

30.015.28312

DEVON ENERGY

Tamano

Eddy County, NM

Serene Sisters 25 Federal #4H

VH - Job #32K0911940

Survey: Actual

SDI Standard Survey Report

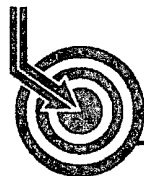
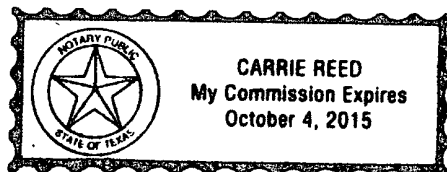
This survey is correct to the best of my knowledge and is supported by actual field data.

[Signature]

Notarized this date 15th of November 2011.

[Signature]

Notary Signature
County of Midland
State of Texas



Scientific Drilling
Directional Drilling Operations

Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well Serene Sisters 25 Federal #4H
Project:	Tamano	TVD Reference:	WELL @ 0 0usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0 0usft (Original Well Elev)
Well:	Serene Sisters 25 Federal #4H	North Reference:	Grid
Wellbore:	VH - Job #32K0911940	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K0911940	Database:	EDM-Regulatory

Project:	Tamano		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		Eddy County, NM			
Site Position:		Northing:	627,983 43 usft	Latitude:	32° 43' 31 099 N
From:	Lat/Long	Easting:	699,925 80 usft	Longitude:	103° 49' 3 506 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0 28 °

Well	Serene Sisters 25 Federal #4H, Directional (Pathfinder)					
Well Position	+N/-S	0 0 usft	Northing:	623,082 06 usft	Latitude:	32° 42' 42 720 N
	+E/-W	0 0 usft	Easting:	697,423 46 usft	Longitude:	103° 49' 33 073 W
Position Uncertainty		0 0 usft	Wellhead Elevation:	usft	Ground Level:	0 0 usft

Wellbore	VH - Job #32K0911940				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/30/2011	7 71	60 59	48,879

Design:	VH - Job #32K0911940			
Audit Notes:				
Version:	1 0	Phase:	ACTUAL	Tie On Depth: 0 0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0 0	0 0	0 0	343 66

Survey Program		Date	11/15/2011		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	7,430 0	Actual (VH - Job #32K0911940)	Keeper	Keeper Gyro	

Survey								
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)	
0 0	0 00	0 00	0 0	0 0	0 0	0 00	0 0	
100 0	0 35	29 11	100 0	0 3	0 1	29 11	0 3	
200 0	0 37	24 21	200 0	0 8	0 4	27 42	0 9	
300 0	0 35	31 87	300 0	1 4	0 7	27 62	1 6	
400 0	0 35	25 09	400 0	1 9	1 0	27 86	2 2	
500 0	0 38	34 26	500 0	2 5	1 3	28 32	2 8	
600 0	0 32	347 70	600 0	3 0	1 5	25 79	3 3	
700 0	0 41	356 19	700 0	3 6	1 4	20 65	3 9	
800 0	0 40	343 84	800 0	4 3	1 3	16 11	4 5	
900 0	0 42	334.29	900 0	5 0	1 0	11 27	5 1	
1,000 0	0 46	343 68	1,000 0	5 7	0 7	7 23	5 8	
1,100 0	0 33	321 80	1,100 0	6 3	0 4	3 93	6 3	

Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well Serene Sisters 25 Federal #4H
Project:	Tamano	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	Serene Sisters 25 Federal #4H	North Reference:	Grid
Wellbore:	VH - Job #32K0911940	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K0911940	Database:	EDM-Regulatory

Survey								
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)	
1,200.0	0.33	338.70	1,200.0	6.8	0.2	1.27	6.8	
1,300.0	0.28	348.04	1,300.0	7.3	0.0	359.97	7.3	
1,400.0	0.34	12.54	1,400.0	7.9	0.0	0.07	7.9	
1,500.0	0.46	29.46	1,500.0	8.5	0.3	1.83	8.5	
1,600.0	0.48	47.78	1,600.0	9.1	0.8	4.88	9.2	
1,700.0	0.76	55.27	1,700.0	9.8	1.6	9.48	9.9	
1,800.0	0.72	55.70	1,800.0	10.5	2.7	14.39	10.9	
1,900.0	0.75	51.13	1,899.9	11.3	3.7	18.28	11.9	
2,000.0	0.80	49.79	1,999.9	12.1	4.8	21.44	13.1	
2,100.0	0.92	49.94	2,099.9	13.1	5.9	24.29	14.4	
2,200.0	1.04	48.94	2,199.9	14.2	7.2	26.89	16.0	
2,300.0	1.09	47.52	2,299.9	15.5	8.6	29.08	17.7	
2,400.0	0.78	42.99	2,399.9	16.6	9.8	30.46	19.3	
2,500.0	0.37	34.43	2,499.9	17.4	10.4	30.94	20.3	
2,600.0	0.31	31.26	2,599.9	17.9	10.7	31.00	20.8	
2,700.0	0.16	320.20	2,699.9	18.2	10.8	30.65	21.2	
2,800.0	0.16	308.31	2,799.9	18.4	10.6	29.92	21.2	
2,900.0	0.21	288.48	2,899.9	18.5	10.3	29.06	21.2	
3,000.0	0.24	272.42	2,999.9	18.6	9.9	28.06	21.1	
3,100.0	0.42	279.52	3,099.9	18.7	9.4	26.59	20.9	
3,200.0	0.47	294.60	3,199.9	18.9	8.6	24.50	20.8	
3,300.0	0.53	308.40	3,299.9	19.4	7.9	22.14	20.9	
3,400.0	0.57	310.26	3,399.9	20.0	7.1	19.67	21.2	
3,500.0	0.76	296.79	3,499.8	20.6	6.2	16.67	21.5	
3,600.0	0.78	315.87	3,599.8	21.4	5.1	13.42	22.0	
3,700.0	0.50	308.88	3,699.8	22.2	4.3	10.96	22.6	
3,800.0	0.31	307.78	3,799.8	22.6	3.7	9.39	22.9	
3,900.0	0.42	301.98	3,899.8	23.0	3.2	7.97	23.2	
4,000.0	0.41	299.48	3,999.8	23.3	2.6	6.34	23.5	
4,100.0	0.39	293.58	4,099.8	23.6	2.0	4.75	23.7	
4,200.0	0.36	292.32	4,199.8	23.9	1.4	3.27	23.9	
4,300.0	0.49	298.78	4,299.8	24.2	0.7	1.65	24.2	
4,400.0	0.74	287.27	4,399.8	24.6	-0.3	359.32	24.6	
4,500.0	0.60	299.12	4,499.8	25.1	-1.4	356.88	25.1	
4,600.0	0.81	287.90	4,599.8	25.5	-2.5	354.41	25.7	
4,700.0	0.80	295.41	4,699.8	26.0	-3.8	351.70	26.3	
4,800.0	0.72	289.10	4,799.8	26.6	-5.0	349.28	27.0	
4,900.0	0.85	282.27	4,899.8	26.9	-6.3	346.74	27.7	
5,000.0	0.96	276.19	4,999.8	27.2	-7.9	343.78	28.3	
5,100.0	1.04	268.06	5,099.7	27.2	-9.6	340.50	28.9	
5,200.0	1.12	273.95	5,199.7	27.3	-11.5	337.08	29.6	
5,300.0	1.09	275.59	5,299.7	27.4	-13.4	333.88	30.5	
5,400.0	1.15	273.90	5,399.7	27.6	-15.4	330.83	31.6	
5,500.0	1.24	280.14	5,499.7	27.8	-17.5	327.91	32.9	

Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well Serene Sisters 25 Federal #4H
Project:	Tamano	TVD Reference:	WELL @ 0 0usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0 0usft (Original Well Elev)
Well:	Serene Sisters 25 Federal #4H	North Reference:	Grid
Wellbore:	VH - Job #32K0911940	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K0911940	Database:	EDM-Regulatory

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
5,600 0	1 26	274.52	5,599 6	28 1	-19 6	325 09	34 3
5,700 0	1 21	271 77	5,699 6	28 2	-21 8	322 36	35 7
5,800 0	1 33	281 21	5,799 6	28.5	-24 0	319 93	37 2
5,900 0	1 23	278 74	5,899 6	28 9	-26 2	317.83	39.0
6,000 0	1 29	279 70	5,999 5	29 2	-28 3	315 90	40 7
6,100 0	1 35	276 29	6,099 5	29 6	-30 6	313 99	42 6
6,200 0	1 37	280 90	6,199 5	29 9	-33 0	312 22	44 5
6,300 0	1 30	280 16	6,299 5	30 3	-35.3	310 71	46 5
6,400 0	1 42	277 91	6,399 4	30 7	-37 6	309 24	48 5
6,500 0	1 42	270 85	6,499.4	30 9	-40 1	307.64	50 6
6,600 0	1 60	273 74	6,599 4	31 0	-42 7	305 99	52 8
6,700 0	1 72	269 72	6,699 3	31 1	-45 6	304 29	55 2
6,800 0	1 86	272 57	6,799 3	31 2	-48 7	302 60	57 8
6,900 0	1 92	286 80	6,899 2	31 7	-51.9	301 41	60 8
7,000 0	2 05	302 72	6,999 2	33 2	-55.0	301 07	64 3
7,100 0	2 12	295 75	7,099 1	34 9	-58 2	300 97	67 9
7,200 0	2 04	288 60	7,199 0	36 3	-61 6	300 53	71 5
7,300 0	2 32	286 53	7,299 0	37 4	-65 2	299 87	75 2
7,400 0	2 21	276 61	7,398 9	38 2	-69 0	298.98	78 9
7,430.0	2 18	272 99	7,428 9	38 3	-70 2	298 64	80 0



Scientific Drilling
Directional Drilling Operations

Project: Tamáño
Eddy County, NM
Well: Serene Sisters 25 Federal #4H
Wellbore: VH - Job #32K0911940
Design: VH - Job #32K0911940



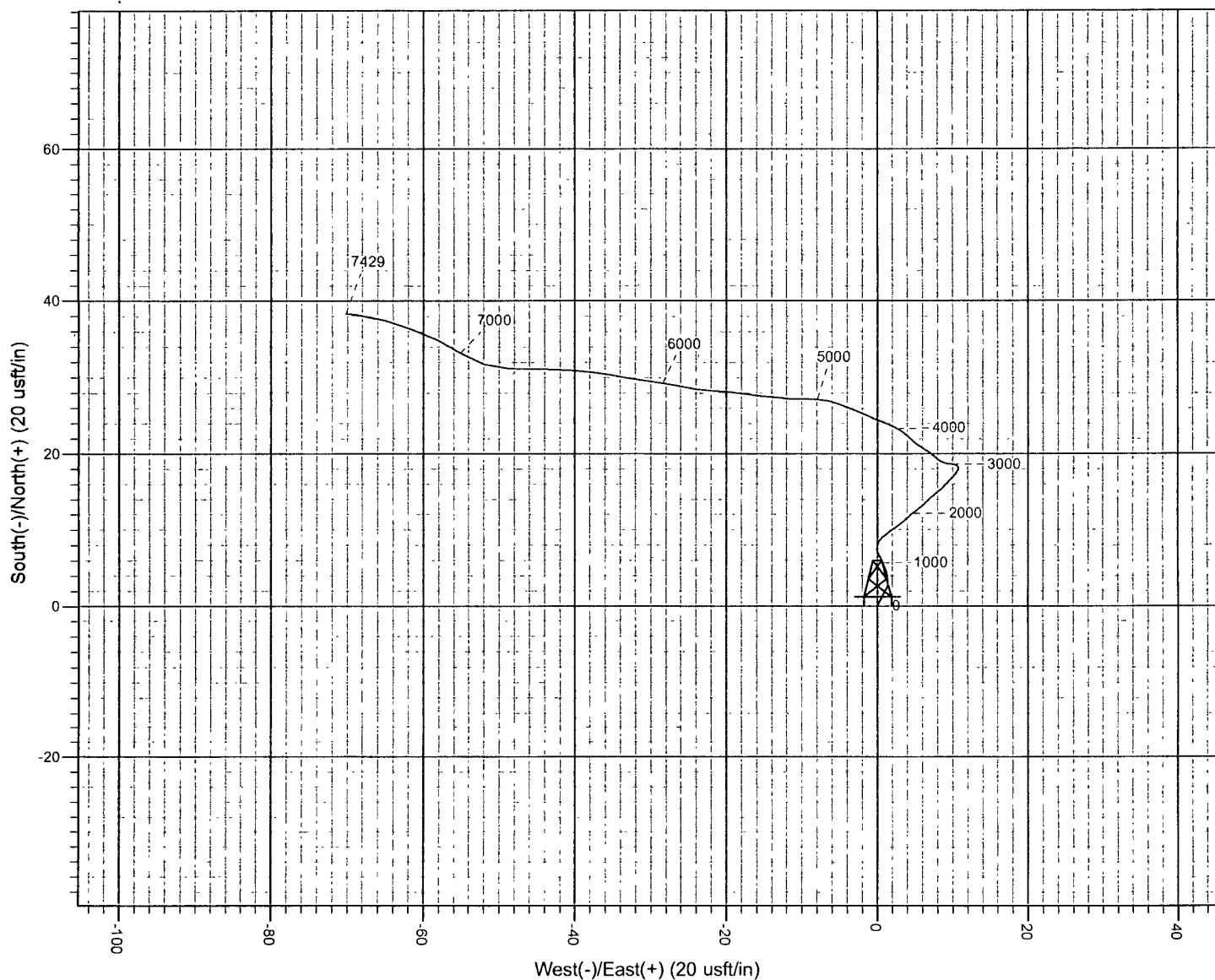
Azimuths to Grid North
True North -0 27°
Magnetic North 7 43°

Magnetic Field
Strength, 48879 0snT
Dip Angle 60 59°
Date: 9/30/2011
Model IGRF2010

WELL DETAILS: Serene Sisters 25 Federal #4H
WELL @ 0.0usft (Original Well Elev)

Ground Level: 0.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	623082.06	697423.46	32° 42' 42.720 N	103° 49' 33.073 W	



PROJECT DETAILS: Tamano
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level

SITE DETAILS: Eddy County, NM
Site Centre Latitude: 32° 43' 31.099 N
Longitude: 103° 49' 3.506 W
Positional Uncertainty: 0.0
Convergence: 0.28
Local North: Grid

DEVON ENERGY

Tamano

Eddy County, NM

Serene Sisters 25 Federal #4H

VH - Job #32K11111122

Survey: Gyro

SDI Standard Survey Report

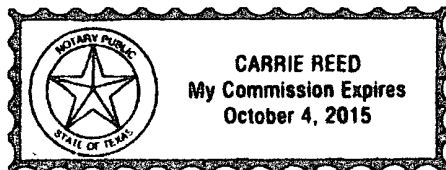
This survey is correct to the best of my knowledge and is supported by actual field data.

[Signature]

Notarized this date 12th of December, 2011.

[Signature]

Notary Signature
County of Midland
State of Texas



Scientific Drilling International, Inc.

SDI Standard Survey Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well Serene Sisters 25 Federal #4H
Project:	Tamano	TVD Reference:	WELL @ 0 0usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0 0usft (Original Well Elev)
Well:	Serene Sisters 25 Federal #4H	North Reference:	Grid
Wellbore:	VH - Job #32K0911940	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K0911940	Database:	EDM-Regulatory

Project	Tamano		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		Eddy County, NM			
Site Position:		Northing:	627,983 43 usft	Latitude:	32° 43' 31 099 N
From:	Lat/Long	Easting:	699,925 80 usft	Longitude:	103° 49' 3 506 W
Position Uncertainty:	0 0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.28 °

Well	Serene Sisters 25 Federal #4H, Directional (Pathfinder)					
Well Position	+N/-S	0 0 usft	Northing:	623,082 06 usft	Latitude:	32° 42' 42 720 N
	+E/-W	0 0 usft	Easting:	697,423 46 usft	Longitude:	103° 49' 33.073 W
Position Uncertainty		0 0 usft	Wellhead Elevation:	usft	Ground Level:	0 0 usft

Wellbore:	VH - Job #32K0911940				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/30/2011	7 71	60 59	48,879

Design	VH - Job #32K0911940			
Audit Notes:				
Version:	1 0	Phase:	ACTUAL	Tie On Depth: 0 0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0 0	0 0	0.0	343 66

Survey Program		Date	11/15/2011		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100 0	7,430 0	Actual (VH - Job #32K0911940)	Keeper	Keeper Gyro	

Measured Depth	Inclination	Azimuth	True Vertical	North/South	East/West	Closure Azimuth	Closure Distance
(usft)	(°)	(°)	Depth	(usft)	(usft)	(°)	(usft)
0 0	0 00	0 00	0 0	0 0	0 0	0 00	0 0
100 0	0 35	29 11	100 0	0 3	0 1	29 11	0 3
200 0	0 37	24 21	200 0	0 8	0 4	27 42	0 9
300 0	0 35	31 87	300 0	1 4	0 7	27 62	1 6
400 0	0 35	25 09	400 0	1 9	1 0	27 86	2 2
500 0	0 38	34 26	500 0	2 5	1 3	28 32	2 8
600 0	0 32	347 70	600 0	3 0	1 5	25 79	3 3
700 0	0 41	356 19	700 0	3 6	1 4	20 65	3 9
800 0	0 40	343 84	800 0	4 3	1 3	16 11	4 5
900 0	0 42	334 29	900 0	5 0	1 0	11 27	5 1
1,000 0	0 46	343 68	1,000 0	5 7	0 7	7 23	5 8
1,100 0	0 33	321 80	1,100 0	6 3	0 4	3 93	6 3

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SDI Standard Survey Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well Serene Sisters 25 Federal #4H
Project:	Tamano	TVD Reference:	WELL @ 0 0usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0 0usft (Original Well Elev)
Well:	Serene Sisters 25 Federal #4H	North Reference:	Grid
Wellbore:	VH - Job #32K0911940	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K0911940	Database:	EDM-Regulatory

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
1,200 0	0 33	338 70	1,200 0	6.8	0 2	1 27	6 8
1,300 0	0 28	348 04	1,300 0	7 3	0 0	359 97	7 3
1,400 0	0 34	12 54	1,400 0	7 9	0 0	0 07	7 9
1,500 0	0 46	29 46	1,500 0	8.5	0 3	1 83	8 5
1,600 0	0 48	47 78	1,600 0	9.1	0 8	4 88	9 2
1,700 0	0 76	55 27	1,700 0	9.8	1 6	9 48	9 9
1,800 0	0 72	55.70	1,800 0	10 5	2 7	14 39	10 9
1,900 0	0 75	51.13	1,899 9	11 3	3 7	18.28	11 9
2,000 0	0 80	49 79	1,999 9	12 1	4 8	21 44	13 1
2,100 0	0 92	49 94	2,099 9	13 1	5 9	24.29	14 4
2,200 0	1 04	48 94	2,199 9	14 2	7 2	26.89	16 0
2,300 0	1 09	47 52	2,299 9	15 5	8 6	29 08	17 7
2,400 0	0 78	42 99	2,399 9	16 6	9.8	30 46	19 3
2,500 0	0 37	34 43	2,499 9	17.4	10 4	30 94	20 3
2,600 0	0 31	31 26	2,599 9	17 9	10 7	31.00	20 8
2,700 0	0 16	320 20	2,699 9	18 2	10 8	30 65	21 2
2,800 0	0 16	308 31	2,799 9	18 4	10 6	29.92	21 2
2,900 0	0 21	288 48	2,899.9	18 5	10 3	29 06	21 2
3,000 0	0 24	272 42	2,999 9	18 6	9 9	28 06	21 1
3,100 0	0 42	279 52	3,099 9	18 7	9 4	26 59	20 9
3,200 0	0 47	294 60	3,199 9	18.9	8 6	24 50	20 8
3,300 0	0 53	308 40	3,299 9	19.4	7 9	22 14	20 9
3,400 0	0 57	310 26	3,399 9	20 0	7 1	19 67	21 2
3,500 0	0 76	296 79	3,499 8	20 6	6 2	16 67	21 5
3,600 0	0 78	315 87	3,599 8	21 4	5 1	13 42	22 0
3,700 0	0 50	308 88	3,699 8	22 2	4 3	10 96	22 6
3,800 0	0 31	307 78	3,799 8	22 6	3 7	9 39	22 9
3,900 0	0 42	301 98	3,899 8	23 0	3 2	7 97	23.2
4,000 0	0 41	299 48	3,999 8	23.3	2 6	6 34	23 5
4,100 0	0 39	293 58	4,099 8	23 6	2 0	4 75	23 7
4,200 0	0 36	292 32	4,199 8	23 9	1 4	3 27	23 9
4,300 0	0 49	298 78	4,299 8	24 2	0 7	1 65	24 2
4,400 0	0 74	287 27	4,399 8	24 6	-0 3	359 32	24 6
4,500 0	0 60	299 12	4,499 8	25 1	-1 4	356 88	25 1
4,600 0	0 81	287 90	4,599 8	25 5	-2 5	354 41	25 7
4,700 0	0 80	295 41	4,699 8	26 0	-3 8	351 70	26 3
4,800 0	0 72	289 10	4,799 8	26 6	-5 0	349 28	27 0
4,900 0	0 85	282 27	4,899 8	26.9	-6 3	346 74	27 7
5,000 0	0 96	276 19	4,999 8	27 2	-7 9	343 78	28 3
5,100 0	1 04	268 06	5,099 7	27 2	-9 6	340 50	28 9
5,200 0	1 12	273 95	5,199 7	27 3	-11.5	337 08	29 6
5,300 0	1 09	275 59	5,299 7	27 4	-13 4	333 88	30 5
5,400 0	1 15	273 90	5,399 7	27 6	-15 4	330 83	31 6
5,500 0	1 24	280 14	5,499 7	27 8	-17 5	327 91	32.9

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SDI Standard Survey Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well Serene Sisters 25 Federal #4H
Project:	Tamano	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	Serene Sisters 25 Federal #4H	North Reference:	Grid
Wellbore:	VH - Job #32K0911940	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K0911940	Database:	EDM-Regulatory

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
5,600.0	1.26	274.52	5,599.6	28.1	-19.6	325.09	34.3
5,700.0	1.21	271.77	5,699.6	28.2	-21.8	322.36	35.7
5,800.0	1.33	281.21	5,799.6	28.5	-24.0	319.93	37.2
5,900.0	1.23	278.74	5,899.6	28.9	-26.2	317.83	39.0
6,000.0	1.29	279.70	5,999.5	29.2	-28.3	315.90	40.7
6,100.0	1.35	276.29	6,099.5	29.6	-30.6	313.99	42.6
6,200.0	1.37	280.90	6,199.5	29.9	-33.0	312.22	44.5
6,300.0	1.30	280.16	6,299.5	30.3	-35.3	310.71	46.5
6,400.0	1.42	277.91	6,399.4	30.7	-37.6	309.24	48.5
6,500.0	1.42	270.85	6,499.4	30.9	-40.1	307.64	50.6
6,600.0	1.60	273.74	6,599.4	31.0	-42.7	305.99	52.8
6,700.0	1.72	269.72	6,699.3	31.1	-45.6	304.29	55.2
6,800.0	1.86	272.57	6,799.3	31.2	-48.7	302.60	57.8
6,900.0	1.92	286.80	6,899.2	31.7	-51.9	301.41	60.8
7,000.0	2.05	302.72	6,999.2	33.2	-55.0	301.07	64.3
7,100.0	2.12	295.75	7,099.1	34.9	-58.2	300.97	67.9
7,200.0	2.04	288.60	7,199.0	36.3	-61.6	300.53	71.5
7,300.0	2.32	286.53	7,299.0	37.4	-65.2	299.87	75.2
7,400.0	2.21	276.61	7,398.9	38.2	-69.0	298.98	78.9
7,430.0	2.18	272.99	7,428.9	38.3	-70.2	298.64	80.0

Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well Serene Sisters 25 Federal #4H
Project:	Tamano	TVD Reference:	WELL @ 0 0usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0 0usft (Original Well Elev)
Well:	Serene Sisters 25 Federal #4H	North Reference:	Grid
Wellbore:	VH - Job #32K11111122	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K11111122	Database:	EDM-Regulatory

Project	Tamano		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Eddy County, NM				
Site Position:		Northing:	627,983 43 usft	Latitude:	32° 43' 31 099 N
From:	Lat/Long	Easting:	699,925.80 usft	Longitude:	103° 49' 33 073 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0 28 °

Well	Serene Sisters 25 Federal #4H, Directional (Pathfinder)					
Well Position	+N/-S	0 0 usft	Northing:	623,082 06 usft	Latitude:	32° 42' 42 720 N
	+E/-W	0.0 usft	Easting:	697,423 46 usft	Longitude:	103° 49' 33 073 W
Position Uncertainty		0 0 usft	Wellhead Elevation:	usft	Ground Level:	0 0 usft

Wellbore						VH - Job #32K11111122					
Magnetics		Model Name		Sample Date		Declination (°)		Dip Angle (°)		Field Strength (nT)	
		IGRF2010		11/16/2011		7 69		60 58		48,866	

Design:	VH - Job #32K11111122			
Audit Notes:				
Version:	1 0	Phase:	ACTUAL	Tie On Depth: 7,400 0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0 0	0 0	0.0	343 66

Survey Program		Date 12/29/2011		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	7,400 0	Actual (VH - Job #32K0911940)	Keeper	Keeper Gyro
7,500 0	13,150 0	Gyro (VH - Job #32K11111122)	Keeper	Keeper Gyro

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
7,400 0	2 21	276 61	7,398 9	38.2	-69 0	298 98	78 9
7,500 0	2 01	270 09	7,498 8	38 5	-72 7	297 88	82 3
7,525 0	2 16	274 24	7,523 8	38 5	-73 6	297 61	83 1
7,550 0	3 65	289 18	7,548 8	38 8	-74 8	297 40	84 3
7,575.0	6 40	296 59	7,573 7	39 7	-76 8	297 31	86 5
7,600 0	9 67	299 61	7,598 4	41 3	-79 9	297 36	90 0
7,625 0	13 26	301 75	7,622 9	43 9	-84 2	297 54	94 9
7,650 0	16 55	302 39	7,647 1	47 3	-89 6	297.83	101 3
7,675 0	18 89	302 62	7,670 9	51 4	-96.0	298.15	108 9
7,700.0	20 49	302 68	7,694.4	55 9	-103.1	298 48	117 3
7,725 0	22 23	303 31	7,717 7	60 9	-110 8	298.80	126.4

Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well Serene Sisters 25 Federal #4H
Project:	Tamano	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	Serene Sisters 25 Federal #4H	North Reference:	Grid
Wellbore:	VH - Job #32K11111122	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K11111122	Database:	EDM-Regulatory

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
7,750.0	24.04	302.78	7,740.7	66.3	-119.0	299.11	136.2
7,775.0	25.99	302.65	7,763.3	72.0	-127.9	299.37	146.8
7,800.0	27.91	302.88	7,785.6	78.1	-137.4	299.61	158.1
7,825.0	29.19	302.66	7,807.6	84.6	-147.5	299.83	170.0
7,850.0	29.87	302.11	7,829.3	91.2	-157.9	300.00	182.3
7,875.0	30.61	301.17	7,850.9	97.8	-168.6	300.11	194.9
7,900.0	31.40	300.12	7,872.4	104.3	-179.7	300.14	207.8
7,925.0	31.75	299.13	7,893.7	110.8	-191.1	300.11	220.9
7,950.0	32.99	297.32	7,914.8	117.1	-202.9	300.00	234.2
7,975.0	35.09	295.58	7,935.5	123.4	-215.4	299.80	248.2
8,000.0	37.92	294.64	7,955.6	129.7	-228.8	299.54	263.0
8,025.0	40.89	294.02	7,974.9	136.2	-243.3	299.24	278.8
8,050.0	43.87	294.30	7,993.4	143.1	-258.7	298.95	295.6
8,075.0	46.56	295.36	8,011.0	150.6	-274.8	298.72	313.3
8,100.0	48.39	296.25	8,027.9	158.6	-291.4	298.56	331.7
8,125.0	50.33	297.55	8,044.2	167.2	-308.3	298.47	350.7
8,150.0	52.50	298.93	8,059.8	176.4	-325.5	298.46	370.2
8,175.0	55.21	299.52	8,074.5	186.3	-343.1	298.50	390.4
8,200.0	57.99	299.72	8,088.3	196.6	-361.3	298.55	411.3
8,225.0	61.33	299.81	8,100.9	207.3	-380.0	298.61	432.8
8,250.0	64.53	299.85	8,112.3	218.4	-399.3	298.67	455.1
8,275.0	66.87	299.58	8,122.5	229.7	-419.1	298.72	477.9
8,300.0	69.30	299.27	8,131.9	241.0	-439.3	298.76	501.1
8,325.0	71.87	299.07	8,140.2	252.5	-459.9	298.77	524.6
8,350.0	74.07	298.68	8,147.5	264.1	-480.8	298.78	548.5
8,375.0	75.66	298.09	8,154.0	275.6	-502.0	298.76	572.7
8,400.0	77.64	297.79	8,159.8	286.9	-523.5	298.73	597.0
8,425.0	80.32	298.17	8,164.6	298.5	-545.2	298.70	621.5
8,450.0	83.58	298.98	8,168.1	310.3	-566.9	298.69	646.3
8,475.0	87.89	299.59	8,169.9	322.5	-588.7	298.72	671.2
8,500.0	90.99	300.29	8,170.2	335.0	-610.3	298.76	696.2
8,525.0	92.36	300.80	8,169.5	347.7	-631.8	298.82	721.2
8,550.0	92.52	300.72	8,168.4	360.4	-653.3	298.89	746.1
8,575.0	91.82	299.25	8,167.4	372.9	-674.9	298.92	771.1
8,600.0	91.67	297.96	8,166.7	384.9	-696.9	298.91	796.1
8,625.0	91.19	297.57	8,166.1	396.5	-719.0	298.88	821.1
8,650.0	90.99	297.79	8,165.6	408.1	-741.1	298.84	846.1
8,675.0	91.10	299.34	8,165.1	420.1	-763.1	298.83	871.1
8,700.0	91.03	301.05	8,164.7	432.7	-784.7	298.87	896.1
8,725.0	91.31	301.56	8,164.2	445.7	-806.0	298.94	921.0
8,750.0	91.62	301.57	8,163.5	458.7	-827.3	299.01	946.0
8,775.0	91.68	302.91	8,162.8	472.1	-848.5	299.09	970.9
8,800.0	92.43	304.20	8,161.9	485.9	-869.3	299.20	995.9
8,825.0	92.77	304.24	8,160.8	499.9	-889.9	299.33	1,020.7

Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well Serene Sisters 25 Federal #4H
Project:	Tamano	TVD Reference:	WELL @ 0 0usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0 0usft (Original Well Elev)
Well:	Serene Sisters 25 Federal #4H	North Reference:	Grid
Wellbore:	VH - Job #32K11111122	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K11111122	Database:	EDM-Regulatory

Survey								
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)	
8,850 0	92 72	304 98	8,159.6	514.1	-910 5	299 45	1,045 6	
8,875 0	91 87	307 14	8,158.6	528 8	-930 7	299 60	1,070 4	
8,900.0	91 30	309 03	8,157 9	544 2	-950.3	299 80	1,095.1	
8,925 0	91.10	309 08	8,157.4	560 0	-969.8	300 00	1,119 8	
8,950 0	91 29	310 14	8,156 8	575 9	-989 0	300 21	1,144 5	
8,975 0	91 27	312 38	8,156 3	592 4	-1,007 8	300 45	1,169 0	
9,000 0	90 84	313.36	8,155 8	609 4	-1,026 1	300 71	1,193 4	
9,025 0	90.61	313 19	8,155 5	626 5	-1,044 3	300 96	1,217 8	
9,050 0	89 82	315 15	8,155 4	643.9	-1,062 3	301 22	1,242 2	
9,075 0	89.81	317 19	8,155.5	662 0	-1,079 6	301 52	1,266 4	
9,100 0	89.35	317.68	8,155.7	680 4	-1,096 5	301 82	1,290 4	
9,125 0	89.01	317 90	8,156.0	698 9	-1,113.3	302 12	1,314 5	
9,150 0	89 20	319.78	8,156 4	717 7	-1,129 7	302 43	1,338 4	
9,175 0	89 51	321 74	8,156 7	737 1	-1,145 5	302 76	1,362 2	
9,200 0	90 12	322 18	8,156 8	756 8	-1,160 9	303 10	1,385 8	
9,225 0	90.35	322 74	8,156 7	776 6	-1,176 2	303 44	1,409 4	
9,250 0	91 02	324 39	8,156.4	796 7	-1,191 0	303 78	1,432 9	
9,275 0	91 44	326 53	8,155 8	817 3	-1,205 2	304 14	1,456 2	
9,300 0	91 36	327 56	8,155 2	838 3	-1,218 8	304 52	1,479 2	
9,325 0	91.55	328 52	8,154 6	859 5	-1,232 0	304 90	1,502 2	
9,350 0	91 88	330 74	8,153 8	881 0	-1,244 6	305 29	1,524 9	
9,375 0	91 36	333 22	8,153 1	903 1	-1,256 4	305 71	1,547.3	
9,400 0	91 66	334 39	8,152 5	925 5	-1,267 4	306 14	1,569 4	
9,425 0	91.58	334 79	8,151.8	948 1	-1,278 1	306 57	1,591 4	
9,450 0	91.21	336 43	8,151 2	970 8	-1,288 5	307 00	1,613 3	
9,475 0	91 40	337 68	8,150 6	993 9	-1,298.2	307 44	1,635 0	
9,500 0	91 66	338 32	8,149 9	1,017 0	-1,307 6	307 88	1,656 5	
9,525 0	92 33	340 39	8,149 1	1,040 4	-1,316 4	308 32	1,677 9	
9,550 0	92 48	343 09	8,148.0	1,064 1	-1,324 2	308 79	1,698 8	
9,575 0	92 58	344 35	8,146.9	1,088 1	-1,331.2	309 26	1,719 3	
9,600 0	92 22	344 59	8,145 9	1,112 2	-1,337 9	309 74	1,739 8	
9,625 0	92 43	346 38	8,144.8	1,136 4	-1,344 1	310 21	1,760 1	
9,650 0	92 87	348 78	8,143.7	1,160 7	-1,349 5	310 70	1,780 0	
9,675 0	93 28	350 65	8,142 3	1,185 3	-1,354.0	311 20	1,799 5	
9,700 0	92 55	351 78	8,141 1	1,210 0	-1,357 8	311 71	1,818.7	
9,725 0	91 35	352 52	8,140 2	1,234 7	-1,361 2	312 21	1,837 8	
9,750 0	91 42	352.67	8,139 6	1,259 5	-1,364 4	312 71	1,856 9	
9,775.0	91 64	352.49	8,139 0	1,284 3	-1,367 6	313 20	1,876 1	
9,800 0	91 44	351 25	8,138 3	1,309 0	-1,371 2	313 67	1,895 7	
9,825 0	88 88	349 74	8,138 2	1,333 7	-1,375 3	314 12	1,915 8	
9,850.0	88.05	348 99	8,138 9	1,358 2	-1,379 9	314 55	1,936 2	
9,875.0	88 33	349 06	8,139 7	1,382.8	-1,384 7	314 96	1,956 9	
9,900 0	88 49	350 36	8,140 4	1,407 4	-1,389 1	315 37	1,977 5	
9,925 0	88.95	352 08	8,140 9	1,432 1	-1,393 0	315 79	1,997 8	
9,950 0	88 58	352 45	8,141.5	1,456.8	-1,396 3	316 21	2,017.9	

Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well Serene Sisters 25 Federal #4H
Project:	Tamano	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	Serene Sisters 25 Federal #4H	North Reference:	Grid
Wellbore:	VH - Job #32K1111122	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K1111122	Database:	EDM-Regulatory

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
9,975.0	88.92	352.73	8,142.0	1,481.6	-1,399.5	316.63	2,038.1
10,000.0	89.78	355.33	8,142.3	1,506.5	-1,402.1	317.05	2,058.0
10,025.0	90.55	358.04	8,142.2	1,531.4	-1,403.6	317.49	2,077.3
10,050.0	91.28	359.65	8,141.8	1,556.4	-1,404.1	317.95	2,096.2
10,075.0	91.42	0.32	8,141.2	1,581.4	-1,404.1	318.40	2,114.8
10,100.0	90.95	0.27	8,140.7	1,606.4	-1,404.0	318.85	2,133.5
10,125.0	91.21	0.17	8,140.2	1,631.4	-1,403.9	319.29	2,152.3
10,150.0	91.62	0.15	8,139.6	1,656.4	-1,403.8	319.72	2,171.3
10,175.0	91.28	359.68	8,139.0	1,681.4	-1,403.8	320.14	2,190.4
10,200.0	90.84	359.02	8,138.5	1,706.4	-1,404.1	320.55	2,209.8
10,225.0	90.64	358.46	8,138.2	1,731.4	-1,404.7	320.95	2,229.5
10,250.0	90.78	358.59	8,137.9	1,756.4	-1,405.3	321.34	2,249.4
10,275.0	91.12	358.51	8,137.5	1,781.4	-1,406.0	321.72	2,269.3
10,300.0	91.17	358.47	8,137.0	1,806.3	-1,406.6	322.09	2,289.4
10,325.0	91.24	358.48	8,136.5	1,831.3	-1,407.3	322.46	2,309.6
10,350.0	91.33	358.80	8,135.9	1,856.3	-1,407.9	322.82	2,329.8
10,375.0	91.07	0.43	8,135.4	1,881.3	-1,408.0	323.19	2,349.9
10,400.0	91.02	1.60	8,134.9	1,906.3	-1,407.6	323.56	2,369.7
10,425.0	91.01	1.99	8,134.5	1,931.3	-1,406.8	323.93	2,389.3
10,450.0	91.35	1.93	8,134.0	1,956.3	-1,406.0	324.30	2,409.1
10,475.0	91.54	1.97	8,133.3	1,981.2	-1,405.1	324.66	2,428.9
10,500.0	91.43	1.91	8,132.7	2,006.2	-1,404.3	325.01	2,448.8
10,525.0	91.40	1.81	8,132.1	2,031.2	-1,403.5	325.36	2,468.9
10,550.0	91.16	1.80	8,131.5	2,056.2	-1,402.7	325.70	2,489.0
10,575.0	91.22	1.81	8,131.0	2,081.2	-1,401.9	326.04	2,509.3
10,600.0	90.87	1.72	8,130.5	2,106.1	-1,401.1	326.37	2,529.6
10,625.0	91.19	1.26	8,130.1	2,131.1	-1,400.5	326.69	2,550.1
10,650.0	91.38	0.86	8,129.5	2,156.1	-1,400.0	327.00	2,570.8
10,675.0	91.15	0.76	8,129.0	2,181.1	-1,399.6	327.31	2,591.6
10,700.0	91.14	0.64	8,128.5	2,206.1	-1,399.3	327.61	2,612.5
10,725.0	91.29	0.83	8,127.9	2,231.1	-1,399.0	327.91	2,633.4
10,750.0	91.55	0.75	8,127.3	2,256.1	-1,398.7	328.20	2,654.5
10,775.0	91.01	0.74	8,126.8	2,281.1	-1,398.3	328.49	2,675.6
10,800.0	90.87	0.94	8,126.4	2,306.1	-1,398.0	328.78	2,696.7
10,825.0	91.24	1.11	8,125.9	2,331.1	-1,397.5	329.06	2,717.9
10,850.0	91.45	1.27	8,125.3	2,356.1	-1,397.0	329.33	2,739.1
10,875.0	91.43	1.39	8,124.7	2,381.0	-1,396.4	329.61	2,760.3
10,900.0	91.23	1.29	8,124.1	2,406.0	-1,395.8	329.88	2,781.6
10,925.0	91.56	1.13	8,123.5	2,431.0	-1,395.3	330.15	2,803.0
10,950.0	91.38	0.91	8,122.8	2,456.0	-1,394.9	330.41	2,824.5
10,975.0	91.62	1.14	8,122.2	2,481.0	-1,394.4	330.66	2,846.0
11,000.0	91.31	1.20	8,121.6	2,506.0	-1,393.9	330.92	2,867.6
11,025.0	91.26	1.17	8,121.0	2,531.0	-1,393.4	331.17	2,889.2
11,050.0	90.66	0.98	8,120.6	2,556.0	-1,392.9	331.41	2,910.9

Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well Serene Sisters 25 Federal #4H
Project:	Tamano	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	Serene Sisters 25 Federal #4H	North Reference:	Grid
Wellbore:	VH - Job #32K1111122	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K1111122	Database:	EDM-Regulatory

Survey								
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)	
11,075.0	90.88	1.01	8,120.2	2,580.9	-1,392.5	331.65	2,932.6	
11,100.0	91.29	0.78	8,119.8	2,605.9	-1,392.1	331.89	2,954.5	
11,125.0	90.40	0.66	8,119.4	2,630.9	-1,391.8	332.12	2,976.4	
11,150.0	89.96	0.43	8,119.3	2,655.9	-1,391.6	332.35	2,998.4	
11,175.0	89.92	0.13	8,119.3	2,680.9	-1,391.4	332.57	3,020.5	
11,200.0	89.62	359.49	8,119.4	2,705.9	-1,391.5	332.79	3,042.8	
11,225.0	88.63	358.85	8,119.8	2,730.9	-1,391.9	332.99	3,065.2	
11,250.0	88.56	358.59	8,120.4	2,755.9	-1,392.4	333.19	3,087.7	
11,275.0	88.46	358.52	8,121.1	2,780.9	-1,393.1	333.39	3,110.3	
11,300.0	88.45	358.54	8,121.8	2,805.9	-1,393.7	333.59	3,132.9	
11,325.0	88.89	358.78	8,122.3	2,830.9	-1,394.3	333.78	3,155.6	
11,350.0	88.89	358.68	8,122.8	2,855.9	-1,394.8	333.97	3,178.3	
11,375.0	89.24	358.73	8,123.2	2,880.8	-1,395.4	334.16	3,201.0	
11,400.0	89.24	359.17	8,123.6	2,905.8	-1,395.9	334.34	3,223.7	
11,425.0	89.63	359.67	8,123.8	2,930.8	-1,396.1	334.53	3,246.4	
11,450.0	90.35	359.86	8,123.8	2,955.8	-1,396.2	334.72	3,269.0	
11,475.0	91.06	359.93	8,123.5	2,980.8	-1,396.3	334.90	3,291.6	
11,500.0	90.78	359.97	8,123.1	3,005.8	-1,396.3	335.08	3,314.3	
11,525.0	90.73	0.00	8,122.8	3,030.8	-1,396.3	335.26	3,337.0	
11,550.0	91.07	0.08	8,122.4	3,055.8	-1,396.3	335.44	3,359.7	
11,575.0	91.16	0.01	8,121.9	3,080.8	-1,396.3	335.62	3,382.5	
11,600.0	91.18	0.00	8,121.4	3,105.8	-1,396.3	335.79	3,405.2	
11,625.0	90.86	0.00	8,120.9	3,130.8	-1,396.3	335.96	3,428.0	
11,650.0	91.45	0.09	8,120.4	3,155.8	-1,396.2	336.13	3,450.9	
11,675.0	91.98	0.16	8,119.7	3,180.8	-1,396.2	336.30	3,473.7	
11,700.0	92.53	0.32	8,118.7	3,205.8	-1,396.1	336.47	3,496.6	
11,725.0	92.21	0.34	8,117.7	3,230.8	-1,395.9	336.63	3,519.4	
11,750.0	92.52	0.22	8,116.6	3,255.7	-1,395.8	336.79	3,542.3	
11,775.0	92.36	0.48	8,115.6	3,280.7	-1,395.7	336.95	3,565.2	
11,800.0	90.54	0.80	8,114.9	3,305.7	-1,395.4	337.11	3,588.1	
11,825.0	90.28	1.00	8,114.8	3,330.7	-1,395.0	337.27	3,611.0	
11,850.0	90.54	0.92	8,114.6	3,355.7	-1,394.6	337.43	3,633.9	
11,875.0	90.26	0.92	8,114.4	3,380.7	-1,394.2	337.59	3,656.9	
11,900.0	90.79	0.98	8,114.2	3,405.7	-1,393.8	337.74	3,679.8	
11,925.0	91.16	0.99	8,113.8	3,430.7	-1,393.3	337.90	3,702.8	
11,950.0	91.62	1.08	8,113.2	3,455.7	-1,392.9	338.05	3,725.8	
11,975.0	90.91	1.09	8,112.6	3,480.6	-1,392.4	338.20	3,748.8	
12,000.0	91.04	1.18	8,112.2	3,505.6	-1,391.9	338.34	3,771.9	
12,025.0	91.88	1.15	8,111.5	3,530.6	-1,391.4	338.49	3,794.9	
12,050.0	91.92	1.52	8,110.7	3,555.6	-1,390.8	338.64	3,817.9	
12,075.0	91.99	1.86	8,109.9	3,580.6	-1,390.1	338.78	3,840.9	
12,100.0	92.18	1.97	8,108.9	3,605.6	-1,389.2	338.93	3,863.9	
12,125.0	91.34	1.27	8,108.2	3,630.5	-1,388.5	339.07	3,887.0	
12,150.0	89.04	359.83	8,108.1	3,655.5	-1,388.3	339.20	3,910.3	

Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well Serene Sisters 25 Federal #4H
Project:	Tamano	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	Serene Sisters 25 Federal #4H	North Reference:	Grid
Wellbore:	VH - Job #32K11111122	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K11111122	Database:	EDM-Regulatory

Survey								
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)	
12,175.0	88.72	358.88	8,108.6	3,680.5	-1,388.6	339.33	3,933.7	
12,200.0	88.63	358.40	8,109.2	3,705.5	-1,389.2	339.45	3,957.3	
12,225.0	88.07	357.34	8,109.9	3,730.5	-1,390.1	339.56	3,981.1	
12,250.0	87.97	356.49	8,110.7	3,755.4	-1,391.4	339.67	4,004.9	
12,275.0	88.05	356.33	8,111.6	3,780.4	-1,393.0	339.77	4,028.8	
12,300.0	88.57	356.54	8,112.4	3,805.3	-1,394.6	339.87	4,052.8	
12,325.0	88.20	356.81	8,113.1	3,830.2	-1,396.0	339.97	4,076.7	
12,350.0	88.34	356.86	8,113.8	3,855.2	-1,397.4	340.08	4,100.6	
12,375.0	88.45	357.00	8,114.5	3,880.2	-1,398.7	340.18	4,124.6	
12,400.0	88.28	357.65	8,115.2	3,905.1	-1,399.9	340.28	4,148.5	
12,425.0	88.18	358.10	8,116.0	3,930.1	-1,400.8	340.38	4,172.3	
12,450.0	87.97	358.39	8,116.8	3,955.1	-1,401.6	340.49	4,196.1	
12,475.0	88.12	358.52	8,117.7	3,980.0	-1,402.3	340.59	4,219.8	
12,500.0	88.27	359.04	8,118.5	4,005.0	-1,402.8	340.70	4,243.6	
12,525.0	88.17	359.98	8,119.3	4,030.0	-1,403.0	340.80	4,267.2	
12,550.0	88.66	0.31	8,119.9	4,055.0	-1,402.9	340.92	4,290.8	
12,575.0	88.16	0.42	8,120.6	4,080.0	-1,402.8	341.03	4,314.4	
12,600.0	88.44	0.48	8,121.4	4,105.0	-1,402.6	341.14	4,338.0	
12,625.0	88.91	0.64	8,122.0	4,130.0	-1,402.3	341.24	4,361.6	
12,650.0	89.00	0.80	8,122.4	4,155.0	-1,402.0	341.35	4,385.1	
12,675.0	88.82	0.98	8,122.9	4,180.0	-1,401.6	341.46	4,408.7	
12,700.0	88.86	1.05	8,123.4	4,204.9	-1,401.2	341.57	4,432.3	
12,725.0	88.97	1.19	8,123.9	4,229.9	-1,400.7	341.68	4,455.8	
12,750.0	89.30	1.39	8,124.2	4,254.9	-1,400.1	341.79	4,479.4	
12,775.0	89.36	1.58	8,124.5	4,279.9	-1,399.5	341.89	4,502.9	
12,800.0	89.43	1.64	8,124.8	4,304.9	-1,398.8	342.00	4,526.5	
12,825.0	89.36	1.81	8,125.1	4,329.9	-1,398.0	342.11	4,550.0	
12,850.0	89.41	1.93	8,125.3	4,354.9	-1,397.2	342.21	4,573.5	
12,875.0	89.76	1.88	8,125.5	4,379.9	-1,396.4	342.32	4,597.1	
12,900.0	89.84	2.00	8,125.6	4,404.8	-1,395.6	342.42	4,620.6	
12,925.0	90.08	2.33	8,125.6	4,429.8	-1,394.6	342.52	4,644.2	
12,950.0	89.83	2.57	8,125.6	4,454.8	-1,393.5	342.63	4,667.7	
12,975.0	90.02	2.65	8,125.7	4,479.8	-1,392.4	342.73	4,691.2	
13,000.0	90.33	2.89	8,125.6	4,504.8	-1,391.2	342.84	4,714.7	
13,025.0	90.46	3.11	8,125.4	4,529.7	-1,389.9	342.94	4,738.2	
13,050.0	90.23	3.11	8,125.3	4,554.7	-1,388.5	343.05	4,761.6	
13,075.0	90.40	3.20	8,125.1	4,579.6	-1,387.2	343.15	4,785.1	
13,100.0	90.53	3.39	8,124.9	4,604.6	-1,385.7	343.25	4,808.6	
13,125.0	91.17	3.54	8,124.6	4,629.6	-1,384.2	343.35	4,832.1	
13,150.0	91.51	3.66	8,124.0	4,654.5	-1,382.6	343.46	4,855.5	



Scientific Drilling
Directional Drilling Operations

Project: Tamano
Eddy County, NM
Well: Serene Sisters 25 Federal #4H
Wellbore: VH - Job #32K1111122
Design: VH - Job #32K1111122



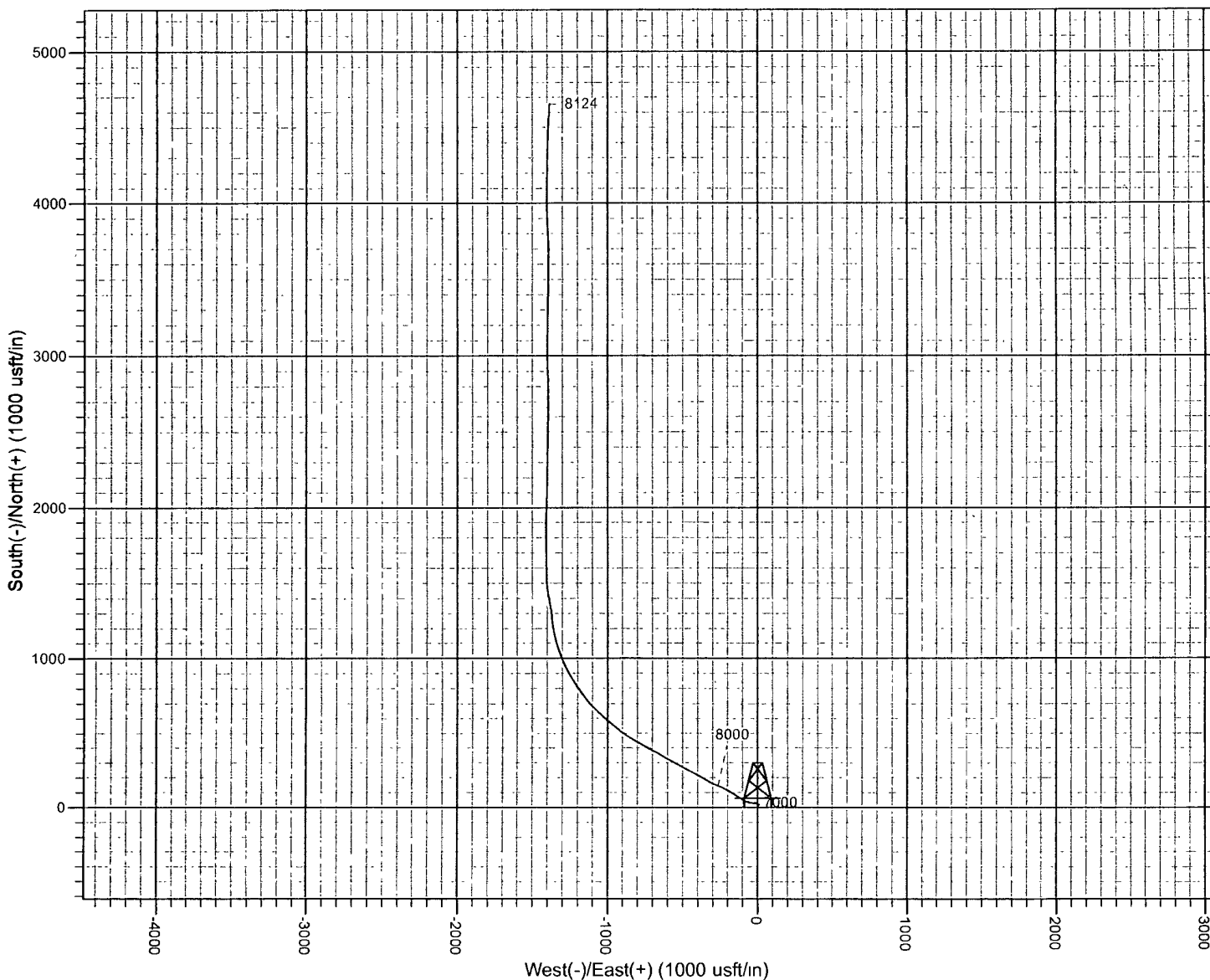
Azimuths to Grid North
True North -0 27°
Magnetic North 7 42°

Magnetic Field
Strength 48866 0snT
Dip Angle. 60 58°
Date. 11/16/2011
Model IGRF2010

WELL DETAILS: Serene Sisters 25 Federal #4H
WELL @ 0.0usft (Original Well Elev)

Ground Level: 0.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	623082.06	697423.46	32° 42' 42.720 N	.103° 49' 33.073 W	



PROJECT DETAILS: Tamano
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level

SITE DETAILS: Eddy County, NM
Site Centre Latitude: 32° 43' 31.099 N
Longitude: 103° 49' 3.506 W
Positional Uncertainty: 0.0
Convergence: 0.28
Local North: Grid

Pathfinder

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



September 19, 2011

Devon Energy
20 N. Broadway
Oklahoma City, OK

RE: Devon Energy
Serene Sisters 25 Federal #4H
API: 30-015-38312
Eddy County, NM
RIG: H&P 300
FIELD: Tamano; Bone Spring
PES FILE NO.: 700003843-WT-WT

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 "Steve Bibb".

STEVE BIBB
M/LWD Service Coordinator
PathFinder Energy Services

ML:sh



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)887-1647
Fax (432)887-1544



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

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

Page 01/06
Tie-in Date: 10/01/2011
Date Completed: 10/10/2011

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)		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

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)
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

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)
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

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)
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

PathFinder Energy Services, Inc.

Survey Report

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

Page 05/06

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)
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

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 (dg/100ft)
(ft)	(deg)	(deg)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(deg)	(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

Page 07/06

** 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
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

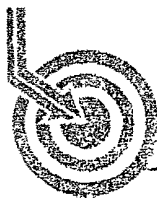
KICKOFF DEPTH:	7602'	TOTAL DEPTH:	13352 9'
KICKOFF ANGLE:	0	MAX ANGLE:	91

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



Survey Report

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.