

30-015-39373



A Schlumberger Company

DIRECTIONAL SURVEY REPORT

DEVON ENERGY

ONYX PWU 29 #3H

EDDY COUNTY, NEW MEXICO

PREPARED BY: STEVE BIBB

Pathfinder

6213 WCR 112
Midland, Texas 79706
Tel (432)687-1647
Fax (432)687-1544



DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) JEREMY HOLMES
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 12-25-11 TO 12-31-11
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: EDDY COUNTY
7. TYPE OF SURVEY(S) PERFORMED: GAMMA-RAY
8. COMPLETE IDENTIFICATION OF WELL:

DEVON ENERGY
ONYX PWU 29 #3H
EDDY COUNTY, NM
RIG: H&P 223

9. SURVEY CERTIFIED FROM: 7311 TO 12275 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE
DISPLACED AT 4627.85 FEET ON A BEARING OF 89.90 DEGREES FROM THE
CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 12368 FEET,
ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.



STEVE BIBB
M/LWD SERVICE COORDINATOR

PathFinder Energy Services, Inc.

BHL Report

Page 01/01
Tie-in Date: 12/24/2011
Date Completed: 12/31/2011

DEVON ENERGY CORPORATION
ONYX WU 29 #3H
EDDY COUNTY, NM
Rig:H&P 223
PathFinder Office Supervisor: STEVE BIBB
PathFinder Field Engineers:JEREMY HOLMES
CODY BUNDICK

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.37.49.7427 N LON:104.6.16.2568 W
GRID Reference:NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 611778.6300 Y: 593176.8100
North Aligned To:GRID NORTH
Total Magnetic Correction: 7.67° EAST TO GRID
Vertical Section Plane: 90.03
Survey Vert. Reference: 25.30' Kelly Bushing To Ground
Altitude:3305.70' Ground To MSL

Measured Depth	12368.00	(feet)
Inclination	85.74	(deg)
Azimuth	90.38	(deg)
True Vertical Depth	7934.40	(feet)
Vertical Section	4627.84	(feet)
Survey X cord	616406.46	(feet)
Survey Y cord	593184.86	(feet)
Survey Lat	32.63047792 N	(deg)
Survey Lon	104.08948303 W	(deg)
Rectangular Corr. N/S	8.07 N	(feet)
Rectangular Corr. E/W	4627.84 E	(feet)
Closure Distance	4627.85	(feet)
Direction of Closure	89.90	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY CORPORATION

ONYX WU 29 #3H

EDDY COUNTY, NM

Rig:H&P 223

PathFinder Office Supervisor: STEVE BIBB

PathFinder Field Engineers: JEREMY HOLMES

CODY BUNDICK

Survey Horiz. Reference:WELLHEAD

Ref Coordinates: LAT:32.37.49.7427 N LON:104.6.16.2568 W

GRID Reference:NAD83 new mexico east Transverse Mercator

Ref GRID Coord: X: 611778.6300 Y: 593176.8100

North Aligned To:GRID NORTH

Total Magnetic Correction: 7.67° EAST TO GRID

Vertical Section Plane: 90.03

Survey Vert. Reference: 25.30' Kelly Bushing To Ground

Altitude:3305.70' Ground To MSL

Survey Calculations by RX5 V6.03E using Minimum Curvature

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
THE FOLLOWING ARE VAUGHN ENERGY SERVICES GYRO SURVEYS.										
200.00	1.03	307.72	199.85	0.00	-2.62	3.09 N	2.62 W	4.05@	319.72	0.00
400.00	1.32	304.70	399.81	200.00	-5.94	5.50 N	5.94 W	8.10@	312.83	0.15
600.00	1.29	309.66	599.76	200.00	-9.57	8.25 N	9.56 W	12.63@	310.79	0.06
800.00	0.67	324.71	799.73	200.00	-11.98	10.64 N	11.97 W	16.02@	311.64	0.33
1000.00	0.43	26.96	999.72	200.00	-12.31	12.27 N	12.31 W	17.38@	314.90	0.30
1200.00	0.16	39.45	1199.72	200.00	-11.80	13.15 N	11.79 W	17.66@	318.12	0.14
1400.00	0.34	338.68	1399.71	200.00	-11.84	13.92 N	11.83 W	18.27@	319.64	0.15
1600.00	0.25	305.38	1599.71	200.00	-12.41	14.73 N	12.40 W	19.25@	319.90	0.09
1800.00	0.41	276.08	1799.71	200.00	-13.48	15.05 N	13.47 W	20.20@	318.18	0.11
2000.00	0.43	292.30	1999.70	200.00	-14.88	15.41 N	14.87 W	21.42@	316.02	0.06
2200.00	0.68	250.59	2199.69	200.00	-16.70	15.31 N	16.69 W	22.64@	312.53	0.23
2400.00	0.61	246.62	2399.68	200.00	-18.79	14.49 N	18.78 W	23.72@	307.64	0.04
2600.00	0.60	248.94	2599.67	200.00	-20.75	13.69 N	20.74 W	24.85@	303.43	0.01
2800.00	0.85	247.62	2799.65	200.00	-23.09	12.75 N	23.09 W	26.37@	298.91	0.13
3000.00	0.86	249.69	2999.63	200.00	-25.87	11.66 N	25.87 W	28.37@	294.27	0.02
3200.00	0.93	259.11	3199.61	200.00	-28.87	10.83 N	28.87 W	30.83@	290.57	0.08
3400.00	0.58	286.86	3399.59	200.00	-31.44	10.82 N	31.43 W	33.24@	289.00	0.25
3600.00	0.85	292.31	3599.57	200.00	-33.78	11.68 N	33.77 W	35.73@	289.08	0.14
3800.00	1.41	0.76	3799.54	200.00	-35.12	14.70 N	35.11 W	38.07@	292.72	0.68
4000.00	1.53	307.01	3999.49	200.00	-37.22	18.77 N	37.21 W	41.68@	296.77	0.67
4200.00	1.38	301.01	4199.42	200.00	-41.42	21.62 N	41.41 W	46.71@	297.57	0.11
4400.00	1.15	313.61	4399.37	200.00	-44.94	24.24 N	44.93 W	51.05@	298.35	0.18
4600.00	0.97	315.05	4599.34	200.00	-47.59	26.83 N	47.57 W	54.62@	299.42	0.09
4800.00	2.70	316.76	4799.23	200.00	-52.01	31.46 N	52.00 W	60.77@	301.17	0.87
5000.00	3.44	310.40	4998.94	200.00	-59.81	38.78 N	59.79 W	71.27@	302.96	0.41

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY CORPORATION
 ONYX WU 29 #3H
 EDDY COUNTY, NM
 RIG:H&P 223

Page 02/05

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
5200.00	3.77	317.19	5198.55	200.00	-68.86	47.49 N	68.83 W	83.62@	304.60	0.27
5400.00	3.74	315.15	5398.12	200.00	-77.93	56.94 N	77.90 W	96.49@	306.16	0.07
5600.00	3.28	317.19	5597.74	200.00	-86.42	65.76 N	86.39 W	108.57@	307.28	0.24
5800.00	3.28	328.79	5797.42	200.00	-93.28	74.85 N	93.24 W	119.57@	308.76	0.33
6000.00	3.87	332.72	5997.03	200.00	-99.35	85.74 N	99.30 W	131.20@	310.81	0.32
6200.00	3.79	326.18	6196.58	200.00	-106.12	97.23 N	106.07 W	143.89@	312.51	0.22
6400.00	3.50	319.62	6396.18	200.00	-113.76	107.37 N	113.71 W	156.39@	313.36	0.25
6600.00	2.74	305.36	6595.88	200.00	-121.62	114.79 N	121.56 W	167.20@	313.36	0.54
6800.00	3.05	287.91	6795.63	200.00	-130.59	119.19 N	130.52 W	176.76@	312.40	0.46
7000.00	2.39	297.31	6995.40	200.00	-139.36	122.74 N	139.29 W	185.66@	311.39	0.40
7200.00	2.51	262.29	7195.23	200.00	-147.40	124.07 N	147.34 W	192.62@	310.10	0.74
** TIED INTO VAUGHN ENERGY SERVICES GYRO SURVEY @ 7256' MD.										
7256.00	1.27	264.88	7251.20	56.00	-149.23	123.85 N	149.17 W	193.88@	309.70	2.22
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
7311.00	6.42	98.85	7306.10	55.00	-146.80	123.32 N	146.74 W	191.68@	310.04	13.92
7342.00	9.67	94.99	7336.79	31.00	-142.49	122.83 N	142.43 W	188.08@	310.77	10.62
7374.00	12.57	87.52	7368.19	32.00	-136.33	122.75 N	136.27 W	183.40@	312.01	10.10
7405.00	15.04	90.33	7398.29	31.00	-128.94	122.87 N	128.88 W	178.06@	313.63	8.25
7437.00	17.24	95.34	7429.03	32.00	-120.07	122.40 N	120.00 W	171.41@	315.57	8.13
7468.00	19.96	97.36	7458.41	31.00	-110.24	121.30 N	110.18 W	163.87@	317.75	9.02
7500.00	23.21	97.27	7488.16	32.00	-98.57	119.80 N	98.50 W	155.10@	320.57	10.16
7532.00	26.20	97.89	7517.23	32.00	-85.31	118.03 N	85.25 W	145.60@	324.16	9.38
7563.00	28.58	97.80	7544.75	31.00	-71.18	116.09 N	71.12 W	136.14@	328.51	7.68
7595.00	31.04	97.45	7572.52	32.00	-55.41	113.98 N	55.35 W	126.71@	334.10	7.71
7626.00	34.29	96.92	7598.61	31.00	-38.82	111.89 N	38.76 W	118.41@	340.89	10.52
7658.00	37.20	96.31	7624.58	32.00	-20.25	109.74 N	20.19 W	111.58@	349.58	9.16
7689.00	40.10	95.98	7648.79	31.00	-1.00	107.67 N	0.94 W	107.67@	359.50	9.38
7720.00	43.09	95.99	7671.97	31.00	19.47	105.52 N	19.52 E	107.31@	10.48	9.65
7752.00	48.10	95.36	7694.35	32.00	42.21	103.27 N	42.27 E	111.58@	22.26	15.72

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY CORPORATION
 ONYX WU 29 #3H
 EDDY COUNTY, NM
 RIG:H&P 223

Page 03/05

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
7784.00	53.11	95.22	7714.66	32.00	66.83	100.99 N	66.88 E	121.13@	33.52	15.66
7815.00	59.18	95.56	7731.92	31.00	92.45	98.57 N	92.50 E	135.17@	43.18	19.60
7847.00	65.25	95.04	7746.83	32.00	120.63	95.96 N	120.68 E	154.18@	51.51	19.02
7878.00	68.85	93.79	7758.91	31.00	149.08	93.77 N	149.13 E	176.16@	57.84	12.19
7909.00	70.43	91.67	7769.70	31.00	178.11	92.38 N	178.16 E	200.69@	62.59	8.19
7940.00	70.79	91.11	7779.99	31.00	207.35	91.68 N	207.39 E	226.75@	66.15	2.06
7972.00	73.51	90.65	7789.80	32.00	237.80	91.21 N	237.85 E	254.73@	69.02	8.61
8003.00	77.03	90.29	7797.68	31.00	267.77	90.96 N	267.82 E	282.85@	71.24	11.41
8035.00	80.81	90.01	7803.83	32.00	299.17	90.88 N	299.22 E	312.72@	73.10	11.84
8067.00	84.59	89.74	7807.89	32.00	330.91	90.95 N	330.95 E	343.22@	74.63	11.84
8098.00	86.26	89.91	7810.37	31.00	361.81	91.05 N	361.85 E	373.13@	75.88	5.42
8130.00	86.09	89.66	7812.50	32.00	393.73	91.17 N	393.78 E	404.20@	76.96	0.94
8161.00	86.88	90.49	7814.40	31.00	424.68	91.12 N	424.72 E	434.39@	77.89	3.69
8192.00	86.97	90.99	7816.07	31.00	455.63	90.72 N	455.68 E	464.62@	78.74	1.64
8287.00	88.90	91.38	7819.49	95.00	550.54	88.76 N	550.59 E	557.70@	80.84	2.07
8382.00	88.20	91.40	7821.89	95.00	645.49	86.46 N	645.53 E	651.29@	82.37	0.74
8478.00	87.58	91.79	7825.43	96.00	741.38	83.79 N	741.43 E	746.15@	83.55	0.76
8571.00	86.61	91.03	7830.14	93.00	834.24	81.50 N	834.28 E	838.25@	84.42	1.32
8665.00	88.37	92.07	7834.26	94.00	928.11	78.96 N	928.15 E	931.50@	85.14	2.17
8760.00	88.11	92.04	7837.17	95.00	1023.00	75.56 N	1023.04 E	1025.83@	85.78	0.28
8854.00	87.32	92.27	7840.92	94.00	1116.86	72.02 N	1116.90 E	1119.22@	86.31	0.87
8949.00	88.29	91.99	7844.56	95.00	1211.73	68.50 N	1211.77 E	1213.70@	86.76	1.06
9043.00	89.43	91.20	7846.43	94.00	1305.67	65.88 N	1305.71 E	1307.37@	87.11	1.48
9138.00	89.08	90.30	7847.67	95.00	1400.66	64.64 N	1400.69 E	1402.18@	87.36	1.02
9233.00	89.78	89.36	7848.61	95.00	1495.65	64.92 N	1495.68 E	1497.09@	87.51	1.23
9327.00	89.60	88.39	7849.12	94.00	1589.63	66.76 N	1589.66 E	1591.06@	87.60	1.05
9421.00	89.52	89.36	7849.84	94.00	1683.60	68.61 N	1683.64 E	1685.04@	87.67	1.04
9516.00	90.75	91.34	7849.62	95.00	1778.60	68.03 N	1778.63 E	1779.93@	87.81	2.45

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY CORPORATION
 ONYX WU 29 #3H
 EDDY COUNTY, NM
 RIG:H&P 223

Page 04/05

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
9610.00	91.01	91.67	7848.17	94.00	1872.55	65.56 N	1872.59 E	1873.74@	87.99	0.45
9705.00	91.19	91.90	7846.35	95.00	1967.49	62.60 N	1967.52 E	1968.52@	88.18	0.31
9799.00	89.16	92.04	7846.06	94.00	2061.43	59.37 N	2061.46 E	2062.32@	88.35	2.17
9893.00	89.43	89.79	7847.22	94.00	2155.41	57.87 N	2155.44 E	2156.22@	88.46	2.41
9988.00	87.32	90.42	7849.91	95.00	2250.36	57.70 N	2250.39 E	2251.13@	88.53	2.32
10082.00	87.41	90.57	7854.24	94.00	2344.26	56.89 N	2344.29 E	2344.98@	88.61	0.19
10177.00	87.05	90.66	7858.83	95.00	2439.14	55.87 N	2439.17 E	2439.81@	88.69	0.39
10271.00	87.49	92.46	7863.30	94.00	2533.00	53.31 N	2533.03 E	2533.59@	88.79	1.97
10366.00	87.93	92.01	7867.10	95.00	2627.85	49.61 N	2627.88 E	2628.35@	88.92	0.66
10460.00	87.49	92.09	7870.86	94.00	2721.72	46.25 N	2721.75 E	2722.14@	89.03	0.48
10555.00	88.90	92.60	7873.85	95.00	2816.59	42.36 N	2816.62 E	2816.93@	89.14	1.58
10650.00	89.34	92.20	7875.31	95.00	2911.50	38.39 N	2911.52 E	2911.77@	89.24	0.63
10744.00	89.16	92.24	7876.54	94.00	3005.42	34.75 N	3005.44 E	3005.64@	89.34	0.20
10839.00	88.81	92.16	7878.22	95.00	3100.34	31.10 N	3100.36 E	3100.51@	89.43	0.38
10934.00	88.81	91.95	7880.19	95.00	3195.26	27.69 N	3195.28 E	3195.40@	89.50	0.22
11028.00	88.29	91.28	7882.57	94.00	3289.19	25.04 N	3289.21 E	3289.30@	89.56	0.90
11123.00	87.76	91.03	7885.85	95.00	3384.12	23.13 N	3384.13 E	3384.21@	89.61	0.62
11218.00	87.41	90.80	7889.85	95.00	3479.02	21.62 N	3479.03 E	3479.10@	89.64	0.44
11312.00	86.97	90.77	7894.46	94.00	3572.90	20.33 N	3572.91 E	3572.97@	89.67	0.47
11407.00	88.90	91.01	7897.88	95.00	3667.82	18.85 N	3667.83 E	3667.88@	89.71	2.05
11501.00	88.99	91.16	7899.61	94.00	3761.79	17.07 N	3761.80 E	3761.84@	89.74	0.19
11596.00	88.81	91.14	7901.44	95.00	3856.76	15.17 N	3856.76 E	3856.79@	89.77	0.19
11691.00	88.72	90.72	7903.48	95.00	3951.72	13.63 N	3951.73 E	3951.75@	89.80	0.45
11785.00	88.81	90.52	7905.51	94.00	4045.70	12.61 N	4045.70 E	4045.72@	89.82	0.23
11880.00	89.08	90.09	7907.26	95.00	4140.68	12.10 N	4140.69 E	4140.70@	89.83	0.53
11974.00	87.05	91.01	7910.43	94.00	4234.62	11.20 N	4234.62 E	4234.64@	89.85	2.37
12069.00	87.58	89.65	7914.88	95.00	4329.51	10.66 N	4329.51 E	4329.53@	89.86	1.54
12164.00	86.35	91.16	7919.91	95.00	4424.37	9.99 N	4424.37 E	4424.38@	89.87	2.05

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY CORPORATION
 ONYX WU 29 #3H
 EDDY COUNTY, NM
 RIG:H&P 223

Page 05/05

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets		Closure Dist Dir		DLS
						(ft)	(ft)	(ft)	(deg)	(dg/100ft)
12258.00	85.91	90.31	7926.26	94.00	4518.14	8.78 N	4518.15 E	4518.16@	89.89	1.02
12275.00	85.74	90.38	7927.49	17.00	4535.10	8.68 N	4535.10 E	4535.11@	89.89	1.08
STRAIGHT LINE PROJECTION TO BIT @ 12368' MD.										
12368.00	85.74	90.38	7934.40	93.00	4627.84	8.07 N	4627.84 E	4627.85@	89.90	0.00

** The survey data at tie-in point was furnished by a recognized survey company and entered as submitted. Survey stations above the tie-in point represent recalculated data by PathFinder Energy Services, Inc. and may reflect minor changes due to rounding differences between survey programs. Only survey stations taken by qualified PathFinder personnel are subject to certification.



A Schlumberger Company

TIE-IN SURVEY INFORMATION SHEET

CLIENT INFORMATION

CLIENT:	DEVON ENERGY CORP.		
LEASE / WELL No.:	ONYX PWU 29	#3H	
WELL LOCATION:	EDDY COUNTY		
COUNTY / STATE / COUNTRY:	EDDY	NM	USA
RIG:	H&P 223		
API WELL No:	30-015-39373		
JOB No:	700004644-WT-WT		
P.O. / AFE No.	158223		
DIRECTIONAL COMPANY:	PATHFINDER		

WELL SITE INFORMATION

TOTAL MAGNETIC CORRECTION (TMC):			
On Wall Plat:	7.68	LWD Calculated:	7.8
		Agreed Upon:	7.8
X =	611778.630000	Feet	Y = 593176.810000
			Feet
SITE LATITUDE:	32.630484 N	SITE LONGITUDE:	104.104516 W
GRID SYSTEM:	TRUE ☐ UTM ☒ LAMBERT ☐	ZONE:	NEW MEXICO EAST
PROPOSED DRIFT DIRECTION:	90.07		
KELLY BUSHING ELEVATION:	3331 25.7'		
ALTITUDE:	3305	Feet	WATER DEPTH:
			Feet

TIE-IN SURVEY

MEASURED DEPTH:	7256		
DRIFT ANGLE:	1.27		
DRIFT DIRECTION:	264.88		
TRUE VERTICAL DEPTH:	7251.2		
VERTICAL SECTION:	-151.79		
RECTANGULAR COORDINATE (N / S) :	123.85		
RECTANGULAR COORDINATE (E / W) :	-149.17		
CLOSURE DISTANCE / DIRECTION:	193.88	309.7	
SURVEY CALCULATION METHOD:	AA ☐	MC ☒	RC ☐ BT ☐
SOURCE OF TIE-IN DATA (COMPANY):	VAUGHN ENERGY SERVICES		
COPY OF TIE-IN SURVEY REPORT	☐ YES ☐ NO		

WELL PLAN

KICKOFF DEPTH:	7263	TOTAL DEPTH:	12368
KICKOFF ANGLE:	0	MAX ANGLE:	90

PES Engineers: JEREMY HOLMES
CODY BUNDICK

**Signature of both field engineers required if applicable

Directional Driller: WADE TENSLEY

DATE: 22-Dec-2011



Company: Devon Energy
Well #: Onyx PWU 29-#3h
County: Eddy
State: New Mexico
API # 30-015-39373

Date: 2011/12/22
Job Type: HA Gyro
Latitude: 32.63048783
Longitude: -104.104509
Elevation: 3723

<u>Depth</u>	<u>Inc</u>	<u>AzG</u>	<u>N/S</u>	<u>E/W</u>	<u>TVD</u>	<u>DL</u>	<u>VS</u>	<u>CD</u>	<u>Cbrg</u>
0.00	0.00	0.00	0.00	0.00	0.00	****	0.00	0.00	0.00
200.00	1.03	307.72	1.10	-1.42	199.99	0.51	-1.44	1.79	307.72
400.00	1.32	304.70	3.51	-4.73	399.95	0.15	-4.81	5.89	306.53
600.00	1.29	309.66	6.26	-8.37	599.90	0.06	-8.50	10.45	306.80
800.00	0.67	324.71	8.66	-10.78	799.86	0.33	-10.97	13.83	308.76
1000.00	0.43	26.96	10.28	-11.12	999.86	0.30	-11.34	15.15	312.75
1200.00	0.16	39.45	11.16	-10.61	1199.85	0.14	-10.84	15.40	316.46
1400.00	0.34	338.68	11.93	-10.64	1399.85	0.15	-10.90	15.99	318.25
1600.00	0.25	305.38	12.73	-11.22	1599.85	0.09	-11.49	16.97	318.61
1800.00	0.41	276.08	13.07	-12.30	1799.85	0.11	-12.58	17.95	316.73
2000.00	0.43	292.30	13.43	-13.71	1999.84	0.06	-14.00	19.19	314.41
2200.00	0.68	250.59	13.32	-15.52	2199.83	0.23	-15.80	20.45	310.65
2400.00	0.61	246.62	12.50	-17.61	2399.82	0.04	-17.88	21.60	305.37
2600.00	0.60	248.94	11.70	-19.57	2599.81	0.01	-19.81	22.80	300.88
2800.00	0.85	247.62	10.76	-21.91	2799.79	0.13	-22.14	24.41	296.16
3000.00	0.86	249.69	9.68	-24.69	2999.77	0.02	-24.89	26.52	291.40
3200.00	0.93	259.11	8.85	-27.69	3199.75	0.08	-27.87	29.07	287.73
3400.00	0.58	286.86	8.84	-30.25	3399.73	0.25	-30.44	31.52	286.29
3600.00	0.85	292.31	9.70	-32.60	3599.71	0.14	-32.80	34.01	286.57
3800.00	1.41	0.76	12.73	-33.94	3799.68	0.68	-34.20	36.25	290.56
4000.00	1.53	307.01	16.80	-36.03	3999.62	0.67	-36.39	39.76	294.99
4200.00	1.38	301.26	19.65	-40.22	4199.56	0.10	-40.63	44.77	296.04
4400.00	1.15	313.61	22.28	-43.73	4399.51	0.18	-44.20	49.08	297.00
4600.00	0.97	315.05	24.87	-46.38	4599.48	0.09	-46.91	52.63	298.20
4800.00	2.70	316.76	29.51	-50.82	4799.37	0.87	-51.44	58.76	300.14
5000.00	3.44	310.40	36.83	-58.61	4999.08	0.40	-59.39	69.22	302.14
5200.00	3.77	317.13	45.54	-67.66	5198.68	0.27	-68.62	81.56	303.94
5400.00	3.74	315.15	54.99	-76.73	5398.25	0.07	-77.90	94.40	305.63
5600.00	3.28	317.19	63.82	-85.23	5597.88	0.24	-86.58	106.47	306.83
5800.00	3.94	328.79	73.89	-92.68	5797.48	0.49	-94.24	118.53	308.57
6000.00	3.87	332.72	85.76	-99.33	5997.02	0.14	-101.15	131.23	310.81
6200.00	3.79	326.18	97.25	-106.10	6196.57	0.22	-108.16	143.93	312.51
6400.00	3.50	319.62	107.38	-113.72	6396.17	0.25	-116.00	156.41	313.36
6600.00	2.74	305.36	114.80	-121.58	6595.88	0.54	-124.01	167.21	313.36
6800.00	3.05	287.91	119.20	-130.54	6795.62	0.46	-133.07	176.78	312.40
7000.00	2.39	297.31	122.75	-139.30	6995.40	0.40	-141.90	185.66	311.39
7200.00	2.51	262.29	124.07	-147.34	7195.23	0.74	-149.97	192.62	310.10
7256.00	1.27	264.88	123.85	-149.17	7251.20	2.22	-151.79	193.88	309.70

Horizontal Displacement is:

193.88 feet @

309.7 degrees.

PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

Devon Energy Production Company, L.P.
Onyx PWU 29 #3H
Eddy County, NM
Rig:HP 223

Mon Dec 12 15:54:43 2011

Coordinates

Latitude: 32.630484 N (32 deg. 37 min. 49.7427 sec.)
Longitude: 104.104516 W (-104 deg. 6 min. 16.2568 sec.)
Elevation: 3330.70 feet.
Calculation Date: Dec/12/2011

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.4588 degrees
Total Magnetic Field: 0.48753 gauss
Magnetic Declination: 7.801249 degrees
Horizontal Intensity: 0.240377 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.801249 Degs

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 611778.6300 feet
Y: 593176.8100 feet
True to Grid: (convergence) -0.123383 degrees
Magnetic to Grid: 7.677866 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 7.677866 Degs.

(Field Calculation)

PathFinder Energy Services, Inc. Magnetic & Grid Calculations

DEVON ENERGY CORP
ONYX WU 29 #3H
SCANLON DRAW ; BONE SPRING
Rig:HP 223

Sun Dec 25 08:48:50 2011

Coordinates

Latitude: 32.630484 N (32 deg. 37 min. 49.7427 sec.)
Longitude: 104.104516 W (-104 deg. 6 min. 16.2568 sec.)
Elevation: 3330.70 feet.
Calculation Date: Dec/22/2011

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.4581 degrees
Total Magnetic Field: 0.48750 gauss
Magnetic Declination: 7.797908 degrees
Horizontal Intensity: 0.240369 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.797908 Degr

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 611778.6300 feet
Y: 593176.8100 feet
True to Grid: (convergence) -0.123383 degrees
Magnetic to Grid: 7.674524 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 7.674524 Degr.



A GYRO TECHNOLOGIES INC. COMPANY

PO Box 261021
Corpus Christi, Texas 78426
(361) 767-0602 • (800) 606-GYRO • Fax (361) 767-0612

January 31, 2012

Devon Energy Production Company
20 North Broadway
Oklahoma City, OK 73102

Attn: Mark Cooper

Re: **Onyx PWU 29 #3H**

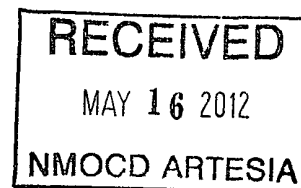
Please find enclosed a copy of the survey from 0' to 7,256' ran on the above referenced well.

If I can be of any further service, please do not hesitate to call me at 800-606-4976.

Sincerely,

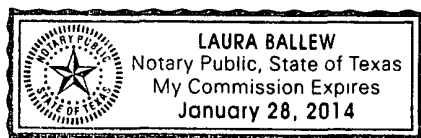
Keith Havelka
Operations

STATE OF TEXAS §
COUNTY OF NUECES §



This instrument was acknowledged before me on the 31st day of January, A.D., 2012, by Keith Havelka.

Laura Ballew
Notary Public, State of Texas





Company: Devon Energy Production Co. L.P.
Lease/Well: Onyx PWU 29/#3H
Location: S29, T19s, R29e
Rig Name: H&P 223
State/County: New Mexico/Eddy
Latitude: 32.63
GRID North is 0.12 Degrees East of True North
VS-Azi: 91.23 Degrees



Depth Reference : RKB=25 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: onyx pwu 29-#3h_ed.ut

Minimum Curvature Method

Report Date/Time: 2/1/2012 / 09:10

Vaughn Energy Services

Gardendale, Texas

432-563-5444

Surveyor: Seth Hardin

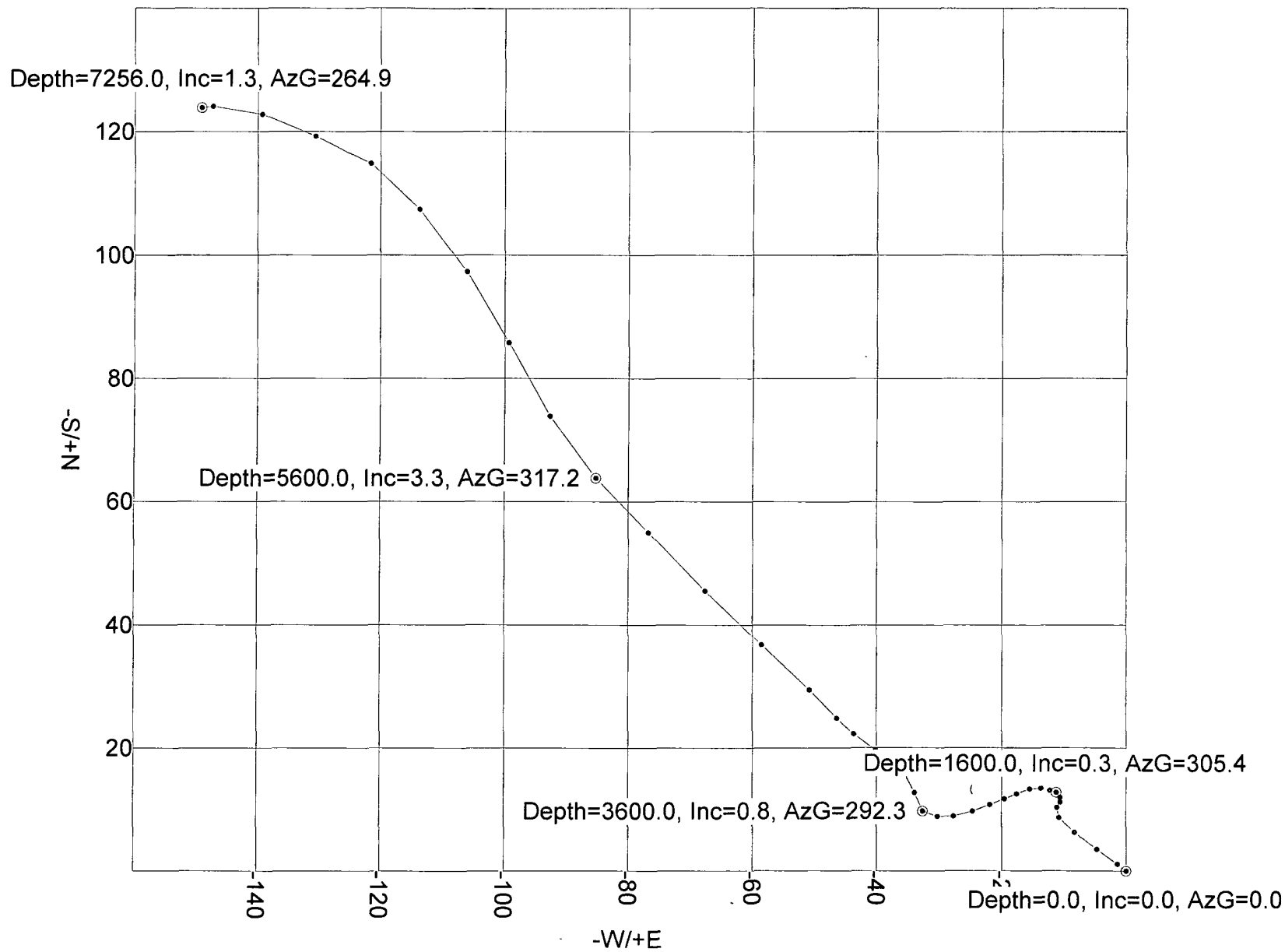
Onyx PWU 29 #3H / API 30-015-39373

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	****
200.00	1.03	307.72	199.99	1.10	-1.42	-1.44	1.79	307.72	0.51
400.00	1.32	304.70	399.95	3.51	-4.73	-4.81	5.89	306.53	0.15
600.00	1.29	309.66	599.90	6.26	-8.37	-8.50	10.45	306.80	0.06
800.00	0.67	324.71	799.86	8.66	-10.78	-10.97	13.83	308.76	0.33
1000.00	0.43	26.96	999.86	10.28	-11.12	-11.34	15.15	312.75	0.30
1200.00	0.16	39.45	1199.85	11.16	-10.61	-10.84	15.40	316.46	0.14
1400.00	0.34	338.68	1399.85	11.93	-10.64	-10.90	15.99	318.25	0.15
1600.00	0.25	305.38	1599.85	12.73	-11.22	-11.49	16.97	318.61	0.09
1800.00	0.41	276.08	1799.85	13.07	-12.30	-12.58	17.95	316.73	0.11
2000.00	0.43	292.30	1999.84	13.43	-13.71	-14.00	19.19	314.41	0.06
2200.00	0.68	250.59	2199.83	13.32	-15.52	-15.80	20.45	310.65	0.23
2400.00	0.61	246.62	2399.82	12.50	-17.61	-17.88	21.60	305.37	0.04
2600.00	0.60	248.94	2599.81	11.70	-19.57	-19.81	22.80	300.88	0.01
2800.00	0.85	247.62	2799.79	10.76	-21.91	-22.14	24.41	296.16	0.13
3000.00	0.86	249.69	2999.77	9.68	-24.69	-24.89	26.52	291.40	0.02
3200.00	0.93	259.11	3199.75	8.85	-27.69	-27.87	29.07	287.73	0.08
3400.00	0.58	286.86	3399.73	8.84	-30.25	-30.44	31.52	286.29	0.25
3600.00	0.85	292.31	3599.71	9.70	-32.60	-32.80	34.01	286.57	0.14

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
3800.00	1.41	0.76	3799.68	12.73	-33.94	-34.20	36.25	290.56	0.68
4000.00	1.53	307.01	3999.62	16.80	-36.03	-36.39	39.76	294.99	0.67
4200.00	1.38	301.26	4199.56	19.65	-40.22	-40.63	44.77	296.04	0.10
4400.00	1.15	313.61	4399.51	22.28	-43.73	-44.20	49.08	297.00	0.18
4600.00	0.97	315.05	4599.48	24.87	-46.38	-46.91	52.63	298.20	0.09
4800.00	2.70	316.76	4799.37	29.51	-50.82	-51.44	58.76	300.14	0.87
5000.00	3.44	310.40	4999.08	36.83	-58.61	-59.39	69.22	302.14	0.40
5200.00	3.77	317.13	5198.68	45.54	-67.66	-68.62	81.56	303.94	0.27
5400.00	3.74	315.15	5398.25	54.99	-76.73	-77.90	94.40	305.63	0.07
5600.00	3.28	317.19	5597.88	63.82	-85.23	-86.58	106.47	306.83	0.24
5800.00	3.94	328.79	5797.48	73.89	-92.68	-94.24	118.53	308.57	0.49
6000.00	3.87	332.72	5997.02	85.76	-99.33	-101.15	131.23	310.81	0.14
6200.00	3.79	326.18	6196.57	97.25	-106.10	-108.16	143.93	312.51	0.22
6400.00	3.50	319.62	6396.17	107.38	-113.72	-116.00	156.41	313.36	0.25
6600.00	2.74	305.36	6595.88	114.80	-121.58	-124.01	167.21	313.36	0.54
6800.00	3.05	287.91	6795.62	119.20	-130.54	-133.07	176.78	312.40	0.46
7000.00	2.39	297.31	6995.40	122.75	-139.30	-141.90	185.66	311.39	0.40
7200.00	2.51	262.29	7195.23	124.07	-147.34	-149.97	192.62	310.10	0.74
7256.00	1.27	264.88	7251.20	123.85	-149.17	-151.79	193.88	309.70	2.22



Vaughn Energy Services
Gardendale, Texas
432-563-5444
Surveyor: Seth Hardin
Onyx PWU 29 #3H / API 30-015-39373



VES Survey Date: 12/22/2011