energy for the Perla Verde 31 State Well # 2H API # 32-025-41861 in Lea County / Parish New Mexico; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by Vaughn Energy Services


Adam Askew
Service Technician
Vaughn Energy Services