



A Schlumberger Company

DIRECTIONAL SURVEY REPORT

30-015-39145

DEVON ENERGY

SNAPPING 2 STATE #8H

EDDY COUNTY, NEW MEXICO

PREPARED BY: STEVE BIBB

Pathfinder
8213 Wagon 112
Midland, Texas 79701
Tel: (432) 685-1111
Fax: (432) 685-1111

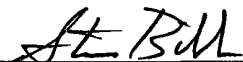


DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) NICK POND
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 12-10-11 TO 12-29-11
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
SNAPPING 2 STATE #8H
EDDY COUNTY, NM
RIG: H&P 416
9. SURVEY CERTIFIED FROM: 1004 TO 13600 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 4631.75 FEET ON A BEARING OF 352.38 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 13654 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: 12/10/2011
Date Completed: 12/29/2011

DEVON ENERGY
SNAPPING STATE 2 #8H
EDDY COUNTY, NM
Rig:H&P 416

PathFinder Office Supervisor: STEVE BIBB
PathFinder Field Engineers:NICK POND
LUIS NATIVIDAD

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.3.56.8390 N LON:103.44.52.4546 W
GRID Reference:NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 722685.2800 Y: 388163.3200
North Aligned To:GRID NORTH
Total Magnetic Correction: 7.28°EAST TO GRID
Vertical Section Plane: 351.83
Survey Vert. Reference: 25.00' Rotary Table To Ground
Altitude:3241.00' Ground To MSL

Measured Depth	13654.00	(feet)
Inclination	89.08	(deg)
Azimuth	3.60	(deg)
True Vertical Depth	8981.22	(feet)
Vertical Section	4631.54	(feet)
Survey X cord	722071.17	(feet)
Survey Y cord	392754.18	(feet)
Survey Lat	32.07841724 N	(deg)
Survey Lon	103.74980630 W	(deg)
Rectangular Corr. N/S	4590.86 N	(feet)
Rectangular Corr. E/W	614.11 W	(feet)
Closure Distance	4631.75	(feet)
Direction of Closure	352.38	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

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SNAPPING STATE 2 #8H
EDDY COUNTY, NM
Rig:H&P 416
PathFinder Office Supervisor: STEVE BIBB
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Survey Vert. Reference: 25.00' Rotary Table To Ground
Altitude:3241.00' 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 PRO-SHOT SURVEYS										
432.05	0.80	223.00	432.03	0.00	-1.89	2.21 S	2.06 W	3.02@	223.01	0.00
494.43	0.40	255.70	494.41	62.38	-2.19	2.58 S	2.57 W	3.64@	224.86	0.82
544.60	0.70	278.70	544.58	50.17	-2.12	2.58 S	3.04 W	3.98@	229.72	0.73
605.41	1.20	310.70	605.38	60.81	-1.53	2.10 S	3.89 W	4.42@	241.58	1.17
696.99	1.60	311.70	696.93	91.58	0.17	0.63 S	5.57 W	5.61@	263.56	0.44
789.45	2.10	343.70	789.34	92.46	2.83	1.86 N	7.01 W	7.25@	284.83	1.22
**	TIED INTO PRO-SHOT GYRO SURVEY @ 881.84'MD									
881.84	2.20	352.70	881.67	92.39	6.28	5.24 N	7.71 W	9.32@	304.20	0.38
THE FOLLOWING ARE PATHFINDER MWD SURVEYS										
1004.00	1.85	342.07	1003.75	122.16	10.57	9.44 N	8.61 W	12.78@	317.62	0.42
1098.00	2.29	318.25	1097.69	94.00	13.63	12.29 N	10.33 W	16.05@	319.94	1.02
1193.00	2.73	299.61	1192.60	95.00	16.60	14.82 N	13.56 W	20.09@	317.54	0.97
1287.00	2.64	292.85	1286.50	94.00	19.08	16.77 N	17.50 W	24.24@	313.77	0.35
1382.00	2.29	293.81	1381.41	95.00	21.22	18.38 N	21.26 W	28.10@	310.85	0.37
1476.00	3.34	258.13	1475.31	94.00	22.04	18.58 N	25.66 W	31.68@	305.91	2.12
1571.00	5.10	241.17	1570.05	95.00	20.37	15.97 N	32.06 W	35.82@	296.48	2.25
1665.00	5.36	237.83	1663.66	94.00	17.11	11.62 N	39.44 W	41.12@	286.42	0.43
1760.00	5.10	238.00	1758.26	95.00	13.60	7.02 N	46.78 W	47.30@	278.53	0.27
1854.00	4.84	238.62	1851.91	94.00	10.35	2.74 N	53.71 W	53.78@	272.92	0.28
1949.00	4.48	238.00	1946.59	95.00	7.27	1.31 S	60.27 W	60.29@	268.75	0.38
2044.00	4.40	240.73	2041.31	95.00	4.46	5.06 S	66.60 W	66.79@	265.66	0.24
2138.00	5.63	239.06	2134.95	94.00	1.37	9.19 S	73.70 W	74.27@	262.89	1.32
2233.00	6.07	240.20	2229.45	95.00	-2.28	14.09 S	82.06 W	83.26@	260.26	0.48
2327.00	5.54	240.99	2322.97	94.00	-5.73	18.76 S	90.34 W	92.26@	258.27	0.57
2422.00	5.28	241.43	2417.55	95.00	-8.88	23.07 S	98.19 W	100.86@	256.78	0.28
2517.00	5.10	240.99	2512.16	95.00	-11.91	27.21 S	105.72 W	109.16@	255.57	0.19

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY
SNAPPING STATE 2 #8H
EDDY COUNTY, NM
RIG:H&P 416

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
2611.00	4.66	240.46	2605.82	94.00	-14.79	31.12 S	112.69 W	116.91@	254.56	0.47
2705.00	5.01	250.75	2699.48	94.00	-16.97	34.35 S	119.89 W	124.71@	254.01	0.99
2800.00	4.92	257.16	2794.13	95.00	-18.10	36.63 S	127.78 W	132.92@	254.01	0.59
2894.00	6.16	245.39	2887.69	94.00	-19.85	39.62 S	136.29 W	141.94@	253.79	1.78
2989.00	6.16	245.30	2982.14	95.00	-22.74	43.88 S	145.56 W	152.03@	253.23	0.01
3083.00	5.36	240.11	3075.67	94.00	-25.80	48.17 S	153.95 W	161.31@	252.62	1.01
3178.00	4.57	241.08	3170.31	95.00	-28.79	52.21 S	161.11 W	169.36@	252.04	0.84
3273.00	6.16	243.72	3264.89	95.00	-31.71	56.30 S	168.99 W	178.12@	251.57	1.69
3367.00	6.07	243.89	3358.35	94.00	-34.81	60.72 S	177.98 W	188.05@	251.16	0.10
3462.00	6.33	240.55	3452.80	95.00	-38.26	65.50 S	187.05 W	198.18@	250.70	0.47
3556.00	5.80	230.44	3546.28	94.00	-42.61	71.08 S	195.22 W	207.76@	249.99	1.27
3651.00	5.72	235.72	3640.80	95.00	-47.20	76.80 S	202.83 W	216.89@	249.26	0.56
3745.00	4.92	241.17	3734.39	94.00	-50.68	81.38 S	210.24 W	225.44@	248.84	1.01
3840.00	4.57	219.99	3829.07	95.00	-54.64	86.25 S	216.24 W	232.80@	248.25	1.87
3939.00	6.77	233.61	3927.59	99.00	-60.03	92.73 S	223.47 W	241.95@	247.46	2.59
4029.00	6.77	243.01	4016.96	90.00	-64.25	98.29 S	232.47 W	252.39@	247.08	1.23
4124.00	5.36	241.87	4111.43	95.00	-67.58	102.92 S	241.37 W	262.40@	246.91	1.49
4303.00	4.48	244.15	4289.77	179.00	-72.55	109.91 S	255.04 W	277.71@	246.69	0.50
4398.00	5.28	242.13	4384.42	95.00	-75.15	113.57 S	262.24 W	285.78@	246.58	0.86
4493.00	7.56	250.57	4478.82	95.00	-77.85	117.70 S	272.00 W	296.37@	246.60	2.59
4587.00	7.39	249.96	4572.02	94.00	-80.30	121.82 S	283.51 W	308.57@	246.75	0.20
4681.00	8.53	252.86	4665.12	94.00	-82.63	125.95 S	295.85 W	321.54@	246.94	1.29
4776.00	8.00	251.98	4759.13	95.00	-84.86	130.07 S	308.87 W	335.14@	247.16	0.57
4871.00	7.56	250.84	4853.25	95.00	-87.18	134.17 S	321.06 W	347.97@	247.32	0.49
4965.00	8.97	250.57	4946.28	94.00	-89.79	138.64 S	333.81 W	361.45@	247.45	1.50
5060.00	8.44	249.69	5040.18	95.00	-92.70	143.52 S	347.33 W	375.82@	247.55	0.57
5154.00	7.56	248.64	5133.27	94.00	-95.56	148.17 S	359.56 W	388.89@	247.60	0.95
5249.00	6.86	247.32	5227.51	95.00	-98.41	152.63 S	370.62 W	400.82@	247.62	0.76

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SNAPPING STATE 2 #8H
EDDY COUNTY, NM
RIG:H&P 416

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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)
5344.00	8.53	240.38	5321.66	95.00	-102.41	158.30 S	381.98 W	413.48@	247.49	2.01
5438.00	8.18	240.82	5414.66	94.00	-107.36	165.01 S	393.88 W	427.04@	247.27	0.38
5533.00	7.65	240.11	5508.75	95.00	-112.12	171.45 S	405.26 W	440.04@	247.07	0.57
5627.00	7.30	238.62	5601.96	94.00	-116.79	177.68 S	415.78 W	452.16@	246.86	0.43
5722.00	7.56	242.75	5696.16	95.00	-121.21	183.68 S	426.49 W	464.37@	246.70	0.63
5817.00	6.95	242.05	5790.40	95.00	-125.20	189.24 S	437.12 W	476.33@	246.59	0.65
5912.00	8.27	246.18	5884.56	95.00	-128.99	194.69 S	448.45 W	488.89@	246.53	1.50
6006.00	8.35	248.46	5977.57	94.00	-132.39	199.93 S	460.99 W	502.47@	246.55	0.36
6101.00	8.00	246.79	6071.61	95.00	-135.70	205.07 S	473.48 W	515.98@	246.58	0.45
6195.00	7.74	245.47	6164.72	94.00	-139.18	210.27 S	485.25 W	528.85@	246.57	0.34
6290.00	7.47	245.03	6258.89	95.00	-142.77	215.54 S	496.67 W	541.42@	246.54	0.29
6385.00	7.65	257.51	6353.07	95.00	-145.03	219.51 S	508.44 W	553.80@	246.65	1.74
6480.00	7.12	256.46	6447.28	95.00	-146.06	222.26 S	520.34 W	565.82@	246.87	0.58
6574.00	6.60	255.76	6540.60	94.00	-147.17	224.95 S	531.24 W	576.90@	247.05	0.56
6669.00	7.83	254.79	6634.85	95.00	-148.54	227.99 S	542.77 W	588.71@	247.22	1.30
6764.00	7.12	254.35	6729.04	95.00	-150.10	231.28 S	554.69 W	600.97@	247.37	0.75
6858.00	6.86	254.44	6822.34	94.00	-151.58	234.35 S	565.70 W	612.33@	247.50	0.28
6953.00	6.33	253.56	6916.72	95.00	-153.07	237.36 S	576.19 W	623.17@	247.61	0.57
7047.00	5.89	252.50	7010.18	94.00	-154.59	240.27 S	585.76 W	633.13@	247.70	0.48
7142.00	5.54	249.60	7104.71	95.00	-156.35	243.34 S	594.71 W	642.57@	247.75	0.48
7236.00	4.92	249.08	7198.32	94.00	-158.21	246.36 S	602.73 W	651.13@	247.77	0.66
7331.00	4.57	247.14	7292.99	95.00	-160.06	249.28 S	610.02 W	658.99@	247.77	0.41
7425.00	4.57	244.68	7386.69	94.00	-162.12	252.34 S	616.86 W	666.47@	247.75	0.21
7520.00	4.57	243.10	7481.39	95.00	-164.45	255.67 S	623.65 W	674.03@	247.71	0.13
7614.00	4.40	241.52	7575.10	94.00	-166.90	259.09 S	630.16 W	681.34@	247.65	0.22
7709.00	4.04	239.32	7669.85	95.00	-169.45	262.53 S	636.24 W	688.28@	247.58	0.42
7803.00	2.73	266.74	7763.69	94.00	-170.53	264.35 S	641.33 W	693.67@	247.60	2.18
7898.00	2.46	267.45	7858.59	95.00	-170.13	264.57 S	645.62 W	697.73@	247.72	0.29

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7992.00	2.37	265.60	7952.50	94.00	-169.81	264.81 S	649.58 W	701.48@	247.82	0.13
8087.00	2.20	262.88	8047.43	95.00	-169.64	265.18 S	653.34 W	705.11@	247.91	0.21
8182.00	2.02	260.06	8142.36	95.00	-169.66	265.70 S	656.80 W	708.51@	247.98	0.22
8280.00	1.93	262.93	8240.31	98.00	-169.68	266.20 S	660.14 W	711.79@	248.04	0.14
8375.00	1.93	263.96	8335.25	95.00	-169.59	266.56 S	663.32 W	714.88@	248.11	0.04
8469.00	6.07	348.10	8429.05	94.00	-164.57	261.86 S	665.92 W	715.56@	248.53	6.57
8501.00	9.67	358.25	8460.75	32.00	-160.21	257.52 S	666.35 W	714.38@	248.87	12.02
8532.00	13.28	3.58	8491.12	31.00	-154.14	251.36 S	666.21 W	712.05@	249.33	12.13
8564.00	15.83	5.95	8522.09	32.00	-146.30	243.35 S	665.53 W	708.62@	249.91	8.18
8595.00	16.36	6.31	8551.88	31.00	-137.97	234.81 S	664.61 W	704.87@	250.54	1.74
8627.00	18.11	7.71	8582.44	32.00	-128.83	225.40 S	663.45 W	700.69@	251.24	5.62
8658.00	20.31	7.99	8611.71	31.00	-119.02	215.29 S	662.05 W	696.18@	251.99	7.10
8690.00	21.72	6.68	8641.58	32.00	-107.97	203.91 S	660.59 W	691.35@	252.85	4.64
8721.00	23.83	5.59	8670.17	31.00	-96.34	191.98 S	659.31 W	686.70@	253.77	6.94
8753.00	25.15	7.96	8699.29	32.00	-83.53	178.81 S	657.74 W	681.61@	254.79	5.14
8784.00	27.26	8.87	8727.10	31.00	-70.41	165.27 S	655.73 W	676.24@	255.85	6.93
8816.00	29.90	8.67	8755.20	32.00	-55.77	150.14 S	653.40 W	670.43@	257.06	8.26
8847.00	32.98	6.29	8781.64	31.00	-40.20	134.11 S	651.31 W	664.98@	258.36	10.71
8879.00	35.96	4.13	8808.02	32.00	-22.58	116.08 S	649.68 W	659.97@	259.87	10.06
8911.00	40.27	0.96	8833.20	32.00	-3.18	96.36 S	648.83 W	655.95@	261.55	14.79
8942.00	43.97	359.29	8856.19	31.00	17.40	75.57 S	648.80 W	653.18@	263.36	12.47
8973.00	47.57	358.06	8877.81	31.00	39.45	53.37 S	649.32 W	651.51@	265.30	11.96
9005.00	51.27	356.92	8898.62	32.00	63.63	29.10 S	650.39 W	651.04@	267.44	11.88
9036.00	53.20	355.95	8917.61	31.00	88.05	4.64 S	651.91 W	651.93@	269.59	6.70
9069.00	58.12	355.95	8936.22	33.00	115.22	22.53 N	653.84 W	654.23@	271.97	14.91
9102.00	63.31	356.39	8952.35	33.00	143.91	51.24 N	655.76 W	657.76@	274.47	15.77
9131.00	65.69	356.74	8964.84	29.00	170.00	77.37 N	657.32 W	661.86@	276.71	8.28
9162.00	68.15	357.71	8976.99	31.00	198.39	105.85 N	658.70 W	667.15@	279.13	8.44

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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)
9196.00	72.02	359.91	8988.57	34.00	230.11	137.80 N	659.36 W	673.61@	281.80	12.91
9226.00	74.30	0.79	8997.26	30.00	258.50	166.51 N	659.18 W	679.89@	284.18	8.10
9258.00	78.96	1.23	9004.66	32.00	289.23	197.63 N	658.63 W	687.65@	286.70	14.62
9289.00	83.62	0.52	9009.35	31.00	319.48	228.26 N	658.17 W	696.63@	289.13	15.20
9321.00	87.14	359.29	9011.93	32.00	351.05	260.15 N	658.22 W	707.77@	291.57	11.65
9352.00	88.64	358.59	9013.07	31.00	381.79	291.13 N	658.79 W	720.25@	293.84	5.34
9416.00	91.63	358.50	9012.92	64.00	445.35	355.10 N	660.42 W	749.83@	298.27	4.67
9510.00	91.89	358.77	9010.03	94.00	538.64	449.03 N	662.66 W	800.46@	304.12	0.40
9629.00	90.57	358.68	9007.48	119.00	656.75	567.97 N	665.30 W	874.77@	310.49	1.11
9723.00	90.84	358.77	9006.32	94.00	750.06	661.94 N	667.39 W	939.99@	314.76	0.30
9818.00	91.63	358.94	9004.27	95.00	844.33	756.90 N	669.29 W	1010.37@	318.51	0.85
9912.00	90.57	360.00	9002.47	94.00	937.47	850.87 N	670.16 W	1083.10@	321.78	1.59
10007.00	90.57	0.08	9001.52	95.00	1031.49	945.87 N	670.10 W	1159.18@	324.68	0.08
10101.00	91.19	0.35	9000.08	94.00	1124.48	1039.85 N	669.74 W	1236.87@	327.22	0.72
10196.00	89.43	359.73	8999.57	95.00	1218.50	1134.85 N	669.68 W	1317.71@	329.46	1.96
10290.00	89.25	360.00	9000.65	94.00	1311.57	1228.84 N	669.90 W	1399.58@	331.40	0.35
10385.00	89.25	0.08	9001.89	95.00	1405.59	1323.83 N	669.83 W	1483.65@	333.16	0.08
10480.00	89.16	0.17	9003.21	95.00	1499.58	1418.82 N	669.62 W	1568.90@	334.73	0.13
10574.00	88.99	0.08	9004.73	94.00	1592.59	1512.81 N	669.42 W	1654.30@	336.13	0.20
10669.00	90.57	0.96	9005.09	95.00	1686.49	1607.80 N	668.56 W	1741.26@	337.42	1.90
10763.00	90.66	1.40	9004.08	94.00	1779.24	1701.78 N	666.62 W	1827.68@	338.61	0.48
10858.00	90.13	1.67	9003.43	95.00	1872.88	1796.74 N	664.08 W	1915.54@	339.72	0.63
10952.00	90.40	1.75	9002.99	94.00	1965.48	1890.70 N	661.27 W	2003.00@	340.72	0.30
11047.00	91.19	359.91	9001.67	95.00	2059.30	1985.67 N	659.90 W	2092.45@	341.62	2.11
11142.00	91.10	359.64	8999.78	95.00	2153.37	2080.65 N	660.27 W	2182.91@	342.39	0.30
11236.00	91.36	0.17	8997.76	94.00	2246.41	2174.63 N	660.42 W	2272.70@	343.11	0.63
11331.00	91.45	0.70	8995.43	95.00	2340.32	2269.60 N	659.70 W	2363.53@	343.79	0.57
11425.00	90.31	359.29	8993.99	94.00	2433.35	2363.59 N	659.71 W	2453.93@	344.40	1.93

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY
SNAPPING STATE 2 #8H
EDDY COUNTY, NM
RIG:H&P 416

Page 06/06

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)
11520.00	89.60	358.68	8994.06	95.00	2527.61	2458.57 N	661.39 W	2545.98@	344.94	0.98
11614.00	89.87	359.20	8994.49	94.00	2620.88	2552.55 N	663.13 W	2637.28@	345.44	0.62
11709.00	90.75	357.45	8993.98	95.00	2715.27	2647.50 N	665.91 W	2729.97@	345.88	2.06
11804.00	91.45	0.70	8992.16	95.00	2809.48	2742.46 N	667.44 W	2822.51@	346.32	3.50
11898.00	92.42	2.10	8988.98	94.00	2902.11	2836.38 N	665.15 W	2913.32@	346.80	1.81
11993.00	90.40	1.93	8986.65	95.00	2995.58	2931.28 N	661.81 W	3005.07@	347.28	2.13
12087.00	90.57	2.19	8985.85	94.00	3088.09	3025.22 N	658.43 W	3096.04@	347.72	0.33
12182.00	91.28	2.37	8984.32	95.00	3181.50	3120.13 N	654.65 W	3188.07@	348.15	0.77
12276.00	92.59	3.51	8981.14	94.00	3273.68	3213.95 N	649.83 W	3278.99@	348.57	1.85
12371.00	93.12	2.81	8976.41	95.00	3366.71	3308.69 N	644.60 W	3370.89@	348.98	0.92
12465.00	91.89	1.67	8972.30	94.00	3459.07	3402.52 N	640.93 W	3462.36@	349.33	1.78
12560.00	90.57	0.44	8970.26	95.00	3552.82	3497.48 N	639.19 W	3555.41@	349.64	1.90
12655.00	90.40	0.79	8969.46	95.00	3646.70	3592.47 N	638.17 W	3648.71@	349.93	0.41
12749.00	88.55	0.79	8970.32	94.00	3739.55	3686.46 N	636.87 W	3741.06@	350.20	1.97
12844.00	88.37	1.14	8972.87	95.00	3833.31	3781.41 N	635.27 W	3834.40@	350.46	0.41
12938.00	89.87	359.56	8974.32	94.00	3926.25	3875.39 N	634.70 W	3927.02@	350.70	2.32
13053.00	89.96	0.08	8974.49	115.00	4040.14	3990.39 N	635.06 W	4040.61@	350.96	0.46
13127.00	89.52	0.35	8974.82	74.00	4113.35	4064.39 N	634.78 W	4113.66@	351.12	0.70
13222.00	89.60	1.05	8975.55	95.00	4207.21	4159.38 N	633.62 W	4207.36@	351.34	0.74
13316.00	89.25	1.93	8976.50	94.00	4299.87	4253.34 N	631.18 W	4299.92@	351.56	1.01
13411.00	89.25	2.54	8977.74	95.00	4393.30	4348.26 N	627.47 W	4393.30@	351.79	0.64
13506.00	89.25	2.98	8978.98	95.00	4486.57	4443.14 N	622.90 W	4486.59@	352.02	0.46
13600.00	89.08	3.60	8980.35	94.00	4578.68	4536.97 N	617.50 W	4578.80@	352.25	0.68
STRAIGHT-LINE PROJECTION TO BIT @ 13654' MD.										
13654.00	89.08	3.60	8981.22	54.00	4631.54	4590.86 N	614.11 W	4631.75@	352.38	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		
LEASE / WELL No.:	SNAPPING 2 STATE	#8H	
WELL LOCATION:	WILDCAT; BONE SPRONG		
COUNTY / STATE / COUNTRY:	EDDY	NM	USA
RIG:	H&P 416		
API WELL No:	30-015-39165		
JOB No:	700004594-WT-WT		
P.O. / AFE No.			
DIRECTIONAL COMPANY:	PATHFINDER		

WELL SITE INFORMATION

TOTAL MAGNETIC CORRECTION (TMC):			
On Wall Plat:	7.3	LWD Calculated:	7.28437
		Agreed Upon:	7.28
X =	722685.280000	Feet	Y = 388163.320000
			Feet
SITE LATITUDE:	32.065789 N	SITE LONGITUDE:	103.747904 W
GRID SYSTEM:	TRUE ☐ UTM ☐ LAMBERT ☒	ZONE:	NEW MEXICO EAST
PROPOSED DRIFT DIRECTION:	351.83		
KELLY BUSHING ELEVATION:	25		
ALTITUDE:	3241	Feet	WATER DEPTH: N/A
			Feet

TIE-IN SURVEY

MEASURED DEPTH:	881.84
DRIFT ANGLE:	2.2
DRIFT DIRECTION:	352.7
TRUE VERTICAL DEPTH:	881.67
VERTICAL SECTION:	5.24 6.25
RECTANGULAR COORDINATE (N / S) :	5.24
RECTANGULAR COORDINATE (E / W) :	-7.71
CLOSURE DISTANCE / DIRECTION:	
SURVEY CALCULATION METHOD:	AA ☐ MC ☒ RC ☐ BT ☐
SOURCE OF TIE-IN DATA (COMPANY):	PRO-SHOT
COPY OF TIE-IN SURVEY REPORT	☒ YES ☐ NO

WELL PLAN

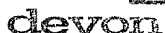
KICKOFF DEPTH:	8459	TOTAL DEPTH:	13684.7
KICKOFF ANGLE:	0	MAX ANGLE:	90

PES Engineers: _____

**Signature of both field engineers required if applicable

Directional Driller: _____

DATE: _____



SNAPPING 2 STATE 8H

WEST UNRESTRICTED

Directional Survey

District	County	Field Name	Project Group	State/Province			
PERMIAN BASIN	EDDY	AVALON SHALE	PB NEW MEXICO	NM			
Surface Legal Location	API/UWI	Latitude (DMS)	Longitude (DMS)	Ground Elev ..	KB - GL (ft)	Orig KB Elev (ft)	TH Elev (ft)
SEC2 T26S R31E	3001539165	32° 3' 56.839" N	103° 44' 52.159" ...	3,241.00	26.20	3,267.20	

Wellbores

Wellbore Name	Parent Wellbore	Property Number	Kick Off Depth (ftKB)	Vertical Section Direction (°)
OH	OH	036625-080		0.00

Deviation Survey	Definitive?	Proposed?	Proposed Deviation Survey
PRO-SHOT	No	No	

Deviation Survey

Date		Description			
12/8/2011		PRO-SHOT			
MD Tie In (ftKB)	TVD Tie In (ftKB)	Inclination Tie In (°)	Azimuth Tie In (°)	NSTie In (ft)	EW Tie In (ft)
0.00	0.00	0.00	0.00	0.00	0.00

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
12/8/2011	432.05	0.80	223.00	432.04	-2.21	-2.21	-2.06	0.19	MS	
12/8/2011	494.43	0.40	255.70	494.41	-2.58	-2.58	-2.57	0.82	MS	
12/8/2011	544.60	0.70	278.70	544.58	-2.58	-2.58	-3.04	0.73	MS	
12/8/2011	605.41	1.20	310.70	605.38	-2.10	-2.10	-3.89	1.17	MS	
12/8/2011	696.99	1.60	311.70	696.93	-0.63	-0.63	-5.57	0.44	MS	
12/8/2011	789.45	2.10	343.70	789.35	1.86	1.86	-7.01	1.22	MS	
12/8/2011	881.84	2.20	352.70	881.67	5.24	5.24	-7.71	0.38	MS	



PathFinder Energy Services, Inc. Magnetic & Grid Calculations

Devon Energy Production Company, LP
Snapping 2 State #8H
Eddy County, NM
Rig:HP 416

Tue Dec 06 15:57:18 2011

Coordinates

Latitude: 32.065789 N (32 deg. 3 min. 56.8390 sec.)
Longitude: 103.747904 W (-103 deg. 44 min. 52.4546 sec.)
Elevation: 3266.00 feet.
Calculation Date: Dec/06/2011

Magnetic Calculations

Model: IGRF2010
Dip Angle: 59.9975 degrees
Total Magnetic Field: 0.48455 gauss
Magnetic Declination: 7.596516 degrees
Horizontal Intensity: 0.242292 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.596516 Degr

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 722685.2800 feet
Y: 388163.3200 feet
True to Grid: (convergence) -0.310808 degrees
Magnetic to Grid: 7.285708 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 7.285708 Degr.

PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

DEVON ENERGY
SNAPPING STATE 2 #8H
WILDCAT; BONE SPRING

Sat Dec 10 20:54:05 2011

Coordinates

Latitude: 32.065789 N (32 deg. 3 min. 56.8390 sec.)
Longitude: 103.747904 W (-103 deg. 44 min. 52.4546 sec.)
Elevation: 3266.00 feet.
Calculation Date: Dec/10/2011

Magnetic Calculations

Model: IGRF2010
Dip Angle: 59.9972 degrees
Total Magnetic Field: 0.48454 gauss
Magnetic Declination: 7.595178 degrees
Horizontal Intensity: 0.242288 gauss

To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.595178 Degr

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 722685.2800 feet
Y: 388163.3200 feet
True to Grid: (convergence) -0.310808 degrees
Magnetic to Grid: 7.284370 degrees

To Convert a Magnetic Dir. to a GRID dir. Add 7.284370 Degr.