

30-015-38312



A Schlumberger Company

DIRECTIONAL SURVEY REPORT

DEVON ENERGY

SERENE SISTERS 25 FEDERAL #4H

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) JUAN ALCOCER
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 10-01-11 TO 10-09-11
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
SERENE SISTERS 25 FEDERAL #44
EDDY COUNTY, NM
RIG: H&P 300
9. SURVEY CERTIFIED FROM: 7493 TO 13163 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE
DISPLACED AT 4944.03 FEET ON A BEARING OF 343.65 DEGREES FROM THE
CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 13233.00
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: 10/01/2011
Date Completed: 10/10/2011

DEVON ENERGY CORPORATION
SERENE SISTERS 25 FEDERAL #4H
EDDY COUNTY, NM
Rig:H&P 300
PathFinder Office Supervisor: FRANCISCO SINISTERRA
PathFinder Field Engineers:JUAN ALCOCER
KURT OBRIANT

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.42.42.6114 N LON:103.49.33.0414 W
GRID Reference:NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 697426.2200 Y: 623071.1000
North Aligned To:GRID NORTH
Total Magnetic Correction: 7.43° EAST TO GRID
Vertical Section Plane: 343.66
Survey Vert. Reference: 26.00' Kelly Bushing To Ground
Altitude:3667.50' Ground To MSL

Measured Depth	13233.00	(feet)
Inclination	91.45	(deg)
Azimuth	3.06	(deg)
True Vertical Depth	8142.19	(feet)
Vertical Section	4944.03	(feet)
Survey X cord	696034.49	(feet)
Survey Y cord	627815.20	(feet)
Survey Lat	32.72489430 N	(deg)
Survey Lon	103.83029638 W	(deg)
Rectangular Corr. N/S	4744.10 N	(feet)
Rectangular Corr. E/W	1391.73 W	(feet)
Closure Distance	4944.03	(feet)
Direction of Closure	343.65	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

Page 01/06

Tie-in Date: 10/01/2011

Date Completed: 10/10/2011

DEVON ENERGY CORPORATION
SERENE SISTERS 25 FEDERAL #4H
EDDY COUNTY, NM

Rig:H&P 300

PathFinder Office Supervisor: FRANCISCO SINISTERRA

PathFinder Field Engineers: JUAN ALCOCER

KURT OBRIANT

Survey Horiz. Reference:WELLHEAD

Ref Coordinates: LAT:32.42,42.6114 N LON:103.49,33.0414 W

GRID Reference:NAD83 new mexico east Transverse Mercator

Ref GRID Coord: X: 697426.2200 Y: 623071.1000

North Aligned To:GRID NORTH

Total Magnetic Correction: 7.43° EAST TO GRID

Vertical Section Plane: 343.66

Survey Vert. Reference: 26.00' Kelly Bushing To Ground

Altitude:3667.50' 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)
0.00	0.00	0.00	-0.00	0.00	-0.00	0.00 N	0.00 E	0.00@	89.67	0.00
THE FOLLOWING ARE SCIENTIFIC DRILLING GYRO SURVEYS.										
100.00	0.35	29.11	100.00	100.00	0.21	0.27 N	0.15 E	0.31@	29.57	0.35
200.00	0.37	24.21	199.99	100.00	0.67	0.83 N	0.43 E	0.93@	27.57	0.04
300.00	0.35	31.87	299.99	100.00	1.12	1.38 N	0.73 E	1.56@	27.72	0.05
400.00	0.35	25.09	399.99	100.00	1.55	1.92 N	1.02 E	2.17@	27.93	0.04
500.00	0.38	34.26	499.99	100.00	1.99	2.47 N	1.33 E	2.81@	28.37	0.07
600.00	0.32	347.70	599.99	100.00	2.48	3.02 N	1.46 E	3.35@	25.84	0.28
700.00	0.41	356.19	699.98	100.00	3.11	3.65 N	1.38 E	3.90@	20.69	0.10
800.00	0.40	343.84	799.98	100.00	3.81	4.34 N	1.26 E	4.52@	16.15	0.09
900.00	0.42	334.29	899.98	100.00	4.52	5.00 N	1.00 E	5.10@	11.30	0.07
1000.00	0.46	343.68	999.98	100.00	5.28	5.72 N	0.73 E	5.76@	7.26	0.08
1100.00	0.33	321.80	1099.97	100.00	5.95	6.33 N	0.44 E	6.35@	3.95	0.20
1200.00	0.33	338.70	1199.97	100.00	6.51	6.82 N	0.15 E	6.83@	1.30	0.10
1300.00	0.28	348.04	1299.97	100.00	7.04	7.33 N	0.00 W	7.33@	359.99	0.07
1400.00	0.34	12.54	1399.97	100.00	7.54	7.86 N	0.01 E	7.86@	0.10	0.14
1500.00	0.46	29.46	1499.97	100.00	8.08	8.50 N	0.27 E	8.50@	1.85	0.17
1600.00	0.48	47.78	1599.96	100.00	8.54	9.13 N	0.78 E	9.16@	4.90	0.15
1700.00	0.76	55.27	1699.96	100.00	8.93	9.79 N	1.64 E	9.93@	9.50	0.29
1800.00	0.72	55.70	1799.95	100.00	9.34	10.52 N	2.70 E	10.86@	14.40	0.04
1900.00	0.75	51.13	1899.94	100.00	9.78	11.29 N	3.73 E	11.89@	18.29	0.07
2000.00	0.80	49.79	1999.93	100.00	10.31	12.15 N	4.77 E	13.05@	21.45	0.05
2100.00	0.92	49.94	2099.92	100.00	10.92	13.12 N	5.92 E	14.39@	24.30	0.12
2200.00	1.04	48.94	2199.91	100.00	11.62	14.23 N	7.22 E	15.96@	26.90	0.12
2300.00	1.09	47.52	2299.89	100.00	12.42	15.47 N	8.61 E	17.70@	29.09	0.06
2400.00	0.78	42.99	2399.88	100.00	13.19	16.61 N	9.77 E	19.27@	30.47	0.32

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY CORPORATION
SERENE SISTERS 25 FEDERAL #4H
EDDY COUNTY, NM
RIG:H&P 300

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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)
2500.00	0.37	34.43	2499.87	100.00	13.74	17.37 N	10.42 E	20.26@	30.95	0.42
2600.00	0.31	31.26	2599.87	100.00	14.13	17.87 N	10.74 E	20.85@	31.01	0.06
2700.00	0.16	320.20	2699.87	100.00	14.44	18.21 N	10.79 E	21.17@	30.65	0.30
2800.00	0.16	308.31	2799.87	100.00	14.68	18.40 N	10.59 E	21.23@	29.93	0.03
2900.00	0.21	288.48	2899.87	100.00	14.90	18.55 N	10.31 E	21.22@	29.07	0.08
3000.00	0.24	272.42	2999.87	100.00	15.07	18.61 N	9.93 E	21.09@	28.07	0.07
3100.00	0.42	279.52	3099.86	100.00	15.30	18.68 N	9.36 E	20.89@	26.60	0.19
3200.00	0.47	294.60	3199.86	100.00	15.72	18.91 N	8.62 E	20.79@	24.50	0.13
3300.00	0.53	308.40	3299.86	100.00	16.37	19.37 N	7.89 E	20.92@	22.15	0.13
3400.00	0.57	310.26	3399.85	100.00	17.16	19.98 N	7.14 E	21.22@	19.67	0.04
3500.00	0.76	296.79	3499.85	100.00	18.03	20.60 N	6.17 E	21.51@	16.68	0.24
3600.00	0.78	315.87	3599.84	100.00	19.09	21.39 N	5.11 E	21.99@	13.43	0.26
3700.00	0.50	308.88	3699.83	100.00	20.05	22.15 N	4.29 E	22.56@	10.97	0.29
3800.00	0.31	307.78	3799.83	100.00	20.63	22.59 N	3.74 E	22.90@	9.40	0.19
3900.00	0.42	301.98	3899.83	100.00	21.12	22.95 N	3.21 E	23.17@	7.97	0.12
4000.00	0.41	299.48	3999.82	100.00	21.65	23.32 N	2.59 E	23.46@	6.34	0.02
4100.00	0.39	293.58	4099.82	100.00	22.12	23.63 N	1.97 E	23.71@	4.76	0.05
4200.00	0.36	292.32	4199.82	100.00	22.54	23.89 N	1.37 E	23.93@	3.27	0.03
4300.00	0.49	298.78	4299.82	100.00	23.04	24.21 N	0.70 E	24.22@	1.66	0.14
4400.00	0.74	287.27	4399.81	100.00	23.70	24.61 N	0.29 W	24.61@	359.32	0.28
4500.00	0.60	299.12	4499.80	100.00	24.43	25.06 N	1.36 W	25.09@	356.88	0.20
4600.00	0.81	287.90	4599.80	100.00	25.20	25.53 N	2.49 W	25.65@	354.42	0.25
4700.00	0.80	295.41	4699.79	100.00	26.06	26.05 N	3.80 W	26.32@	351.70	0.11
4800.00	0.72	289.10	4799.78	100.00	26.89	26.55 N	5.02 W	27.02@	349.29	0.12
4900.00	0.85	282.27	4899.77	100.00	27.61	26.91 N	6.34 W	27.65@	346.74	0.16
5000.00	0.96	276.19	4999.76	100.00	28.29	27.16 N	7.90 W	28.29@	343.79	0.15
5100.00	1.04	268.06	5099.74	100.00	28.83	27.22 N	9.64 W	28.88@	340.50	0.16
5200.00	1.12	273.95	5199.72	100.00	29.40	27.26 N	11.52 W	29.59@	337.09	0.14

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY CORPORATION
SERENE SISTERS 25 FEDERAL #4H
EDDY COUNTY, NM
RIG:H&P 300

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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)
5300.00	1.09	275.59	5299.70	100.00	30.09	27.42 N	13.44 W	30.54@	333.88	0.04
5400.00	1.15	273.90	5399.69	100.00	30.80	27.58 N	15.39 W	31.58@	330.84	0.07
5500.00	1.24	280.14	5499.66	100.00	31.63	27.84 N	17.46 W	32.86@	327.91	0.16
5600.00	1.26	274.52	5599.64	100.00	32.50	28.12 N	19.62 W	34.28@	325.10	0.12
5700.00	1.21	271.77	5699.62	100.00	33.22	28.23 N	21.77 W	35.65@	322.37	0.08
5800.00	1.33	281.21	5799.59	100.00	34.08	28.49 N	23.96 W	37.23@	319.94	0.24
5900.00	1.23	278.74	5899.57	100.00	35.08	28.88 N	26.16 W	38.97@	317.83	0.11
6000.00	1.29	279.70	5999.54	100.00	36.02	29.23 N	28.33 W	40.71@	315.90	0.06
6100.00	1.35	276.29	6099.52	100.00	36.97	29.55 N	30.61 W	42.55@	313.99	0.10
6200.00	1.37	280.90	6199.49	100.00	37.97	29.91 N	32.96 W	44.50@	312.22	0.11
6300.00	1.30	280.16	6299.46	100.00	39.03	30.33 N	35.25 W	46.50@	310.72	0.07
6400.00	1.42	277.91	6399.43	100.00	40.04	30.71 N	37.59 W	48.54@	309.24	0.13
6500.00	1.42	270.85	6499.40	100.00	40.92	30.89 N	40.06 W	50.59@	307.64	0.17
6600.00	1.60	273.74	6599.37	100.00	41.76	31.00 N	42.69 W	52.76@	305.99	0.20
6700.00	1.72	269.72	6699.33	100.00	42.66	31.09 N	45.58 W	55.18@	304.29	0.17
6800.00	1.86	272.57	6799.28	100.00	43.60	31.15 N	48.71 W	57.82@	302.60	0.17
6900.00	1.92	286.80	6899.22	100.00	45.04	31.71 N	51.93 W	60.85@	301.41	0.47
7000.00	2.05	302.72	6999.16	100.00	47.31	33.16 N	55.04 W	64.26@	301.07	0.56
7100.00	2.12	295.75	7099.10	100.00	49.90	34.93 N	58.21 W	67.89@	300.97	0.26
7200.00	2.04	288.60	7199.03	100.00	52.16	36.30 N	61.56 W	71.47@	300.53	0.27
7300.00	2.32	286.53	7298.96	100.00	54.27	37.45 N	65.19 W	75.18@	299.87	0.29
7400.00	2.21	276.61	7398.88	100.00	56.12	38.24 N	69.05 W	78.93@	298.98	0.41
** TIE IN TO SCIENTIFIC DRILLING GYRO SURVEYS.										
7430.00	2.18	272.99	7428.86	30.00	56.54	38.34 N	70.19 W	79.98@	298.64	0.47
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
7493.00	2.02	268.64	7491.82	63.00	57.22	38.38 N	72.50 W	82.03@	297.89	0.36
7525.00	1.85	268.73	7523.80	32.00	57.50	38.35 N	73.58 W	82.97@	297.53	0.53
7556.00	4.13	290.09	7554.76	31.00	58.30	38.72 N	75.13 W	84.52@	297.27	8.06

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY CORPORATION
SERENE SISTERS 25 FEDERAL #4H
EDDY COUNTY, NM
RIG:H&P 300

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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)
7587.00	8.09	297.73	7585.57	31.00	60.48	40.12 N	78.11 W	87.81@	297.19	13.01
7619.00	11.96	301.69	7617.08	32.00	64.51	42.91 N	82.92 W	93.37@	297.36	12.28
7651.00	16.09	302.30	7648.12	32.00	70.31	47.03 N	89.49 W	101.10@	297.72	12.91
7682.00	19.26	301.95	7677.65	31.00	77.35	52.03 N	97.47 W	110.48@	298.09	10.23
7713.00	21.28	302.13	7706.73	31.00	85.38	57.73 N	106.57 W	121.20@	298.44	6.52
7745.00	23.57	303.01	7736.31	32.00	94.58	64.30 N	116.85 W	133.38@	298.82	7.23
7776.00	25.85	302.21	7764.47	31.00	104.35	71.28 N	127.77 W	146.31@	299.16	7.43
7808.00	28.23	301.95	7792.97	32.00	115.23	79.01 N	140.10 W	160.84@	299.42	7.45
7839.00	29.63	302.30	7820.10	31.00	126.45	86.98 N	152.80 W	175.82@	299.65	4.55
7871.00	30.25	301.51	7847.83	32.00	138.37	95.42 N	166.35 W	191.78@	299.84	2.30
7902.00	31.13	300.02	7874.49	31.00	149.96	103.51 N	179.95 W	207.60@	299.91	3.75
7933.00	31.92	298.26	7900.91	31.00	161.51	111.40 N	194.11 W	223.80@	299.85	3.91
7965.00	34.12	296.41	7927.74	32.00	173.54	119.40 N	209.60 W	241.22@	299.67	7.56
7996.00	37.20	294.66	7952.93	31.00	185.60	127.18 N	225.91 W	259.25@	299.38	10.47
8028.00	41.42	294.04	7977.68	32.00	198.81	135.53 N	244.37 W	279.44@	299.01	13.24
8059.00	45.29	294.92	8000.22	31.00	212.72	144.35 N	263.74 W	300.66@	298.69	12.64
8091.00	47.31	296.06	8022.33	32.00	228.15	154.31 N	284.62 W	323.76@	298.47	6.82
8122.00	49.59	297.47	8042.89	31.00	244.01	164.76 N	305.33 W	346.94@	298.35	8.10
8154.00	52.76	298.79	8062.95	32.00	261.47	176.52 N	327.30 W	371.87@	298.34	10.41
8185.00	56.19	299.84	8080.96	31.00	279.52	188.88 N	349.30 W	397.09@	298.40	11.40
8216.00	60.23	300.11	8097.28	31.00	298.57	202.04 N	372.12 W	423.43@	298.50	13.05
8248.00	63.93	299.75	8112.27	32.00	318.99	216.14 N	396.62 W	451.69@	298.59	11.60
8279.00	67.01	299.75	8125.13	31.00	339.31	230.13 N	421.10 W	479.88@	298.66	9.94
8311.00	70.43	299.32	8136.75	32.00	360.71	244.83 N	447.04 W	509.69@	298.71	10.76
8342.00	73.34	298.79	8146.38	31.00	381.68	259.14 N	472.79 W	539.15@	298.73	9.53
8373.00	75.36	298.00	8154.75	31.00	402.69	273.33 N	499.05 W	569.00@	298.71	6.96
8405.00	77.91	297.73	8162.14	32.00	424.40	287.88 N	526.57 W	600.13@	298.67	8.01
8436.00	82.13	298.61	8167.51	31.00	445.80	302.29 N	553.48 W	630.65@	298.64	13.90

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Survey Report

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EDDY COUNTY, NM
RIG:H&P 300

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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)
8468.00	86.61	299.67	8170.65	32.00	468.50	317.80 N	581.29 W	662.49@	298.67	14.38
8491.00	89.87	300.46	8171.36	23.00	485.14	329.31 N	601.18 W	685.47@	298.71	14.58
8586.00	91.28	298.88	8170.41	95.00	553.48	376.33 N	683.71 W	780.44@	298.83	2.23
8683.00	90.84	300.46	8168.61	97.00	623.26	424.34 N	767.98 W	877.41@	298.92	1.69
8778.00	91.80	303.62	8166.42	95.00	694.25	474.71 N	848.48 W	972.25@	299.23	3.48
8872.00	91.98	307.75	8163.32	94.00	768.29	529.51 N	924.77 W	1065.63@	299.79	4.40
8966.00	90.75	312.15	8161.08	94.00	846.44	589.83 N	996.79 W	1158.23@	300.61	4.86
9060.00	89.60	316.45	8160.79	94.00	928.35	655.47 N	1064.05 W	1249.73@	301.63	4.73
9154.00	89.16	320.58	8161.81	94.00	1013.42	725.87 N	1126.30 W	1339.94@	302.80	4.42
9249.00	90.92	324.89	8161.74	95.00	1102.13	801.45 N	1183.81 W	1429.59@	304.10	4.90
9343.00	91.28	330.87	8159.94	94.00	1192.53	881.01 N	1233.75 W	1516.02@	305.53	6.37
9437.00	91.10	335.88	8157.98	94.00	1284.96	965.00 N	1275.86 W	1599.70@	307.10	5.33
9532.00	92.59	341.59	8154.92	95.00	1379.52	1053.44 N	1310.28 W	1681.24@	308.80	6.21
9627.00	92.33	346.78	8150.84	95.00	1474.40	1144.73 N	1336.14 W	1759.45@	310.59	5.46
9721.00	91.54	352.31	8147.67	94.00	1567.81	1237.08 N	1353.18 W	1833.43@	312.43	5.94
9815.00	89.43	349.59	8146.87	94.00	1661.04	1329.90 N	1367.96 W	1907.86@	314.19	3.66
9910.00	88.55	351.17	8148.55	95.00	1755.36	1423.54 N	1383.83 W	1985.31@	315.81	1.90
10004.00	89.96	356.36	8149.77	94.00	1847.87	1516.94 N	1394.04 W	2060.21@	317.42	5.72
10098.00	91.10	359.70	8148.90	94.00	1938.91	1610.87 N	1397.27 W	2132.43@	319.06	3.75
10193.00	90.92	358.64	8147.22	95.00	2030.43	1705.84 N	1398.64 W	2205.92@	320.65	1.13
10287.00	91.01	358.11	8145.64	94.00	2121.33	1799.79 N	1401.31 W	2280.99@	322.10	0.57
10381.00	90.92	0.84	8144.06	94.00	2211.75	1893.76 N	1402.17 W	2356.36@	323.48	2.91
10476.00	91.45	1.54	8142.09	95.00	2302.32	1988.72 N	1400.20 W	2432.19@	324.85	0.92
10570.00	91.10	1.72	8140.00	94.00	2391.72	2082.66 N	1397.53 W	2508.10@	326.14	0.42
10665.00	91.01	0.13	8138.25	95.00	2482.42	2177.63 N	1395.99 W	2586.67@	327.34	1.68
10759.00	90.92	0.22	8136.67	94.00	2572.53	2271.62 N	1395.70 W	2666.13@	328.43	0.14
10854.00	91.19	1.01	8134.92	95.00	2663.38	2366.59 N	1394.69 W	2746.98@	329.49	0.88
10948.00	91.36	0.49	8132.83	94.00	2753.21	2460.56 N	1393.45 W	2827.73@	330.48	0.58

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY CORPORATION
SERENE SISTERS 25 FEDERAL #4H
EDDY COUNTY, NM
RIG:H&P 300

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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)
11042.00	90.84	1.10	8131.02	94.00	2843.02	2554.53 N	1392.15 W	2909.25@	331.41	0.85
11136.00	90.22	359.78	8130.15	94.00	2933.01	2648.52 N	1391.43 W	2991.78@	332.28	1.55
11231.00	88.46	358.11	8131.25	95.00	3024.63	2743.50 N	1393.18 W	3076.96@	333.08	2.55
11325.00	88.64	358.11	8133.63	94.00	3115.63	2837.41 N	1396.28 W	3162.36@	333.80	0.19
11420.00	89.60	359.61	8135.09	95.00	3207.29	2932.38 N	1398.17 W	3248.65@	334.51	1.87
11514.00	90.66	359.43	8134.87	94.00	3297.71	3026.38 N	1398.95 W	3334.07@	335.19	1.14
11609.00	90.92	359.34	8133.56	95.00	3389.15	3121.36 N	1399.97 W	3420.94@	335.84	0.29
11703.00	92.24	359.78	8130.97	94.00	3479.52	3215.32 N	1400.70 W	3507.17@	336.46	1.48
11798.00	90.22	0.75	8128.93	95.00	3570.53	3310.29 N	1400.26 W	3594.27@	337.07	2.36
11892.00	90.66	0.40	8128.21	94.00	3660.46	3404.28 N	1399.31 W	3680.66@	337.66	0.60
11953.00	90.92	0.84	8127.37	61.00	3718.80	3465.27 N	1398.65 W	3736.89@	338.02	0.84
12047.00	91.63	1.37	8125.28	94.00	3808.45	3559.23 N	1396.84 W	3823.52@	338.57	0.94
12142.00	88.99	359.87	8124.76	95.00	3899.31	3654.21 N	1395.81 W	3911.72@	339.09	3.20
12236.00	87.93	356.44	8127.29	94.00	3990.27	3748.12 N	1398.84 W	4000.64@	339.53	3.82
12330.00	88.11	356.88	8130.54	94.00	4081.81	3841.90 N	1404.31 W	4090.51@	339.92	0.50
12425.00	87.67	357.76	8134.04	95.00	4174.06	3936.73 N	1408.75 W	4181.20@	340.31	1.04
12519.00	87.93	359.58	8137.64	94.00	4264.78	4030.63 N	1410.93 W	4270.45@	340.71	1.95
12613.00	88.46	0.08	8140.61	94.00	4355.01	4124.58 N	1411.21 W	4359.32@	341.11	0.78
12708.00	88.81	0.56	8142.87	95.00	4446.00	4219.56 N	1410.68 W	4449.12@	341.51	0.63
12802.00	89.16	1.24	8144.53	94.00	4535.76	4313.53 N	1409.20 W	4537.88@	341.91	0.81
12896.00	89.60	1.58	8145.55	94.00	4625.28	4407.49 N	1406.89 W	4626.59@	342.30	0.59
12990.00	89.96	2.29	8145.91	94.00	4714.54	4501.44 N	1403.71 W	4715.23@	342.68	0.85
13085.00	90.66	2.83	8145.40	95.00	4804.41	4596.34 N	1399.47 W	4804.67@	343.07	0.93
13163.00	91.45	3.06	8143.96	78.00	4878.02	4674.22 N	1395.46 W	4878.08@	343.38	1.05
STRAIGHT LINE PROJECTION TO BIT @ 13233' MD.										
13233.00	91.45	3.06	8142.19	70.00	4944.03	4744.10 N	1391.73 W	4944.03@	343.65	0.00

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY CORPORATION
SERENE SISTERS 25 FEDERAL #4H
EDDY COUNTY, NM
RIG:H&P 300

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** 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.:	SERENE SISTERS 25 FEDERAL	#4H	
WELL LOCATION:	EDDY COUNTY, NM		
COUNTY / STATE / COUNTRY:	EDDY	NM	USA
RIG:	H&P 300		
API WELL No:	30-015-38312		
JOB No:	700003843-WT-WT		
P.O. / AFE No.	155976		
DIRECTIONAL COMPANY:	PATHFINDER		

WELL SITE INFORMATION

TOTAL MAGNETIC CORRECTION-(TMC):			
On Wall Plat:	7.42	LWD Calculated:	7.43
Agreed Upon:		7.43	
X =	697426.220000	Feet	Y = 623071.100000
Feet		Feet	
SITE LATITUDE:	32.711837 N	SITE LONGITUDE:	103.825845 W
GRID SYSTEM:	TRUE ☐ UTM ☒ LAMBERT ☐	ZONE:	NEW MEXICO EAST
PROPOSED DRIFT DIRECTION:	343.66		
KELLY BUSHING ELEVATION:	26'		
ALTITUDE:	3667.5	Feet	WATER DEPTH:
			N/A
			Feet

TIE-IN SURVEY

MEASURED DEPTH:	7430		
DRIFT ANGLE:	2.18		
DRIFT DIRECTION:	272.99		
TRUE VERTICAL DEPTH:	7428.86		
VERTICAL SECTION:	56.57		
RECTANGULAR COORDINATE (N / S) :	38.84		
RECTANGULAR COORDINATE (E / W) :	-70.19		
CLOSURE DISTANCE / DIRECTION:	80.02	298.65	
SURVEY CALCULATION METHOD:	AA ☐	MC ☒	RC ☐ BT ☐
SOURCE OF TIE-IN DATA (COMPANY):	SCIENTIFIC DRILLING GYRO SURVEY		
COPY OF TIE-IN SURVEY REPORT	☒ YES		☐ NO

WELL PLAN

KICKOFF DEPTH:	7602'	TOTAL DEPTH:	13352.9'
KICKOFF ANGLE:	0	MAX ANGLE:	91

PES Engineers:

JUAN ALCOCER

KURT OBRIANT

**Signature of both field engineers required if applicable

Directional Driller:

JORDAN WILLIAMS

DATE: 30-Sep-2011



Scientific Drilling

Gyroscopic Survey Report for DEVON

Well Location	EDDY COUNTY, NEW MEXICO
Well Name	SERENE SISTERS 25 FED 4H
Rig Name	H & P 300
Survey Date	10/1/2011
Latitude	32.71 deg
North Reference	Grid North
Grid Correction	-0.28 deg
Depth Reference	RKB
Calculation Method	Minimum Curvature
Section (VS) Ref	0.00N (ft), 0.00E (ft), 343.66Azim (deg)
Definitive Survey	FINAL GYRO SURVEY
Operator	ANGEL GUEBARA

Comments

26 FOOT KB



Well Name:		SERENE SISTERS 25 FED 4H							
Survey:		FINAL GYRO SURVEY							
Survey Date:		10/1/2011							
MD	Inc	Azim	TVD	VS	Northing	Easting	DLS	Closure Distance	Closure Angle
ft	deg	deg	ft	ft	ft	ft	deg/100ft	ft	deg
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid	0.00	0.00
100.00	0.35	29.11	100.00	0.21	0.27	0.15	0.35	0.31	29.11
200.00	0.37	24.21	200.00	0.67	0.82	0.43	0.03	0.93	27.43
300.00	0.35	31.87	300.00	1.12	1.37	0.72	0.05	1.55	27.64
400.00	0.35	25.09	399.99	1.55	1.91	1.01	0.04	2.16	27.87
500.00	0.38	34.26	499.99	1.99	2.46	1.33	0.07	2.80	28.33
600.00	0.32	347.70	599.99	2.48	3.01	1.46	0.28	3.34	25.81
700.00	0.41	356.19	699.99	3.10	3.64	1.37	0.10	3.89	20.67
800.00	0.40	343.84	799.99	3.81	4.33	1.25	0.09	4.51	16.10
900.00	0.42	334.29	899.98	4.52	5.00	0.99	0.07	5.10	11.21
1000.00	0.46	343.68	999.98	5.29	5.72	0.72	0.08	5.77	7.17
1100.00	0.33	321.80	1099.98	5.95	6.33	0.43	0.20	6.34	3.89
1200.00	0.33	338.70	1199.98	6.51	6.82	0.15	0.10	6.83	1.25
1300.00	0.28	348.04	1299.97	7.04	7.34	-0.01	0.07	7.34	359.93
1400.00	0.34	12.54	1399.97	7.55	7.87	0.00	0.15	7.87	0.03
1500.00	0.46	29.46	1499.97	8.09	8.51	0.26	0.16	8.52	1.78
1600.00	0.48	47.78	1599.97	8.55	9.14	0.77	0.15	9.17	4.82
1700.00	0.76	55.27	1699.96	8.95	9.80	1.63	0.29	9.93	9.43
1800.00	0.72	55.70	1799.95	9.35	10.53	2.69	0.04	10.87	14.35
1900.00	0.75	51.13	1899.94	9.80	11.30	3.73	0.07	11.90	18.25
2000.00	0.80	49.79	1999.94	10.33	12.16	4.77	0.04	13.06	21.41
2100.00	0.92	49.94	2099.92	10.93	13.12	5.91	0.12	14.39	24.25
2200.00	1.04	48.94	2199.91	11.63	14.23	7.20	0.12	15.95	26.85
2300.00	1.09	47.52	2299.89	12.43	15.47	8.59	0.06	17.69	29.04
2400.00	0.78	42.99	2399.88	13.20	16.61	9.76	0.32	19.27	30.43
2500.00	0.37	34.43	2499.87	13.75	17.38	10.41	0.42	20.26	30.91
2600.00	0.31	31.26	2599.87	14.14	17.88	10.73	0.07	20.86	30.97
2700.00	0.16	320.20	2699.87	14.46	18.23	10.78	0.30	21.18	30.61
2800.00	0.16	308.31	2799.87	14.70	18.42	10.58	0.03	21.25	29.88
2900.00	0.21	288.48	2899.87	14.92	18.56	10.30	0.08	21.23	29.03
3000.00	0.24	272.42	2999.87	15.09	18.63	9.92	0.07	21.11	28.04
3100.00	0.42	279.52	3099.87	15.31	18.70	9.36	0.18	20.91	26.58
3200.00	0.47	294.60	3199.86	15.74	18.93	8.62	0.13	20.80	24.48
3300.00	0.53	308.40	3299.86	16.39	19.39	7.89	0.13	20.93	22.13
3400.00	0.57	310.26	3399.86	17.18	20.00	7.14	0.05	21.24	19.66
3500.00	0.76	296.79	3499.85	18.06	20.62	6.17	0.25	21.52	16.65
3600.00	0.78	315.87	3599.84	19.12	21.41	5.09	0.26	22.01	13.38
3700.00	0.50	308.88	3699.83	20.08	22.18	4.28	0.29	22.59	10.92
3800.00	0.31	307.78	3799.83	20.66	22.62	3.72	0.19	22.92	9.35



Well Name:		SERENE SISTERS 25 FED 4H								
Survey:		FINAL GYRO SURVEY								
Survey Date:		10/1/2011								
MD	Inc	Azim	TVD	VS	Northing	Easting	DLS	Closure Distance	Closure Angle	
ft	deg	deg	ft	ft	ft	ft	deg/100ft	ft	deg	
3900.00	0.42	301.98	3899.83	21.15	22.98	3.20	0.11	23.20	7.94	
4000.00	0.41	299.48	3999.83	21.67	23.34	2.58	0.02	23.49	6.32	
4100.00	0.39	293.58	4099.82	22.15	23.66	1.96	0.05	23.74	4.74	
4200.00	0.36	292.32	4199.82	22.57	23.91	1.35	0.03	23.95	3.24	
4300.00	0.49	298.78	4299.82	23.07	24.24	0.68	0.14	24.25	1.62	
4400.00	0.74	287.27	4399.81	23.73	24.64	-0.31	0.27	24.64	359.28	
4500.00	0.60	299.12	4499.81	24.46	25.08	-1.38	0.20	25.12	356.86	
4600.00	0.81	287.90	4599.80	25.22	25.55	-2.50	0.25	25.68	354.41	
4700.00	0.80	295.41	4699.79	26.08	26.07	-3.80	0.11	26.34	351.71	
4800.00	0.72	289.10	4799.78	26.91	26.57	-5.02	0.11	27.04	349.29	
4900.00	0.85	282.27	4899.77	27.63	26.94	-6.35	0.16	27.67	346.74	
5000.00	0.96	276.19	4999.76	28.31	27.19	-7.91	0.14	28.31	343.78	
5100.00	1.04	268.06	5099.74	28.86	27.25	-9.65	0.16	28.91	340.49	
5200.00	1.12	273.95	5199.73	29.43	27.28	-11.53	0.13	29.62	337.08	
5300.00	1.09	275.59	5299.71	30.12	27.44	-13.45	0.04	30.56	333.88	
5400.00	1.15	273.90	5399.69	30.82	27.60	-15.40	0.06	31.61	330.85	
5500.00	1.24	280.14	5499.67	31.65	27.86	-17.46	0.16	32.88	327.93	
5600.00	1.26	274.52	5599.64	32.52	28.14	-19.62	0.13	34.30	325.11	
5700.00	1.21	271.77	5699.62	33.24	28.26	-21.77	0.08	35.67	322.38	
5800.00	1.33	281.21	5799.60	34.11	28.52	-23.97	0.24	37.25	319.95	
5900.00	1.23	278.74	5899.57	35.10	28.90	-26.17	0.12	38.99	317.84	
6000.00	1.29	279.70	5999.55	36.05	29.26	-28.35	0.07	40.74	315.91	
6100.00	1.35	276.29	6099.52	37.00	29.58	-30.63	0.10	42.58	314.00	
6200.00	1.37	280.90	6199.49	38.00	29.93	-32.98	0.11	44.54	312.23	
6300.00	1.30	280.16	6299.46	39.05	30.36	-35.27	0.07	46.53	310.72	
6400.00	1.42	277.91	6399.44	40.07	30.73	-37.61	0.13	48.57	309.25	
6500.00	1.42	270.85	6499.41	40.94	30.92	-40.07	0.17	50.62	307.65	
6600.00	1.60	273.74	6599.37	41.79	31.03	-42.70	0.20	52.79	306.00	
6700.00	1.72	269.72	6699.33	42.68	31.11	-45.60	0.17	55.20	304.30	
6800.00	1.86	272.57	6799.28	43.62	31.18	-48.72	0.16	57.84	302.61	
6900.00	1.92	286.80	6899.23	45.07	31.73	-51.95	0.47	60.87	301.42	
7000.00	2.05	302.72	6999.17	47.34	33.19	-55.06	0.57	64.29	301.08	
7100.00	2.12	295.75	7099.10	49.93	34.96	-58.24	0.26	67.92	300.98	
7200.00	2.04	288.60	7199.03	52.19	36.33	-61.59	0.27	71.50	300.54	
7300.00	2.32	286.53	7298.96	54.31	37.47	-65.21	0.29	75.21	299.88	
7400.00	2.21	276.61	7398.88	56.16	38.27	-69.07	0.41	78.97	298.99	
7430.00	2.18	272.99	7428.86	56.57	38.37	-70.22	0.47	80.02	298.65	



PathFinder Energy Services, Inc. Magnetic & Grid Calculations

Devon Energy
Serene Sisters 25 Federal #4H
Eddy County, NM
Rig:HP 300

Mon Sep 26 11:00:43 2011

Coordinates

Latitude: 32.711837 N (32 deg. 42 min. 42.6114 sec.)
Longitude: 103.825845 W (-103 deg. 49 min. 33.0414 sec.)
Elevation: 3693.50 feet.
Calculation Date: Sep/26/2011

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.5877 degrees
Total Magnetic Field: 0.48852 gauss
Magnetic Declination: 7.705336 degrees
Horizontal Intensity: 0.239909 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.705336 Degr

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 697426.2200 feet
Y: 623071.1000 feet
True to Grid: (convergence) -0.274259 degrees
Magnetic to Grid: 7.431077 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 7.431077 Degr.

PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

DEVON ENERGY CORPORATION
SERENE SISTERS 25 FEDERAL #4H
EDDY COUNTY, NEW MEXICO
Rig:HP 300

Fri Sep 30 02:26:28 2011

Coordinates

Latitude: 32.711837 N (32 deg. 42 min. 42.6114 sec.)
Longitude: 103.825845 W (-103 deg. 49 min. 33.0414 sec.)
Elevation: 3693.50 feet.
Calculation Date: Sep/30/2011

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.5874 degrees
Total Magnetic Field: 0.48851 gauss
Magnetic Declination: 7.703993 degrees
Horizontal Intensity: 0.239905 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.703993 Degr

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 697426.2200 feet
Y: 623071.1000 feet
True to Grid: (convergence) -0.274259 degrees
Magnetic to Grid: 7.429733 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 7.429733 Degr.

Form 3160-3
(February 2005)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007

1a. Type of work ☒ DRILL ☐ REENTER		5. Lease Serial No. NMNM LC 0065680	
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name	
2. Name of Operator Devon Energy Production Co., LP		7. If Unit or CA Agreement, Name and No	
3a. Address 20 North Broadway OKC, OK 73102		8. Lease Name and Well No Serene Sisters 25 Federal 4H	
3b. Phone No (include area code) (405)-552-7802		9. API Well No. 30-015-38312	
4. Location of Well (Report location clearly and in accordance with any State requirements*) At surface SESW 200' FSL & 1625' FWL Lot N At proposed prod. zone NWNW 400' FNL & 990' FWL Lot D		10. Field and Pool or Exploratory TAMANO; Bone Spring	
14. Distance in miles and direction from nearest town or post office* Approximately 12 miles southeast of Loco Hills, NM.		11. Sec, T R M or Blk and Survey or Area Sec 25-T18S-R31E	
15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drg unit line, if any) 200'		12. County or Parish Eddy	
16. No of acres in lease 640 acres		13. State NM	
17. Spacing Unit dedicated to this well 160 acres		18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft SL: 50' BHL: 990'	
19. Proposed Depth TVD 8,240' MD 12,914'		20. BLM/BIA Bond No on file CO-1104	
21. Elevations (Show whether DF, KDB, RT, GL, etc) 3667.5' GL		22. Approximate date work will start* 09/15/2010	
23. Estimated duration 45 days			

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, must be attached to this form

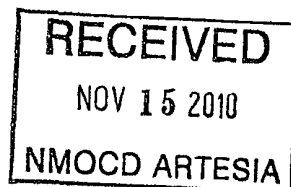
- Well plat certified by a registered surveyor
- A Drilling Plan
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office)
- Bond to cover the operations unless covered by an existing bond on file (see Item 20 above)
- Operator certification
- Such other site specific information and/or plans as may be required by the BLM

25. Signature 	Name (Printed/Typed) Stephanie A. Ysasaga	Date 08/05/2010
Title Sr. Staff Engineering Technician		
Approved by (Signature) Is/ Don Peterson	Name (Printed/Typed)	Date NOV 12 2010
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction

*(Instructions on page 2)

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

Capitan Controlled Water Basin

SEE ATTACHED FOR
CONDITIONS OF APPROVAL