

Results of Directional Survey

API number:	30-025-40383		
OGRID:		Operator:	DEVON ENERGY PRODUCTION COMPANY, LP
		Property:	GREEN WAVE 20 FEDERAL # 1H

surface	ULSTR:	M	20	T 26S	R 34E
				330 FSL	330 FWL

BH Loc	ULSTR:	D	20	T 26S	R 34E
13931	MD	9487.3	TVD	328 FNL	319 FWL
				4952 FSL	

Top Perf/OH	ULSTR:	M	20	T 26S	R 34E
9570	MD	9421.6	TVD	608 FSL	504 FWL

Bot Perf/OH	ULSTR:	D	20	T 26S	R 34E
13873	MD	9489.0	TVD	386 FSL	321 FWL
				4894 FSL	

	MD	N/S	E/W	VD
	9567	275.60	174.40	9420.2
TOP PERFS/OH	9570	278.27	174.18	9421.55
	9599	304.10	172.10	9434.60
	13816	4506.60	-7.30	9489.90
BOT PERFS/OH	13873	4563.51	-8.95	9488.98
	13878	4568.50	-9.10	9488.90

NEXT TO LAST	13878	4568.50	-9.10	9488.90
LAST READING	13931	4621.50	-10.70	9487.30
TD	13931	4621.50	-10.70	9487.30

Surface Location	330	FS	330	FW
Projected BHL	4952	FS	319	FW
Location of				
Top Perfs/OH	608	FS	504	FW
Bottom Perfs/OH	4894	FS	321	FW

SUMMARY of Subsurface Locations

Surface Location	M-20-26S-34E	330	FS	330	FW	Vert. Depth
Top Perfs/OH	M-20-26S-34E	608	FS	504	FW	9421.55
Bottom Perfs/OH	D-20-26S-34E	4894	FS	321	FW	9488.98
Projected TD	D-20-26S-34E	4952	FS	319	FW	9487.30



Devon Energy, Inc.

Lea County (NAD83)

Green Wave 20 Federal

#1H

OH

Design: OH

PathfinderX & Y Report

25 April, 2012

SUR: M-20-26s-34e, 330/S & 330/W
BHL: D-20-26s-34e, 4952/S & 319/W
API # 30-025-40383

PATHFINDER®

A Schlumberger Company



Pathfinder
PathfinderX & Y Report

PATHFINDER
A Schlumberger Company

Company: Devon Energy, Inc.
Project: Lea County (NAD83)
Site: Green Wave 20 Federal
Well: #1H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Site Green Wave 20 Federal
TVD Reference: KB = 19 @ 3387.8usft (McVay 8)
MD Reference: KB = 19 @ 3387.8usft (McVay 8)
North Reference: Gnd
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Project: Lea County (NAD83)
Map System: US State Plane 1983
Geo Datum: North American Datum 1983
Map Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level

Site: Green Wave 20 Federal

Site Position:
From: Map
Position Uncertainty: 0.0 usft
Northing:
Easting:
Slot Radius:

372,952.690 usft
799,802.690 usft
13-3/16 "
Latitude: 32.023
Longitude: -103.499
Grid Convergence: 0.44 °

Well: #1H

Well Position
+N-S 0.0 usft
+E-W 0.0 usft
Position Uncertainty 0.0 usft
Northing:
Easting:
Wellhead Elevation:

372,952.690 usft
799,802.690 usft
usft
Latitude: 32.023
Longitude: -103.499
Ground Level: 3,368.8 usft

Wellbore: OH

Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2010	3/22/2012	7.44

Dip Angle (°)	Field Strength (nT)
59.99	48,426

Design: OH

Audit Notes:

Version: 1 0 Phase: ACTUAL Tie On Depth: 0 0

Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)
	0.0	0.0	0 0	359 51



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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Survey Program Date 4/25/2012

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	8,799.2	Gyro #1 (OH)	NS-GYRO-MS	North sensing gyrocompassing m/s
8,839.0	13,931.0	MWD #1 (OH)	MWD	MWD - Standard

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
0.0	0.00	0.00	0.0	-3,387.8	0.0	0.0	0.0	0.00	372,952.69	799,802.69
100.0	0.85	291.75	100.0	-3,287.8	0.3	-0.7	0.3	0.85	372,952.96	799,802.00
200.0	0.94	272.62	200.0	-3,187.8	0.6	-2.2	0.6	0.31	372,953.28	799,800.49
300.0	0.87	335.93	300.0	-3,087.8	1.3	-3.3	1.3	0.95	372,954.01	799,799.36
400.0	1.14	128.14	400.0	-2,987.8	1.4	-2.9	1.4	1.95	372,954.09	799,799.84
500.0	1.30	315.28	500.0	-2,887.8	1.6	-2.9	1.6	2.44	372,954.28	799,799.82
600.0	3.17	278.44	599.9	-2,787.9	2.8	-6.4	2.9	2.27	372,955.49	799,796.29
700.0	1.55	298.45	699.8	-2,688.0	3.9	-10.3	3.9	1.79	372,956.54	799,792.36
800.0	0.34	333.35	799.8	-2,588.0	4.8	-11.6	4.9	1.29	372,957.45	799,791.04
900.0	1.04	106.00	899.8	-2,488.0	4.8	-10.9	4.9	1.29	372,957.47	799,791.78
1,000.0	0.50	225.60	999.8	-2,388.0	4.2	-10.3	4.3	1.36	372,956.91	799,792.34
1,100.0	1.04	227.04	1,099.8	-2,288.0	3.3	-11.3	3.4	0.54	372,955.99	799,791.36
1,200.0	1.30	224.32	1,199.7	-2,188.1	1.9	-12.8	2.0	0.27	372,954.56	799,789.91
1,300.0	1.25	221.77	1,299.7	-2,088.1	0.2	-14.3	0.4	0.08	372,952.93	799,788.39
1,400.0	1.17	235.46	1,399.7	-1,988.1	-1.2	-15.9	-1.0	0.30	372,951.54	799,786.82
1,500.0	1.23	239.51	1,499.7	-1,888.1	-2.3	-17.6	-2.1	0.10	372,950.42	799,785.06
1,600.0	1.08	241.31	1,599.7	-1,788.1	-3.3	-19.4	-3.1	0.15	372,949.42	799,783.30
1,700.0	0.84	249.44	1,699.6	-1,688.2	-4.0	-20.9	-3.8	0.28	372,948.71	799,781.79
1,800.0	1.30	303.74	1,799.6	-1,588.2	-3.6	-22.5	-3.4	1.06	372,949.08	799,780.16
1,900.0	1.78	218.49	1,899.6	-1,488.2	-4.2	-24.4	-4.0	2.12	372,948.50	799,778.25
2,000.0	2.45	182.29	1,999.5	-1,388.3	-7.5	-25.5	-7.3	1.46	372,945.14	799,777.20



Pathfinder
PathfinderX & Y Report

PATHFINDER
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Site: Green Wave 20 Federal
Well: #1H
Wellbore: OH
Design: OH

Local Co-ordinate Reference:
TVD Reference: Site Green Wave 20 Federal
MD Reference: KB = 19 @ 3387.8usft (McVay 8)
North Reference: KB = 19 @ 3387.8usft (McVay 8)
Survey Calculation Method: Grad
Database: Minimum Curvature
EDM 5000.1 Single User Db

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
2,100.0	1.13	310.79	2,099.5	-1,288.3	-9.0	-26.3	-8.8	3.28	372,943.65	799,776.37
2,200.0	0.46	197.04	2,199.5	-1,188.3	-8.8	-27.2	-8.5	1.38	372,943.91	799,775.50
2,300.0	0.64	232.62	2,299.5	-1,088.3	-9.5	-27.7	-9.3	0.38	372,943.19	799,774.94
2,400.0	1.25	157.30	2,399.5	-988.3	-10.8	-27.8	-10.6	1.25	372,941.84	799,774.92
2,500.0	0.63	122.72	2,499.5	-888.3	-12.1	-26.9	-11.9	0.81	372,940.54	799,775.80
2,600.0	0.48	139.32	2,599.5	-788.3	-12.8	-26.2	-12.5	0.22	372,939.93	799,776.54
2,700.0	0.43	167.55	2,699.5	-688.3	-13.4	-25.8	-13.2	0.23	372,939.24	799,776.89
2,800.0	1.56	150.25	2,799.4	-588.4	-15.0	-25.0	-14.8	1.16	372,937.69	799,777.65
2,900.0	0.82	113.12	2,899.4	-488.4	-16.5	-23.7	-16.3	1.03	372,936.23	799,778.98
3,000.0	1.62	157.06	2,999.4	-388.4	-18.0	-22.5	-17.8	1.18	372,934.65	799,780.19
3,100.0	0.79	77.89	3,099.4	-288.4	-19.2	-21.3	-19.0	1.66	372,933.49	799,781.41
3,200.0	1.24	109.90	3,199.4	-188.4	-19.4	-19.6	-19.3	0.71	372,933.27	799,783.11
3,300.0	1.83	93.10	3,299.3	-88.5	-19.9	-17.0	-19.7	0.74	372,932.81	799,785.72
3,400.0	2.17	89.74	3,399.3	11.5	-20.0	-13.5	-19.8	0.36	372,932.73	799,789.21
3,500.0	2.14	102.53	3,499.2	111.4	-20.4	-9.8	-20.3	0.48	372,932.34	799,792.92
3,600.0	2.18	113.06	3,599.1	211.3	-21.5	-6.2	-21.4	0.40	372,931.19	799,796.49
3,700.0	2.08	106.69	3,699.1	311.3	-22.8	-2.7	-22.7	0.26	372,929.92	799,799.98
3,800.0	1.80	102.94	3,799.0	411.2	-23.6	0.6	-23.6	0.31	372,929.05	799,803.25
3,900.0	2.67	92.33	3,898.9	511.1	-24.1	4.4	-24.1	0.96	372,928.60	799,807.11
4,000.0	3.74	92.05	3,998.8	611.0	-24.3	10.0	-24.4	1.07	372,928.39	799,812.70
4,100.0	4.18	90.09	4,098.5	710.7	-24.4	16.9	-24.6	0.46	372,928.27	799,819.60
4,200.0	3.80	76.36	4,198.3	810.5	-23.6	23.8	-23.8	1.03	372,929.04	799,826.47
4,300.0	3.54	76.22	4,298.1	910.3	-22.1	30.0	-22.4	0.26	372,930.56	799,832.68
4,400.0	2.82	83.44	4,397.9	1,010.1	-21.1	35.4	-21.4	0.82	372,931.58	799,838.13
4,500.0	2.62	84.58	4,497.8	1,110.0	-20.6	40.2	-21.0	0.21	372,932.07	799,842.85
4,600.0	2.78	89.14	4,597.7	1,209.9	-20.4	44.9	-20.7	0.27	372,932.33	799,847.55
4,700.0	4.59	101.09	4,697.5	1,309.7	-21.1	51.2	-21.5	1.96	372,931.59	799,853.90



Pathfinder
PathfinderX & Y Report



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Project: Lea County (NAD83)
Site: Green Wave 20 Federal
Well: #1H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Site Green Wave 20 Federal
TVD Reference: KB = 19 @ 3387.8usft (McVay 8)
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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
4,800.0	3.97	92.11	4,797.2	1,409.4	-22.0	58.6	-22.5	0.91	372,930.70	799,861.28	
4,900.0	4.70	100.43	4,896.9	1,509.1	-22.9	66.1	-23.4	0.96	372,929.83	799,868.77	
5,000.0	5.23	106.37	4,996.6	1,608.8	-24.9	74.5	-25.5	0.74	372,927.80	799,877.17	
5,100.0	4.27	108.53	5,096.2	1,708.4	-27.4	82.4	-28.1	0.98	372,925.33	799,885.08	
5,200.0	3.45	102.70	5,196.0	1,808.2	-29.2	88.9	-30.0	0.91	372,923.49	799,891.54	
5,300.0	3.39	103.29	5,295.8	1,908.0	-30.5	94.7	-31.4	0.07	372,922.15	799,897.36	
5,400.0	2.69	97.14	5,395.7	2,007.9	-31.5	99.9	-32.4	0.77	372,921.18	799,902.56	
5,500.0	2.56	102.37	5,495.6	2,107.8	-32.3	104.4	-33.2	0.27	372,920.41	799,907.07	
5,600.0	2.33	98.09	5,595.5	2,207.7	-33.0	108.6	-34.0	0.29	372,919.64	799,911.26	
5,700.0	2.30	103.57	5,695.4	2,307.6	-33.8	112.5	-34.8	0.22	372,918.88	799,915.23	
5,800.0	1.90	102.86	5,795.3	2,407.5	-34.6	116.1	-35.6	0.40	372,918.05	799,918.79	
5,900.0	1.37	114.01	5,895.3	2,507.5	-35.5	118.8	-36.5	0.62	372,917.19	799,921.50	
6,000.0	2.54	130.58	5,995.2	2,607.4	-37.4	121.6	-38.5	1.29	372,915.26	799,924.28	
6,100.0	1.48	104.86	6,095.2	2,707.4	-39.2	124.5	-40.3	1.37	372,913.49	799,927.21	
6,200.0	1.25	110.81	6,195.1	2,807.3	-39.9	126.8	-41.0	0.27	372,912.77	799,929.48	
6,300.0	1.05	107.38	6,295.1	2,907.3	-40.6	128.7	-41.7	0.21	372,912.11	799,931.37	
6,400.0	1.20	102.63	6,395.1	3,007.3	-41.1	130.6	-42.2	0.18	372,911.61	799,933.27	
6,500.0	1.04	128.88	6,495.1	3,107.3	-41.9	132.3	-43.0	0.53	372,910.81	799,935.00	
6,600.0	1.46	128.68	6,595.1	3,207.3	-43.2	134.0	-44.4	0.42	372,909.44	799,936.70	
6,700.0	1.00	103.12	6,695.0	3,307.2	-44.2	135.9	-45.4	0.71	372,908.45	799,938.54	
6,800.0	1.13	105.47	6,795.0	3,407.2	-44.7	137.7	-45.9	0.14	372,907.99	799,940.34	
6,900.0	0.92	100.06	6,895.0	3,507.2	-45.1	139.4	-46.3	0.23	372,907.58	799,942.08	
7,000.0	1.00	106.45	6,995.0	3,607.2	-45.5	141.0	-46.7	0.13	372,907.20	799,943.71	
7,100.0	0.75	109.82	7,095.0	3,707.2	-46.0	142.5	-47.2	0.26	372,906.73	799,945.16	
7,200.0	0.96	122.25	7,195.0	3,807.2	-46.6	143.8	-47.9	0.28	372,906.06	799,946.49	
7,300.0	2.79	135.41	7,294.9	3,907.1	-48.8	146.2	-50.1	1.87	372,903.88	799,948.90	
7,400.0	0.81	126.68	7,394.8	4,007.0	-51.0	148.5	-52.2	1.99	372,901.72	799,951.18	



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7,500.0	0.85	129.79	7,494.8	4,107.0	-51.9	149.6	-53.1	0.06	372,900.83	799,952.32
7,600.0	0.98	136.73	7,594.8	4,207.0	-53.0	150.8	-54.3	0.17	372,899.73	799,953.47
7,700.0	1.24	126.69	7,694.8	4,307.0	-54.2	152.2	-55.5	0.32	372,898.46	799,954.93
7,800.0	1.90	141.84	7,794.8	4,407.0	-56.2	154.1	-57.5	0.77	372,896.51	799,956.82
7,900.0	1.44	144.04	7,894.7	4,506.9	-58.5	155.9	-59.8	0.46	372,894.19	799,958.58
8,000.0	1.68	145.82	7,994.7	4,606.9	-60.7	157.5	-62.1	0.24	372,891.96	799,960.14
8,100.0	2.39	79.10	8,094.6	4,706.8	-61.6	160.3	-62.9	2.32	372,891.14	799,963.01
8,200.0	1.45	151.96	8,194.6	4,806.8	-62.3	163.0	-63.7	2.40	372,890.42	799,965.66
8,300.0	1.46	141.02	8,294.6	4,906.8	-64.4	164.4	-65.8	0.28	372,888.31	799,967.05
8,400.0	1.68	144.45	8,394.5	5,006.7	-66.6	165.0	-68.0	0.24	372,886.13	799,968.71
8,500.0	1.76	146.17	8,494.5	5,106.7	-69.0	167.7	-70.5	0.10	372,883.66	799,970.41
8,600.0	1.89	150.36	8,594.4	5,206.6	-71.7	169.4	-73.2	0.19	372,880.95	799,972.08
8,700.0	2.04	151.97	8,694.4	5,306.6	-74.7	171.0	-76.2	0.16	372,877.95	799,973.73
8,799.2	1.65	150.61	8,793.5	5,405.7	-77.5	172.6	-79.0	0.39	372,875.14	799,975.27
8,839.0	1.67	153.87	8,833.3	5,445.5	-78.6	173.1	-80.1	0.24	372,874.12	799,975.80
8,934.0	4.48	16.84	8,928.2	5,540.4	-76.3	174.8	-77.8	6.12	372,875.43	799,977.49
KOP - 8934.0 'MD, 8928.2 'TVD, -76.3 'N, 174.8 'E										
8,966.0	5.80	19.13	8,960.1	5,572.3	-73.5	175.7	-75.0	4.17	372,879.15	799,978.38
8,997.0	9.32	13.42	8,990.8	5,603.0	-69.6	176.8	-71.1	11.60	372,883.08	799,979.48
9,029.0	13.19	10.87	9,022.2	5,634.4	-63.5	178.1	-65.0	12.19	372,889.18	799,980.77
9,061.0	18.38	8.32	9,053.0	5,665.2	-54.9	179.5	-56.5	16.36	372,897.77	799,982.19
9,093.0	22.51	5.86	9,083.0	5,695.2	-43.8	180.9	-45.4	13.18	372,908.86	799,983.54
9,124.0	25.50	4.72	9,111.3	5,723.5	-31.3	182.0	-32.8	9.76	372,921.41	799,984.70
9,156.0	28.58	3.22	9,139.8	5,752.0	-16.8	183.0	-18.3	9.86	372,935.93	799,985.70
9,187.0	31.66	2.34	9,166.6	5,778.8	-1.2	183.8	-2.8	10.04	372,951.46	799,986.44
9,219.0	34.21	0.85	9,193.4	5,805.6	16.2	184.2	14.6	8.36	372,968.85	799,986.92
9,250.0	36.76	358.83	9,218.7	5,830.9	34.2	184.2	32.6	9.05	372,986.84	799,986.86



Pathfinder
PathfinderX & Y Report



Company: Devon Energy, Inc
Project: Lea County (NAD83)
Site: Green Wave 20 Federal
Well: #1H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Site Green Wave 20 Federal
TVD Reference: KB = 19 @ 3387.8usft (McVay 8)
MD Reference: KB = 19 @ 3387.8usft (McVay 8)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
9,282.0	39.75	358.21	9,243.8	5,856.0	54.0	183.7	52.4	9.42	373,006.65	799,986.35
9,314.0	42.91	358.21	9,267.8	5,880.0	75.1	183.0	73.5	9.87	373,027.77	799,985.69
9,345.0	45.99	358.12	9,290.0	5,902.2	96.8	182.3	95.2	9.94	373,049.46	799,984.99
9,377.0	48.54	358.30	9,311.7	5,923.9	120.3	181.6	118.7	7.98	373,072.95	799,984.26
9,409.0	51.09	358.65	9,332.3	5,944.5	144.7	180.9	143.1	8.01	373,097.39	799,983.61
9,440.0	53.46	358.56	9,351.3	5,963.5	169.2	180.3	167.7	7.65	373,121.90	799,983.01
9,472.0	55.66	358.04	9,369.8	5,982.0	195.3	179.5	193.7	7.00	373,147.96	799,982.24
9,504.0	56.81	356.42	9,387.6	5,999.8	221.8	178.3	220.3	5.53	373,174.53	799,980.95
9,535.0	58.39	355.91	9,404.2	6,016.4	247.9	176.5	246.4	5.28	373,200.64	799,979.20
9,567.0	61.55	355.40	9,420.2	6,032.4	275.6	174.4	274.1	9.97	373,228.26	799,977.10
9,599.0	65.07	355.52	9,434.6	6,046.8	304.1	172.1	302.6	11.01	373,256.76	799,974.83
9,630.0	66.74	356.49	9,447.3	6,059.5	332.3	170.2	330.8	6.10	373,284.99	799,972.86
9,662.0	69.47	357.33	9,459.2	6,071.4	361.9	168.6	360.5	8.87	373,314.63	799,971.26
9,694.0	73.25	357.99	9,469.4	6,081.6	392.2	167.3	390.8	11.97	373,344.92	799,970.03
9,725.0	76.24	358.41	9,477.6	6,089.8	422.1	166.4	420.7	9.73	373,374.81	799,969.09
9,757.0	79.32	358.51	9,484.4	6,096.6	453.4	165.6	451.9	9.63	373,406.07	799,968.25
9,789.0	82.39	358.88	9,489.4	6,101.6	485.0	164.8	483.5	9.66	373,437.65	799,967.53
9,820.0	84.86	359.88	9,492.9	6,105.1	515.8	164.5	514.3	8.59	373,468.46	799,967.20
9,852.0	87.23	0.38	9,495.1	6,107.3	547.7	164.6	546.3	7.57	373,500.38	799,967.27
9,884.0	89.25	0.10	9,496.1	6,108.3	579.7	164.7	578.2	6.37	373,532.36	799,967.41
LP - 9884.0 'MD, 9496.1 'TVD, 579.7 'N, 164.7 'E										
9,979.0	90.57	0.78	9,496.2	6,108.4	674.7	165.4	673.2	1.56	373,627.35	799,968.13
10,074.0	91.01	359.15	9,494.9	6,107.1	769.7	165.4	768.2	1.78	373,722.34	799,968.08
10,169.0	90.40	357.79	9,493.7	6,105.9	864.6	162.9	863.2	1.57	373,817.30	799,965.54
10,264.0	90.66	357.78	9,492.9	6,105.1	959.5	159.2	958.1	0.27	373,912.22	799,961.87
10,359.0	91.98	358.34	9,490.7	6,102.9	1,054.5	156.0	1,053.1	1.51	374,007.14	799,958.65
10,451.0	91.80	358.23	9,487.6	6,099.8	1,146.4	153.2	1,145.0	0.23	374,099.05	799,955.90



Pathfinder
PathfinderX & Y Report

PATHFINDER
A Schlumberger Company

Company: Devon Energy, Inc
Project: Lea County (NAD83)
Site: Green Wave 20 Federal
Well: #1H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Site Green Wave 20 Federal
TVD Reference: KB = 19 @ 3387.8usft (McVay 8)
MD Reference: KB = 19 @ 3387.8usft (McVay 8)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
10,546.0	88.37	356.45	9,487.5	6,099.7	1,241.2	148.8	1,239.9	4.07	374,193.93	799,951.49
10,641.0	88.37	356.81	9,490.2	6,102.4	1,336.0	143.2	1,334.8	0.38	374,288.73	799,945.91
10,737.0	88.55	357.42	9,492.8	6,105.0	1,431.9	138.4	1,430.6	0.66	374,384.57	799,941.08
10,832.0	89.16	357.68	9,494.7	6,106.9	1,526.8	134.3	1,525.6	0.70	374,479.46	799,937.02
10,926.0	89.69	357.68	9,495.6	6,107.8	1,620.7	130.5	1,619.5	0.56	374,573.38	799,933.22
11,018.0	88.29	356.63	9,497.2	6,109.4	1,712.5	126.0	1,711.4	1.90	374,665.25	799,928.65
11,111.0	88.90	356.37	9,499.5	6,111.7	1,805.4	120.3	1,804.3	0.71	374,758.05	799,922.98
11,204.0	89.52	356.45	9,500.8	6,113.0	1,898.2	114.5	1,897.1	0.67	374,850.86	799,917.15
11,296.0	90.13	356.28	9,501.1	6,113.3	1,990.0	108.6	1,989.0	0.69	374,942.67	799,911.32
11,388.0	90.75	356.19	9,500.4	6,112.6	2,081.8	102.6	2,080.8	0.68	375,034.47	799,905.28
11,481.0	91.45	355.93	9,498.6	6,110.8	2,174.5	96.2	2,173.6	0.80	375,127.23	799,898.89
11,573.0	92.24	355.84	9,495.6	6,107.8	2,266.3	89.6	2,265.4	0.86	375,218.95	799,892.29
11,665.0	91.19	355.75	9,492.9	6,105.1	2,358.0	82.9	2,357.2	1.15	375,310.66	799,885.55
11,759.0	90.66	355.93	9,491.4	6,103.6	2,451.7	76.0	2,451.0	0.60	375,404.40	799,878.73
11,851.0	89.08	356.45	9,491.6	6,103.8	2,543.5	69.9	2,542.8	1.81	375,496.19	799,872.62
11,944.0	89.96	356.37	9,492.4	6,104.6	2,636.3	64.1	2,635.7	0.95	375,589.00	799,866.79
12,036.0	90.84	356.01	9,491.7	6,103.9	2,728.1	58.0	2,727.5	1.03	375,680.80	799,860.68
12,129.0	90.84	357.16	9,490.3	6,102.5	2,820.9	52.5	2,820.4	1.24	375,773.62	799,855.14
12,221.0	89.08	356.89	9,490.4	6,102.6	2,912.8	47.7	2,912.3	1.94	375,865.49	799,850.37
12,316.0	90.48	357.16	9,490.8	6,103.0	3,007.7	42.7	3,007.2	1.50	375,960.36	799,845.44
12,409.0	87.49	357.51	9,492.4	6,104.6	3,100.5	38.4	3,100.1	3.24	376,053.23	799,841.11
12,501.0	88.64	357.95	9,495.5	6,107.7	3,192.4	34.8	3,192.0	1.34	376,145.11	799,837.47
12,593.0	90.57	359.09	9,496.2	6,108.4	3,284.4	32.4	3,284.0	2.44	376,237.07	799,835.10
12,685.0	91.10	359.00	9,494.8	6,107.0	3,376.4	30.9	3,376.0	0.58	376,329.05	799,833.56
12,777.0	90.13	357.60	9,493.8	6,106.0	3,468.3	28.1	3,467.9	1.85	376,421.00	799,830.83
12,869.0	91.36	357.51	9,492.6	6,104.8	3,560.2	24.2	3,559.9	1.34	376,512.90	799,826.91
12,962.0	89.69	357.77	9,491.8	6,104.0	3,653.1	20.4	3,652.8	1.82	376,605.82	799,823.08



Pathfinder
PathfinderX & Y Report



Company: Devon Energy, Inc
Project: Lea County (NAD83)
Site: Green Wave 20 Federal
Well: #1H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Site Green Wave 20 Federal
TVD Reference: KB = 19 @ 3387.8usft (McVay 8)
MD Reference: KB = 19 @ 3387.8usft (McVay 8)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLag (°/100usft)	Northing (usft)	Easting (usft)
13,056.0	90.66	358.48	9,491.5	6,103.7	3,747.1	17.3	3,746.8	1.28	376,699.77	799,820.01
13,150.0	89.52	357.43	9,491.4	6,103.6	3,841.0	14.0	3,840.8	1.65	376,793.70	799,816.65
13,245.0	88.46	357.69	9,493.0	6,105.2	3,935.9	9.9	3,935.7	1.15	376,888.60	799,812.61
13,340.0	90.22	357.73	9,494.1	6,106.3	4,030.8	6.1	4,030.6	1.85	376,983.51	799,808.81
13,436.0	89.08	357.91	9,494.7	6,106.9	4,126.8	2.5	4,126.6	1.20	377,079.44	799,805.16
13,531.0	90.40	358.89	9,495.1	6,107.3	4,221.7	-0.2	4,221.6	1.73	377,174.40	799,802.51
13,625.0	91.98	358.53	9,493.2	6,105.4	4,315.7	-2.3	4,315.5	1.72	377,268.35	799,800.39
13,721.0	90.75	358.53	9,490.9	6,103.1	4,411.6	-4.8	4,411.5	1.28	377,364.29	799,797.93
13,816.0	90.40	358.40	9,489.9	6,102.1	4,506.6	-7.3	4,506.5	0.39	377,459.25	799,795.39
13,878.0	91.63	358.30	9,488.9	6,101.1	4,568.5	-9.1	4,568.4	1.99	377,521.22	799,793.60
13,931.0	91.63	358.30	9,487.3	6,099.5	4,621.5	-10.7	4,621.4	0.00	377,574.17	799,792.03
BHL - 13931.0 'MD, 9487.3 'TVD, 4621.5 'N, -10.7 'E										

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
8,934.0	8,928.2	-76.3	174.8	KOP - 8934.0 'MD, 8928.2 'TVD, -76.3 'N, 174.8 'E
9,884.0	9,496.1	579.7	164.7	LP - 9884.0 'MD, 9496.1 'TVD, 579.7 'N, 164.7 'E
13,931.0	9,487.3	4,621.5	-10.7	BHL - 13931.0 'MD, 9487.3 'TVD, 4621.5 'N, -10.7 'E

Checked By: _____

Approved By: _____

Date: _____

devon

PROJECT DETAILS, Lea County (NAD83)
 Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: New Mexico Eastern Zone
 System Datum: Mean Sea Level
 Local North: Grid



Azimuths to Grid North
 True North: -0.44°
 Magnetic North: 7.00°

Magnetic Field
 Strength: 48426 OerT
 Dip Angle: 59.99°
 Date: 3/22/2012
 Model: IGRF2010

PATHFINDER®

A Schlumberger Company

West(-)/East(+) (200 usft/in)

Project: Lea County (NAD83)
 Site: Green Wave 20 Federal
 Well: #1H
 Wellbore: OH
 Plan: Post Gyro Plan #4 (#1H/OH)

WELL DETAILS, #1H

Ground Elevation: 3368.8
 RKB Elevation: KB = 19 @ 3387.8usft (McVay 8)
 Rig Name: M-Vay 8

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Spot
0.0	0.0	372952.690	799802.660	32.023	-103.499	

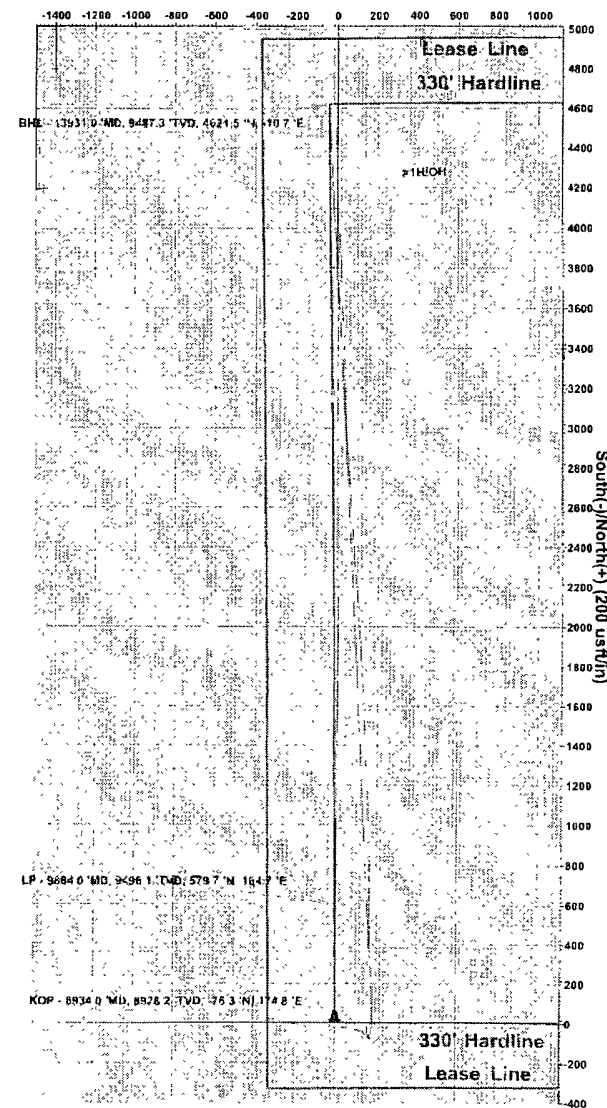
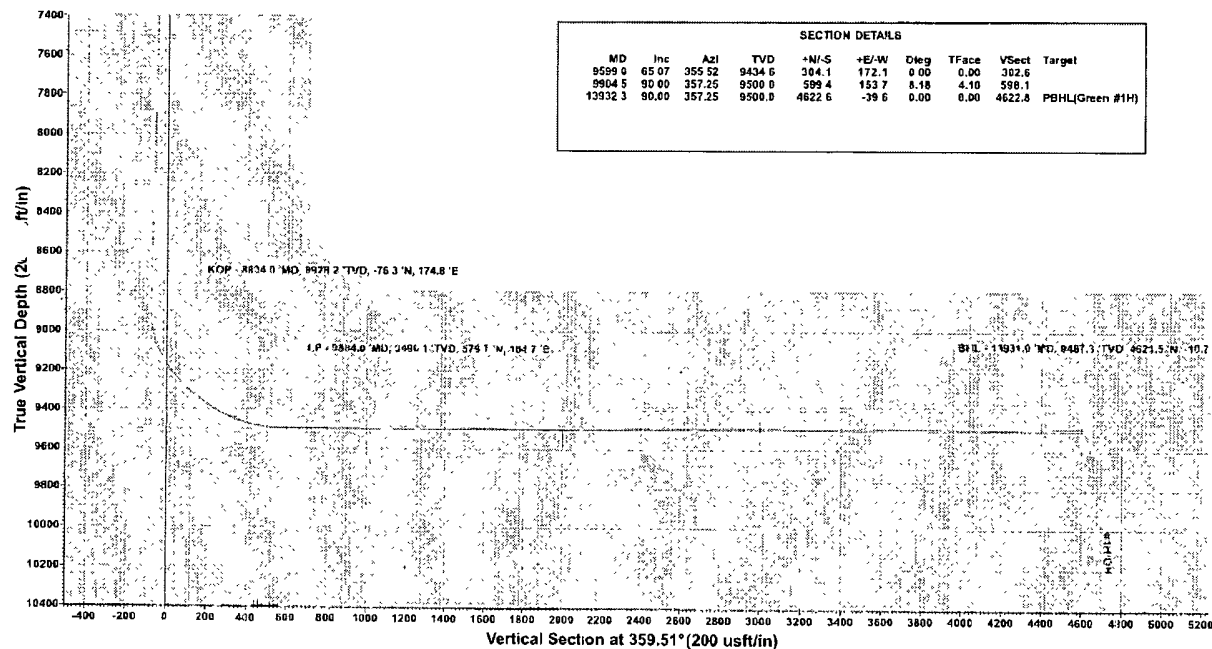
EOW

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PBHL(Green #1H)	9300.0	4622.6	-39.6	377575.310	799763.090	Point

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSeet	Target
9599.0	65.07	355.52	9434.6	304.1	172.1	0.00	0.00	302.6	
9904.5	90.00	357.25	9500.0	599.4	153.7	8.18	4.10	598.1	
13932.3	90.00	357.25	9500.0	4622.6	-39.6	0.00	0.00	4622.6	PBHL(Green #1H)



Plan: Post Gyro Plan #4 (#1H/OH)

Created By: Sam Bille Date: 13 23 April 25 2012

Checked: _____ Date: _____

APPROVED BY:

 Date: _____

Pathfinder

DEVON ENERGY
20 N. BROADWAY
OKLAHOMA CITY, OK
73102-1000



May 11, 2012

Devon Energy
20 N. Broadway
Oklahoma City, OK

RE: Devon Energy
Green Wave 20 Federal #1H
API: 30-025-40383
Lea County, NM
RIG: MCVAY 8
FIELD: Bradley, Delaware
PES FILE NO.: 12MLD0121

To whom it may concern:

We hereby certify that the enclosed Original Field Survey Data contained in this report represents to the best of our knowledge, a true and accurate survey of the well at the time the survey was run.

DIRECTIONAL SURVEY DATA

- 1 – Original survey report
- 2 – Survey report copies

We appreciate the opportunity to work with you and we look forward to your business support. If you have any questions, I can be reached at (432) 687-1647

Sincerely,

A handwritten signature in black ink, appearing to read "Juan Alcocer".

JUAN ALCOCER
M/LWD Service Coordinator
PathFinder Energy Services

ML:sh



A Schlumberger Company

DIRECTIONAL SURVEY REPORT

DEVON ENERGY

GREEN WAVE 20 FEDERAL #1H

LEA COUNTY, NEW MEXICO

SUR: M-20-26s-34e, 330/S & 330/W
BHL: D-20-26s-34e, 4952/S & 319/W
API # 30-025-40383

PREPARED BY: JUAN ALCOCER

Pathfinder

6213 WCR '12
Midland, Texas 79705
Tel: (432)687-1547
Fax: (432)687-1544



DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) SEAN MOORE
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 9-APR-12 TO 22-APR-12
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: LEA COUNTY
7. TYPE OF SURVEY(S) PERFORMED: GAMMA-RAY
8. COMPLETE IDENTIFICATION OF WELL:

DEVON ENERGY
GREEN WAVE 20 FEDERAL #1H
LEA COUNTY, NM
RIG: MCVAY 8

9. SURVEY CERTIFIED FROM: 8,839 TO 13,878 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE
DISPLACED AT 4,621.53 FEET ON A BEARING OF 359.87 DEGREES FROM THE
CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 13,931 FEET,
ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.



JUAN ALCOCER
M/LWD SERVICE COORDINATOR

PathFinder Energy Services, Inc.

BHL Report

Page 01/01
Tie-in Date: 04/08/2012
Date Completed: 04/22/2012

DEVON ENERGY CORP.
GREEN WAVE 20 FEDERAL #1H / API # 30-025-40383
LEA COUNTY, NM
Rig:MCVAY 8
PathFinder Office Supervisor: JUAN ALCOCER
PathFinder Field Engineers:SEAN MOORE
MURAD ALIYEV
PRITHWISH DAS

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.1.21.3055 N LON:103.29.57.6638 W
GRID Reference:NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 799802.6900 Y: 372952.6900
North Aligned To:GRID NORTH
Total Magnetic Correction: 7.00° EAST TO GRID
Vertical Section Plane: 359.51
Survey Vert. Reference: 19.00' Kelly Bushing To Ground
Altitude:3368.80' Ground To MSL

Measured Depth	13931.00	(feet)
Inclination	91.63	(deg)
Azimuth	358.30	(deg)
True Vertical Depth	9486.53	(feet)
Vertical Section	4621.44	(feet)
Survey X cord	799791.98	(feet)
Survey Y cord	377214.19	(feet)
Survey Lat	32.03429868 N	(deg)
Survey Lon	103.49927947 W	(deg)
Rectangular Corr. N/S	4621.51 N	(feet)
Rectangular Corr. E/W	10.69 W	(feet)
Closure Distance	4621.53	(feet)
Direction of Closure	359.87	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

Page 01/06
Tie-in Date: 04/08/2012
Date Completed: 04/22/2012

DEVON ENERGY CORP.
GREEN WAVE 20 FEDERAL #1H / API # 30-025-40383
LEA COUNTY, NM
Rig: MCVAY 8

PathFinder Office Supervisor: JUAN ALCOCER
PathFinder Field Engineers: SEAN MOORE
MURAD ALIYEV
PRITHWISH DAS

AARON FOURNIER

Survey Calculations by RX5 V6.04A using Minimum Curvature

Survey Horiz. Reference: WELLHEAD
Ref Coordinates: LAT: 32.1.21.3055 N LON: 103.29.57.6638 W
GRID Reference: NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 799802.6900 Y: 372952.6900
North Aligned To: GRID NORTH
Total Magnetic Correction: 7.00° EAST TO GRID
Vertical Section Plane: 359.51
Survey Vert. Reference: 19.00' Kelly Bushing To Ground
Altitude: 3368.80' Ground To MSL

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 GYRODATA GYRO SURVEYS										
100.00	0.85	291.75	99.18	100.00	0.31	0.30 N	0.72 W	0.78@	293.04	0.85
200.00	0.94	272.62	199.17	100.00	0.64	0.62 N	2.23 W	2.31@	285.50	0.31
300.00	0.87	335.93	299.16	100.00	1.38	1.35 N	3.35 W	3.62@	291.89	0.95
400.00	1.14	128.14	399.15	100.00	1.45	1.43 N	2.88 W	3.22@	296.34	1.95
500.00	1.30	315.28	499.14	100.00	1.64	1.62 N	2.90 W	3.32@	299.19	2.43
600.00	3.17	278.44	599.07	100.00	2.89	2.83 N	6.43 W	7.03@	293.76	2.27
700.00	1.55	298.45	698.98	100.00	3.97	3.88 N	10.36 W	11.06@	290.54	1.79
800.00	0.34	333.35	798.97	100.00	4.89	4.79 N	11.68 W	12.62@	292.30	1.29
900.00	1.04	106.00	898.96	100.00	4.90	4.81 N	10.94 W	11.95@	293.72	1.29
1000.00	0.50	225.60	998.95	100.00	4.34	4.25 N	10.38 W	11.21@	292.27	1.36
1100.00	1.04	227.04	1098.95	100.00	3.42	3.33 N	11.35 W	11.83@	286.33	0.54
1200.00	1.30	224.32	1198.92	100.00	2.01	1.90 N	12.81 W	12.95@	278.42	0.27
1300.00	1.25	221.77	1298.90	100.00	0.39	0.27 N	14.33 W	14.33@	271.08	0.08
1400.00	1.17	235.46	1398.88	100.00	-0.99	1.12 S	15.90 W	15.94@	265.96	0.30
1500.00	1.23	239.51	1498.86	100.00	-2.09	2.24 S	17.66 W	17.81@	262.76	0.10
1600.00	1.08	241.31	1598.84	100.00	-3.08	3.24 S	19.41 W	19.68@	260.52	0.15
1700.00	0.84	249.44	1698.82	100.00	-3.77	3.95 S	20.93 W	21.30@	259.31	0.28
1800.00	1.30	303.74	1798.81	100.00	-3.39	3.58 S	22.56 W	22.84@	260.98	1.06
1900.00	1.78	218.49	1898.78	100.00	-3.96	4.16 S	24.47 W	24.82@	260.34	2.11
2000.00	2.45	182.29	1998.72	100.00	-7.30	7.52 S	25.52 W	26.60@	253.59	1.46
2100.00	1.13	310.79	2098.69	100.00	-8.78	9.01 S	26.35 W	27.85@	251.13	3.27
2200.00	0.46	197.04	2198.68	100.00	-8.51	8.75 S	27.22 W	28.59@	252.18	1.38
2300.00	0.64	232.62	2298.68	100.00	-9.23	9.47 S	27.78 W	29.35@	251.17	0.38
2400.00	1.25	157.30	2398.67	100.00	-10.58	10.82 S	27.80 W	29.83@	248.74	1.25
2500.00	0.63	122.72	2498.65	100.00	-11.89	12.12 S	26.92 W	29.52@	245.76	0.81

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY CORP.
GREEN WAVE 20 FEDERAL #1H / API # 30-025-40383
LEA COUNTY, NM
RIG:MCVAY 8

Page 02/06

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)
2600.00	0.48	139.32	2598.65	100.00	-12.51	12.73 S	26.18 W	29.11@	244.06	0.22
2700.00	0.43	167.55	2698.64	100.00	-13.20	13.42 S	25.83 W	29.11@	242.55	0.23
2800.00	1.56	150.25	2798.63	100.00	-14.75	14.97 S	25.07 W	29.20@	239.16	1.16
2900.00	0.82	113.12	2898.61	100.00	-16.23	16.43 S	23.74 W	28.87@	235.31	1.03
3000.00	1.62	157.06	2998.59	100.00	-17.82	18.01 S	22.53 W	28.84@	231.36	1.18
3100.00	0.79	77.89	3098.57	100.00	-18.99	19.17 S	21.30 W	28.66@	228.02	1.66
3200.00	1.24	109.90	3198.55	100.00	-19.22	19.39 S	19.61 W	27.58@	225.32	0.71
3300.00	1.83	93.10	3298.52	100.00	-19.70	19.85 S	17.00 W	26.13@	220.58	0.74
3400.00	2.17	89.74	3398.46	100.00	-19.81	19.93 S	13.51 W	24.08@	214.14	0.36
3500.00	2.14	102.53	3498.39	100.00	-20.24	20.32 S	9.80 W	22.56@	205.74	0.48
3600.00	2.18	113.06	3598.32	100.00	-21.42	21.47 S	6.22 W	22.36@	196.16	0.40
3700.00	2.08	106.69	3698.25	100.00	-22.71	22.74 S	2.74 W	22.90@	186.86	0.26
3800.00	1.80	102.94	3798.19	100.00	-23.61	23.61 S	0.53 E	23.62@	178.71	0.31
3900.00	2.67	92.33	3898.11	100.00	-24.09	24.06 S	4.39 E	24.46@	169.66	0.96
4000.00	3.74	92.05	3997.95	100.00	-24.35	24.27 S	9.98 E	26.24@	157.65	1.07
4100.00	4.18	90.09	4097.71	100.00	-24.53	24.39 S	16.88 E	29.66@	145.31	0.46
4200.00	3.80	76.36	4197.48	100.00	-23.82	23.62 S	23.75 E	33.49@	134.84	1.03
4300.00	3.54	76.22	4297.27	100.00	-22.35	22.10 S	29.97 E	37.23@	126.41	0.26
4400.00	2.82	83.44	4397.12	100.00	-21.38	21.08 S	35.41 E	41.21@	120.77	0.82
4500.00	2.62	84.58	4497.00	100.00	-20.93	20.59 S	40.13 E	45.10@	117.16	0.21
4600.00	2.78	89.14	4596.89	100.00	-20.72	20.33 S	44.83 E	49.22@	114.40	0.27
4700.00	4.59	101.09	4696.68	100.00	-21.50	21.07 S	51.18 E	55.35@	112.37	1.96
4800.00	3.97	92.11	4796.40	100.00	-22.46	21.96 S	58.57 E	62.55@	110.56	0.91
4900.00	4.70	100.43	4896.12	100.00	-23.40	22.83 S	66.05 E	69.89@	109.07	0.96
5000.00	5.23	106.37	4995.74	100.00	-25.49	24.86 S	74.46 E	78.50@	108.46	0.74
5100.00	4.27	108.53	5095.40	100.00	-28.03	27.33 S	82.36 E	86.77@	108.36	0.98
5200.00	3.45	102.70	5195.17	100.00	-29.93	29.17 S	88.82 E	93.49@	108.18	0.91
5300.00	3.39	103.29	5294.99	100.00	-31.32	30.51 S	94.64 E	99.43@	107.87	0.07

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY CORP.
GREEN WAVE 20 FEDERAL #1H / API # 30-025-40383
LEA COUNTY, NM
RIG:MCVAY 8

Page 03/06

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)
5400.00	2.69	97.14	5394.85	100.00	-32.34	31.48 S	99.84 E	104.69@	107.50	0.77
5500.00	2.56	102.37	5494.75	100.00	-33.15	32.25 S	104.35 E	109.22@	107.18	0.27
5600.00	2.33	98.09	5594.66	100.00	-33.95	33.02 S	108.55 E	113.46@	106.92	0.29
5700.00	2.30	103.57	5694.58	100.00	-34.74	33.78 S	112.51 E	117.47@	106.71	0.22
5800.00	1.90	102.86	5794.51	100.00	-35.61	34.62 S	116.08 E	121.13@	106.61	0.40
5900.00	1.37	114.01	5894.47	100.00	-36.49	35.47 S	118.79 E	123.97@	106.63	0.62
6000.00	2.54	130.58	5994.41	100.00	-38.44	37.40 S	121.56 E	127.18@	107.10	1.29
6100.00	1.48	104.86	6094.35	100.00	-40.23	39.17 S	124.49 E	130.51@	107.47	1.37
6200.00	1.25	110.81	6194.32	100.00	-40.97	39.89 S	126.76 E	132.89@	107.47	0.27
6300.00	1.05	107.38	6294.30	100.00	-41.65	40.55 S	128.65 E	134.89@	107.49	0.21
6400.00	1.20	102.63	6394.28	100.00	-42.17	41.05 S	130.55 E	136.85@	107.46	0.18
6500.00	1.04	128.88	6494.26	100.00	-42.98	41.85 S	132.28 E	138.74@	107.56	0.53
6600.00	1.46	128.68	6594.24	100.00	-44.36	43.22 S	133.98 E	140.78@	107.88	0.42
6700.00	1.00	103.12	6694.21	100.00	-45.37	44.21 S	135.82 E	142.84@	108.03	0.71
6800.00	1.13	105.47	6794.20	100.00	-45.85	44.67 S	137.62 E	144.69@	107.98	0.14
6900.00	0.92	100.06	6894.18	100.00	-46.27	45.08 S	139.36 E	146.47@	107.92	0.23
7000.00	1.00	106.45	6994.17	100.00	-46.67	45.46 S	140.99 E	148.14@	107.87	0.13
7100.00	0.75	109.82	7094.15	100.00	-47.15	45.93 S	142.44 E	149.67@	107.87	0.25
7200.00	0.96	122.25	7194.14	100.00	-47.83	46.60 S	143.77 E	151.13@	107.96	0.28
7300.00	2.79	135.41	7294.09	100.00	-50.03	48.78 S	146.19 E	154.11@	108.45	1.87
7400.00	0.81	126.68	7394.03	100.00	-52.21	50.94 S	148.46 E	156.96@	108.94	1.99
7500.00	0.85	129.79	7494.02	100.00	-53.11	51.84 S	149.60 E	158.32@	109.11	0.06
7600.00	0.98	136.73	7594.01	100.00	-54.22	52.93 S	150.75 E	159.78@	109.35	0.17
7700.00	1.24	126.69	7693.99	100.00	-55.50	54.20 S	152.21 E	161.57@	109.60	0.32
7800.00	1.90	141.84	7793.95	100.00	-57.47	56.15 S	154.10 E	164.01@	110.02	0.77
7900.00	1.44	144.04	7893.91	100.00	-59.80	58.47 S	155.86 E	166.47@	110.56	0.46
8000.00	1.68	145.82	7993.87	100.00	-62.05	60.70 S	157.42 E	168.72@	111.09	0.24
8100.00	2.39	79.10	8093.82	100.00	-62.89	61.52 S	160.29 E	171.69@	111.00	2.32

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY CORP.
GREEN WAVE 20 FEDERAL #1H / API # 30-025-40383
LEA COUNTY, NM
RIG:MCVAY 8

Page 04/06

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)
8200.00	1.45	151.96	8193.78	100.00	-63.63	62.24 S	162.94 E	174.42@	110.91	2.40
8300.00	1.46	141.02	8293.74	100.00	-65.75	64.35 S	164.33 E	176.48@	111.38	0.28
8400.00	1.68	144.45	8393.71	100.00	-67.95	66.53 S	165.99 E	178.82@	111.84	0.24
8500.00	1.76	146.17	8493.66	100.00	-70.43	69.00 S	167.69 E	181.34@	112.37	0.10
8600.00	1.89	150.36	8593.61	100.00	-73.16	71.71 S	169.36 E	183.92@	112.95	0.19
8700.00	2.04	151.97	8693.55	100.00	-76.17	74.71 S	171.02 E	186.63@	113.60	0.16
** TIED INTO GYRODATA GYRO SURVEY AT 8800' MD.										
8800.00	1.65	150.60	8793.50	100.00	-79.01	77.54 S	172.56 E	189.18@	114.20	0.39
THE FOLLOWING ARE PATHFINDER MWD SURVEYS										
8839.00	1.67	153.87	8832.48	39.00	-80.02	78.54 S	173.09 E	190.07@	114.41	0.25
8934.00	4.48	16.84	8927.40	95.00	-77.72	76.23 S	174.77 E	190.67@	113.57	6.12
8966.00	5.80	19.13	8959.27	32.00	-75.00	73.51 S	175.66 E	190.42@	112.71	4.17
8997.00	9.32	13.42	8990.00	31.00	-71.09	69.58 S	176.76 E	189.96@	111.49	11.60
9029.00	13.19	10.87	9021.37	32.00	-64.99	63.47 S	178.05 E	189.03@	109.62	12.19
9061.00	18.38	8.32	9052.16	32.00	-56.42	54.89 S	179.47 E	187.68@	107.01	16.36
9093.00	22.51	5.86	9082.14	32.00	-45.35	43.80 S	180.83 E	186.06@	103.62	13.18
9124.00	25.50	4.72	9110.45	31.00	-32.80	31.24 S	181.98 E	184.64@	99.74	9.76
9156.00	28.58	3.22	9138.95	32.00	-18.30	16.73 S	182.98 E	183.74@	95.23	9.86
9187.00	31.66	2.34	9165.76	31.00	-2.77	1.20 S	183.73 E	183.73@	90.37	10.04
9219.00	34.21	0.85	9192.62	32.00	14.62	16.19 N	184.20 E	184.91@	84.98	8.36
9250.00	36.76	358.83	9217.86	31.00	32.61	34.18 N	184.14 E	187.29@	79.48	9.05
9282.00	39.75	358.21	9242.98	32.00	52.41	53.99 N	183.63 E	191.40@	73.62	9.42
9314.00	42.91	358.21	9267.01	32.00	73.54	75.11 N	182.97 E	197.78@	67.68	9.88
9345.00	45.99	358.12	9289.14	31.00	95.24	96.80 N	182.27 E	206.38@	62.03	9.94
9377.00	48.54	358.30	9310.85	32.00	118.74	120.29 N	181.54 E	217.78@	56.47	7.98
9409.00	51.09	358.65	9331.50	32.00	143.18	144.73 N	180.89 E	231.66@	51.34	8.01
9440.00	53.46	358.56	9350.46	31.00	167.69	169.24 N	180.29 E	247.28@	46.81	7.65
9472.00	55.66	358.04	9369.02	32.00	193.75	195.30 N	179.52 E	265.27@	42.59	7.00

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY CORP.
GREEN WAVE 20 FEDERAL #1H / API # 30-025-40383
LEA COUNTY, NM
RIG:MCVAY 8

Page 05/06

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
9504.00	56.81	356.42	9386.80	32.00	220.33	221.87 N	178.23 E	284.59@	38.78	5.53
9535.00	58.39	355.91	9403.41	31.00	246.46	247.98 N	176.48 E	304.37@	35.44	5.28
9567.00	61.55	355.40	9419.43	32.00	274.10	275.60 N	174.38 E	326.13@	32.32	9.97
9599.00	65.07	355.52	9433.80	32.00	302.61	304.10 N	172.12 E	349.43@	29.51	11.01
9630.00	66.74	356.49	9446.45	31.00	330.86	332.33 N	170.15 E	373.35@	27.11	6.10
9662.00	69.47	357.33	9458.39	32.00	360.52	361.97 N	168.55 E	399.29@	24.97	8.87
9694.00	73.25	357.99	9468.61	32.00	390.82	392.26 N	167.31 E	426.45@	23.10	11.97
9725.00	76.24	358.41	9476.77	31.00	420.71	422.15 N	166.37 E	453.75@	21.51	9.73
9757.00	79.32	358.51	9483.54	32.00	451.98	453.41 N	165.53 E	482.68@	20.06	9.63
9789.00	82.39	358.88	9488.63	32.00	483.57	484.99 N	164.81 E	512.23@	18.77	9.66
9820.00	84.86	359.88	9492.07	31.00	514.37	515.80 N	164.48 E	541.39@	17.69	8.59
9852.00	87.23	0.38	9494.27	32.00	546.29	547.72 N	164.55 E	571.90@	16.72	7.57
9884.00	89.25	0.10	9495.26	32.00	578.27	579.70 N	164.69 E	602.64@	15.86	6.37
9979.00	90.57	0.78	9495.41	95.00	673.26	674.70 N	165.42 E	694.68@	13.78	1.56
10074.00	91.01	359.15	9494.10	95.00	768.24	769.68 N	165.36 E	787.25@	12.13	1.78
10169.00	90.40	357.79	9492.93	95.00	863.22	864.64 N	162.82 E	879.84@	10.66	1.57
10264.00	90.66	357.78	9492.05	95.00	958.17	959.56 N	159.15 E	972.67@	9.42	0.27
10359.00	91.98	358.34	9489.86	95.00	1053.11	1054.48 N	155.94 E	1065.95@	8.41	1.51
10451.00	91.80	358.23	9486.83	92.00	1145.04	1146.39 N	153.18 E	1156.58@	7.61	0.23
10546.00	88.37	356.45	9486.69	95.00	1239.95	1241.27 N	148.78 E	1250.15@	6.83	4.07
10641.00	88.37	356.81	9489.39	95.00	1334.79	1336.07 N	143.19 E	1343.72@	6.12	0.38
10737.00	88.55	357.42	9491.97	96.00	1430.68	1431.91 N	138.36 E	1438.58@	5.52	0.66
10832.00	89.16	357.68	9493.87	95.00	1525.60	1526.80 N	134.30 E	1532.70@	5.03	0.70
10926.00	89.69	357.68	9494.81	94.00	1619.55	1620.72 N	130.50 E	1625.97@	4.60	0.56
11018.00	88.29	356.63	9496.43	92.00	1711.45	1712.59 N	125.93 E	1717.22@	4.21	1.90
11111.00	88.90	356.37	9498.71	93.00	1804.30	1805.39 N	120.26 E	1809.39@	3.81	0.71
11204.00	89.52	356.45	9499.99	93.00	1897.15	1898.20 N	114.43 E	1901.64@	3.45	0.67
11296.00	90.13	356.28	9500.28	92.00	1989.01	1990.01 N	108.60 E	1992.97@	3.12	0.69

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Survey Report

DEVON ENERGY CORP.
GREEN WAVE 20 FEDERAL #1H / API # 30-025-40383
LEA COUNTY, NM
RIG:MCVAY 8

Page 06/06

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)
11388.00	90.75	356.19	9499.57	92.00	2080.86	2081.81 N	102.56 E	2084.33@	2.82	0.68
11481.00	91.45	355.93	9497.78	93.00	2173.67	2174.57 N	96.17 E	2176.70@	2.53	0.80
11573.00	92.24	355.84	9494.82	92.00	2265.44	2266.29 N	89.57 E	2268.06@	2.26	0.86
11665.00	91.19	355.75	9492.07	92.00	2357.20	2358.00 N	82.83 E	2359.45@	2.01	1.15
11759.00	90.66	355.93	9490.55	94.00	2451.00	2451.74 N	76.01 E	2452.91@	1.78	0.60
11851.00	89.08	356.45	9490.76	92.00	2542.84	2543.53 N	69.90 E	2544.49@	1.57	1.81
11944.00	89.96	356.37	9491.54	93.00	2635.70	2636.34 N	64.08 E	2637.12@	1.39	0.95
12036.00	90.84	356.01	9490.90	92.00	2727.54	2728.14 N	57.96 E	2728.75@	1.22	1.03
12129.00	90.84	357.16	9489.53	93.00	2820.41	2820.96 N	52.42 E	2821.45@	1.06	1.24
12221.00	89.08	356.89	9489.60	92.00	2912.32	2912.83 N	47.65 E	2913.22@	0.94	1.93
12316.00	90.48	357.16	9489.96	95.00	3007.23	3007.70 N	42.72 E	3008.00@	0.81	1.50
12409.00	87.49	357.51	9491.61	93.00	3100.13	3100.58 N	38.40 E	3100.81@	0.71	3.24
12501.00	88.64	357.95	9494.71	92.00	3192.03	3192.45 N	34.75 E	3192.64@	0.62	1.34
12593.00	90.57	359.09	9495.35	92.00	3284.01	3284.41 N	32.38 E	3284.57@	0.56	2.44
12685.00	91.10	359.00	9494.01	92.00	3376.00	3376.39 N	30.85 E	3376.53@	0.52	0.59
12777.00	90.13	357.60	9493.02	92.00	3467.97	3468.34 N	28.12 E	3468.45@	0.46	1.85
12869.00	91.36	357.51	9491.82	92.00	3559.91	3560.24 N	24.19 E	3560.33@	0.39	1.34
12962.00	89.69	357.77	9490.97	93.00	3652.85	3653.16 N	20.36 E	3653.22@	0.32	1.82
13056.00	90.66	358.48	9490.69	94.00	3746.82	3747.11 N	17.29 E	3747.15@	0.26	1.28
13150.00	89.52	357.43	9490.54	94.00	3840.78	3841.04 N	13.93 E	3841.07@	0.21	1.65
13245.00	88.46	357.69	9492.21	95.00	3935.71	3935.94 N	9.89 E	3935.95@	0.14	1.15
13340.00	90.22	357.73	9493.31	95.00	4030.66	4030.86 N	6.09 E	4030.86@	0.09	1.85
13436.00	89.08	357.91	9493.89	96.00	4126.61	4126.78 N	2.44 E	4126.78@	0.03	1.20
13531.00	90.40	358.89	9494.32	95.00	4221.59	4221.74 N	0.21 W	4221.74@	360.00	1.73
13625.00	91.98	358.53	9492.37	94.00	4315.56	4315.69 N	2.33 W	4315.69@	359.97	1.72
13721.00	90.75	358.53	9490.08	96.00	4411.51	4411.63 N	4.79 W	4411.64@	359.94	1.28
13816.00	90.40	358.40	9489.13	95.00	4506.49	4506.59 N	7.33 W	4506.60@	359.91	0.39
13878.00	91.63	358.30	9488.03	62.00	4568.47	4568.56 N	9.12 W	4568.57@	359.89	1.99

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY CORP.
GREEN WAVE 20 FEDERAL #1H / API # 30-025-40383
LEA COUNTY, NM
RIG:MCVAY 8

Page 07/06

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)
STRAIGHT-LINE PROJECTION TO BIT DEPTH @ 13931' MD.								
13931.00	91.63	358.30	9486.53	53.00	4621.44	4621.51 N 10.69 W	4621.53@ 359.87	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.