VAUGHN ENERGY SERVICES
A GYRO TECHNOLOGIES INC. COMPANY

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

15-39866

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April 10, 2013

Devon Energy Production Co., LP
333 West Sheridan Ave
Oklahoma City, Oklahoma 73102-5010

Attn: Patti Riechers

Re: **Snapping 10 Federal No 003H**

Please find enclosed a copy of the survey from 0' to 10,285.02' ran on the above referenced well.

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

Sincerely,

Keith Havelka
Operations

STATE OF TEXAS §
§
COUNTY OF NUECES §

This instrument was acknowledged before me on the 10th day of April A.D., 2013, by Keith Havelka.

Laura Ballew
Notary Public, State of Texas

LAURA BALLEW
Notary Public, State of Texas
My Commission Expires
January 28, 2014

Company: Devon Energy Production Co., LP
Lease/Well: Snapping 10 Federal/No 003H

Rig Name: Cactus 105
State/County: New Mexico/Eddy
Latitude: 32.05, Longitude: -103.77
GRID North is 0.30 Degrees East of True North
VS-Azi: 0.00 Degrees

Depth Reference : RKB= 28'

DRILLOG MS GYRO SURVEY CALCULATIONS
Filename: gyro survey.ut
Minimum Curvature Method
Report Date/Time: 4/10/2013 / 10:57

Vaughn Energy Services
Midland, Texas
432-563-5444
Surveyor: Tim Dillon
Snapping 10 Federal No 003H / API 30-015-39866

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
16.38	0.69	130.33	16.38	-0.06	0.07	-0.06	0.10	130.33	4.20
111.46	0.77	125.65	111.45	-0.81	1.03	-0.81	1.31	128.04	0.11
206.54	0.90	121.86	206.52	-1.57	2.19	-1.57	2.69	125.76	0.14
301.62	0.99	120.04	301.59	-2.38	3.53	-2.38	4.26	123.98	0.10
396.70	1.73	128.48	396.64	-3.68	5.36	-3.68	6.51	124.47	0.80
491.78	2.25	125.17	491.66	-5.65	8.01	-5.65	9.80	125.19	0.56
586.86	2.47	130.16	586.66	-8.05	11.10	-8.05	13.71	125.93	0.32
681.94	2.52	126.97	681.65	-10.62	14.34	-10.62	17.85	126.53	0.15
777.02	2.63	134.67	776.64	-13.41	17.56	-13.41	22.09	127.38	0.38
872.10	2.33	145.22	871.63	-16.54	20.21	-16.54	26.12	129.29	0.57
967.18	2.16	142.67	966.64	-19.55	22.40	-19.55	29.74	131.11	0.21
1062.26	1.91	134.21	1061.66	-22.08	24.62	-22.08	33.07	131.88	0.41
1157.34	1.76	145.00	1156.69	-24.37	26.59	-24.37	36.07	132.51	0.39
1252.42	1.88	153.93	1251.72	-26.97	28.11	-26.97	38.96	133.81	0.33
1347.50	1.11	173.91	1346.77	-29.28	28.90	-29.28	41.14	135.38	0.97
1442.58	0.42	209.76	1441.84	-30.50	28.82	-30.50	41.96	136.63	0.85
1537.66	0.33	223.38	1536.92	-31.01	28.46	-31.01	42.09	137.46	0.14
1632.74	0.39	235.06	1632.00	-31.39	28.00	-31.39	42.07	138.27	0.10

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1727.82	0.23	241.71	1727.07	-31.67	27.57	-31.67	41.99	138.95	0.18
1822.90	0.42	231.49	1822.15	-31.97	27.14	-31.97	41.93	139.68	0.21
1917.98	0.90	241.56	1917.23	-32.54	26.21	-32.54	41.78	141.15	0.52
2013.06	1.61	238.48	2012.28	-33.59	24.42	-33.59	41.53	143.99	0.75
2108.14	2.54	234.04	2107.30	-35.53	21.57	-35.53	41.57	148.73	0.99
2203.22	2.39	233.61	2202.29	-37.94	18.27	-37.94	42.11	154.28	0.16
2298.30	2.44	252.80	2297.29	-39.72	14.74	-39.72	42.36	159.63	0.85
2393.38	2.42	256.79	2392.28	-40.77	10.85	-40.77	42.19	165.10	0.18
2488.46	2.36	275.56	2487.28	-41.04	6.94	-41.04	41.63	170.40	0.82
2583.54	2.17	275.25	2582.29	-40.69	3.20	-40.69	40.82	175.50	0.21
2678.62	2.20	264.91	2677.30	-40.69	-0.41	-40.69	40.69	180.57	0.41
2773.70	2.06	280.64	2772.31	-40.53	-3.90	-40.53	40.72	185.49	0.63
2868.78	1.86	285.05	2867.34	-39.82	-7.07	-39.82	40.44	190.06	0.26
2963.86	1.99	292.14	2962.36	-38.79	-10.09	-38.79	40.08	194.58	0.29
3058.94	1.99	290.96	3057.39	-37.58	-13.17	-37.58	39.82	199.31	0.04
3154.02	2.34	296.14	3152.40	-36.13	-16.45	-36.13	39.70	204.48	0.42
3249.10	2.12	292.95	3247.41	-34.59	-19.81	-34.59	39.86	209.80	0.27
3344.18	1.57	297.24	3342.44	-33.31	-22.58	-33.31	40.25	214.14	0.59
3439.26	1.23	235.86	3437.49	-33.29	-24.59	-33.29	41.39	216.45	1.53
3534.34	1.71	162.36	3532.55	-35.21	-25.01	-35.21	43.19	215.38	1.89
3629.42	1.95	135.72	3627.58	-37.72	-23.45	-37.72	44.41	211.87	0.92
3724.50	3.74	137.15	3722.54	-41.15	-20.21	-41.15	45.85	206.16	1.89
3819.58	5.44	140.70	3817.31	-46.91	-15.25	-46.91	49.33	198.01	1.81
3914.66	4.28	139.79	3912.05	-53.11	-10.10	-53.11	54.06	190.77	1.21
4009.74	3.15	141.02	4006.93	-57.86	-6.16	-57.86	58.18	186.08	1.19
4104.82	2.21	128.84	4101.90	-61.04	-3.09	-61.04	61.12	182.90	1.15
4199.90	2.16	134.31	4196.91	-63.44	-0.38	-63.44	63.44	180.34	0.22
4294.98	1.94	126.11	4291.93	-65.64	2.20	-65.64	65.68	178.08	0.39
4390.06	1.46	142.48	4386.97	-67.55	4.24	-67.55	67.68	176.41	0.71
4485.14	1.76	139.55	4482.01	-69.62	5.92	-69.62	69.87	175.14	0.33
4580.22	1.55	143.13	4577.06	-71.75	7.64	-71.75	72.16	173.92	0.24
4675.30	1.49	149.73	4672.10	-73.85	9.03	-73.85	74.40	173.03	0.20
4770.38	1.48	144.40	4767.15	-75.91	10.37	-75.91	76.62	172.22	0.15
4865.46	1.36	142.19	4862.20	-77.80	11.78	-77.80	78.69	171.39	0.14
4960.54	1.20	136.70	4957.26	-79.42	13.15	-79.42	80.50	170.60	0.21
5055.62	1.36	163.28	5052.31	-81.23	14.16	-81.23	82.45	170.11	0.64
5150.70	1.16	155.16	5147.37	-83.18	14.89	-83.18	84.51	169.85	0.28
5245.78	2.23	152.41	5242.41	-85.70	16.15	-85.70	87.21	169.33	1.12
5340.86	1.03	153.68	5337.45	-88.11	17.39	-88.11	89.81	168.84	1.26

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
9144.06	1.57	159.31	9139.17	-179.63	51.55	-179.63	186.88	163.99	0.42
9239.14	1.73	170.43	9234.21	-182.26	52.25	-182.26	189.60	164.00	0.38
9334.22	1.66	171.68	9329.25	-185.04	52.69	-185.04	192.39	164.11	0.08
9429.30	1.74	176.48	9424.29	-187.83	52.98	-187.83	195.16	164.25	0.17
9524.38	1.80	178.75	9519.32	-190.76	53.10	-190.76	198.01	164.45	0.10
9619.46	2.11	146.90	9614.35	-193.71	54.09	-193.71	201.12	164.40	1.17
9714.54	2.04	122.83	9709.37	-196.09	56.46	-196.09	204.06	163.94	0.91
9809.62	1.00	98.94	9804.42	-197.14	58.71	-197.14	205.70	163.42	1.26
9904.70	0.75	96.66	9899.49	-197.34	60.15	-197.34	206.30	163.05	0.27
9999.78	0.52	133.56	9994.56	-197.71	61.07	-197.71	206.93	162.83	0.48
10094.86	0.64	161.17	10089.64	-198.51	61.56	-198.51	207.84	162.77	0.32
10189.94	0.69	156.14	10184.71	-199.54	61.96	-199.54	208.94	162.75	0.08
10285.02	1.24	173.30	10279.78	-201.08	62.31	-201.08	210.52	162.78	0.65

DEVON ENERGY

Project: Eddy County, NM (NAD-83)
Site: Snapping
Well: 10 Federal 3H
Wellbore: ST01
Design: ST01

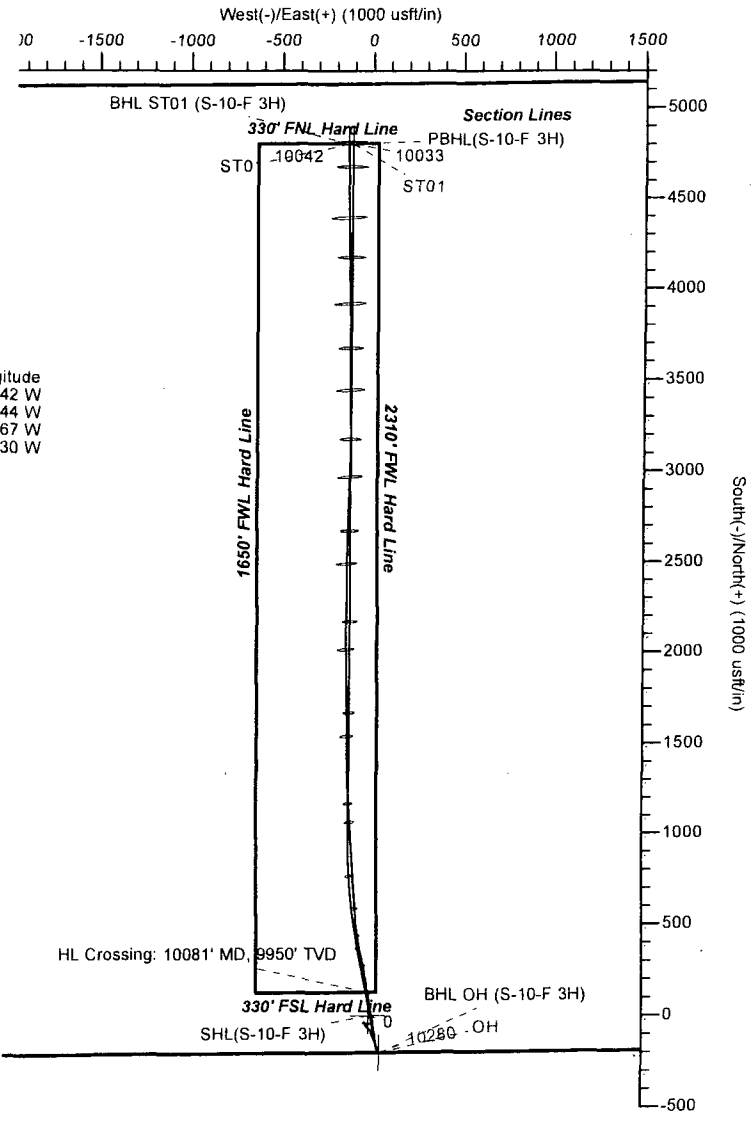
Azimuths to Grid North
True North: -0.30°
Magnetic North: 7.14°

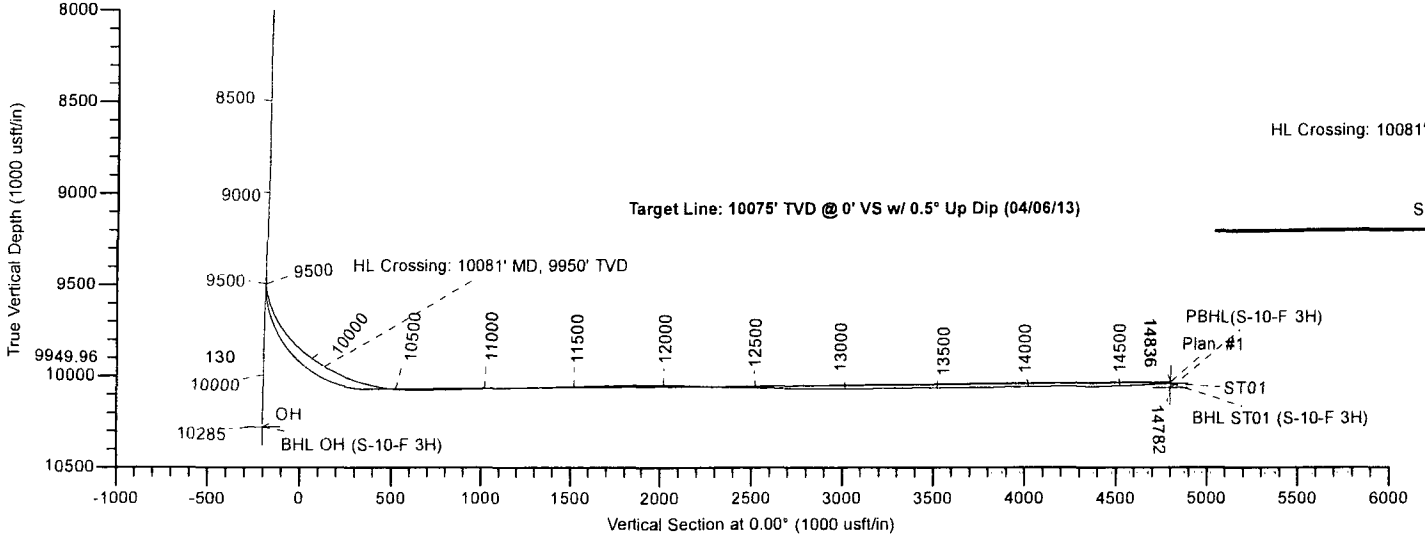
Magnetic Field
Strength: 48310.8snT
Dip Angle: 59.95°
Date: 04/06/2013
Model: IGRF2010

devon

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL(S-10-F 3H)	0.00	0.00	0.00	382635.86	716691.80	32° 3' 2.457 N	103° 46' 2.442 W
BHL ST01 (S-10-F 3H)	10042.41	4800.00	-137.22	387435.86	716554.58	32° 3' 49.964 N	103° 46' 3.744 W
PBHL(S-10-F 3H)	10065.00	4800.46	-113.40	387436.32	716578.40	32° 3' 49.967 N	103° 46' 3.467 W
BHL OH (S-10-F 3H)	10279.77	-201.17	62.33	382434.69	716754.13	32° 3' 0.463 N	103° 46' 1.730 W





LEAM Drilling Systems LLC

LEAM DRILLING SYSTEMS LLC
2010 East Davis, Conroe, Texas 77301
Phone: 936/756-7577, Fax 936/756-7595

Design: ST01 (10 Federal 3H/ST01)
Snapping
Created By: Heber Claros Date: 14:40, September 19 2013
Date: _____
Approved: _____ Date: _____

Leam Drilling Systems LLC

Survey Report

Company:	DEVON ENERGY	**Local Co-ordinate Reference:**	Well 10 Federal 3H
Project:	Eddy County, NM (NAD-83)	**TVD Reference:**	GE 3240' + KB 28' @ 3268.00usft (Cactus 105)
Site:	Snapping	**MD Reference:**	GE 3240' + KB 28' @ 3268.00usft (Cactus 105)
Well:	10 Federal 3H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH	**Database:**	EDM 5000.1 Single User Db

Project Eddy County, NM (NAD-83)

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

Site Snapping

Site Position:		**Northing:**	382,635.86 usft	**Latitude:**	32° 3' 2.457 N
From:	Map	**Easting:**	716,691.80 usft	**Longitude:**	103° 46' 2.442 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.30 °

Well 10 Federal 3H

Well Position	**+N/-S**	0.00 usft	**Northing:**	382,635.86 usft	**Latitude:**	32° 3' 2.457 N
	+E/-W	0.00 usft	**Easting:**	716,691.80 usft	**Longitude:**	103° 46' 2.442 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,240.00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	03/19/13	7.45	59.95	48,316

Design OH

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	0.00

Survey Program **Date** 04/06/13

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
16.38	10,285.02	Survey #1 (OH)	Gyroscope	Gyroscope

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16.38	0.69	130.33	16.38	-0.06	0.08	-0.06	4.21	4.21	0.00
111.46	0.77	125.65	111.45	-0.81	1.03	-0.81	0.10	0.08	-4.92
206.54	0.90	121.86	206.52	-1.57	2.18	-1.57	0.15	0.14	-3.99
301.62	0.99	120.04	301.59	-2.38	3.53	-2.38	0.10	0.09	-1.91
396.70	1.73	128.48	396.64	-3.68	5.36	-3.68	0.80	0.78	8.88
491.78	2.25	125.17	491.66	-5.65	8.01	-5.65	0.56	0.55	-3.48
586.86	2.47	130.16	586.66	-8.05	11.10	-8.05	0.32	0.23	5.25
681.94	2.52	126.97	681.65	-10.63	14.34	-10.63	0.16	0.05	-3.36
777.02	2.63	134.67	776.64	-13.42	17.56	-13.42	0.38	0.12	8.10

Leam Drilling Systems LLC

Survey Report

Company:	DEVON ENERGY	**Local Co-ordinate Reference:**	Well 10 Federal 3H
Project:	Eddy County, NM (NAD-83)	**TVD Reference:**	GE 3240' + KB 28' @ 3268.00usft (Cactus 105)
Site:	Snapping	**MD Reference:**	GE 3240' + KB 28' @ 3268.00usft (Cactus 105)
Well:	10 Federal 3H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH	**Database:**	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
872.10	2.33	145.22	871.63	-16.54	20.22	-16.54	0.57	-0.32	11.10
967.18	2.16	142.67	966.64	-19.55	22.40	-19.55	0.21	-0.18	-2.68
1,062.26	1.91	134.21	1,061.66	-22.08	24.63	-22.08	0.41	-0.26	-8.90
1,157.34	1.76	145.00	1,156.69	-24.38	26.60	-24.38	0.40	-0.16	11.35
1,252.42	1.88	153.93	1,251.72	-26.98	28.12	-26.98	0.32	0.13	9.39
1,347.50	1.11	173.91	1,346.77	-29.29	28.91	-29.29	0.97	-0.81	21.01
1,442.58	0.42	209.76	1,441.84	-30.51	28.83	-30.51	0.85	-0.73	37.71
1,537.66	0.33	223.38	1,536.92	-31.01	28.47	-31.01	0.13	-0.09	14.32
1,632.74	0.39	235.06	1,631.99	-31.40	28.02	-31.40	0.10	0.06	12.28
1,727.82	0.23	241.71	1,727.07	-31.67	27.58	-31.67	0.17	-0.17	6.99
1,822.90	0.42	231.49	1,822.15	-31.98	27.14	-31.98	0.21	0.20	-10.75
1,917.98	0.90	241.56	1,917.23	-32.55	26.21	-32.55	0.52	0.50	10.59
2,013.06	1.61	238.48	2,012.28	-33.61	24.42	-33.61	0.75	0.75	-3.24
2,108.14	2.54	234.04	2,107.30	-35.54	21.57	-35.54	0.99	0.98	-4.67
2,203.22	2.39	233.61	2,202.29	-37.96	18.27	-37.96	0.16	-0.16	-0.45
2,298.30	2.44	252.80	2,297.29	-39.73	14.74	-39.73	0.85	0.05	20.18
2,393.38	2.42	256.79	2,392.28	-40.79	10.86	-40.79	0.18	-0.02	4.20
2,488.46	2.36	275.56	2,487.28	-41.06	6.95	-41.06	0.82	-0.06	19.74
2,583.54	2.17	275.25	2,582.29	-40.70	3.21	-40.70	0.20	-0.20	-0.33
2,678.62	2.20	264.91	2,677.30	-40.70	-0.40	-40.70	0.42	0.03	-10.88
2,773.70	2.06	280.64	2,772.31	-40.55	-3.90	-40.55	0.63	-0.15	16.54
2,868.78	1.86	285.05	2,867.34	-39.83	-7.06	-39.83	0.26	-0.21	4.64
2,963.86	1.99	292.14	2,962.36	-38.81	-10.08	-38.81	0.29	0.14	7.46
3,058.94	1.99	290.96	3,057.39	-37.60	-13.15	-37.60	0.04	0.00	-1.24
3,154.02	2.34	296.14	3,152.40	-36.15	-16.44	-36.15	0.42	0.37	5.45
3,249.10	2.12	292.95	3,247.41	-34.61	-19.80	-34.61	0.27	-0.23	-3.36
3,344.18	1.57	297.24	3,342.44	-33.33	-22.58	-33.33	0.60	-0.58	4.51
3,439.26	1.23	235.86	3,437.49	-33.30	-24.58	-33.30	1.53	-0.36	-64.56
3,534.34	1.71	162.36	3,532.55	-35.23	-25.00	-35.23	1.89	0.50	-77.30
3,629.42	1.95	135.72	3,627.58	-37.74	-23.44	-37.74	0.92	0.25	-28.02
3,724.50	3.74	137.15	3,722.54	-41.17	-20.20	-41.17	1.88	1.88	1.50
3,819.58	5.44	140.70	3,817.31	-46.93	-15.23	-46.93	1.81	1.79	3.73
3,914.66	4.28	139.79	3,912.05	-53.13	-10.09	-53.13	1.22	-1.22	-0.96
4,009.74	3.15	141.02	4,006.93	-57.87	-6.15	-57.87	1.19	-1.19	1.29
4,104.82	2.21	128.84	4,101.90	-61.05	-3.08	-61.05	1.15	-0.99	-12.81
4,199.90	2.16	134.31	4,196.91	-63.45	-0.37	-63.45	0.23	-0.05	5.75
4,294.98	1.94	126.11	4,291.93	-65.65	2.21	-65.65	0.39	-0.23	-8.62
4,390.06	1.46	142.48	4,386.97	-67.56	4.25	-67.56	0.71	-0.50	17.22
4,485.14	1.76	139.55	4,482.01	-69.63	5.93	-69.63	0.33	0.32	-3.08
4,580.22	1.55	143.13	4,577.06	-71.77	7.65	-71.77	0.25	-0.22	3.77
4,675.30	1.49	149.73	4,672.10	-73.87	9.05	-73.87	0.19	-0.06	6.94
4,770.38	1.48	144.40	4,767.15	-75.93	10.38	-75.93	0.15	-0.01	-5.61
4,865.46	1.36	142.19	4,862.20	-77.82	11.79	-77.82	0.14	-0.13	-2.32
4,960.54	1.20	136.70	4,957.26	-79.44	13.16	-79.44	0.21	-0.17	-5.77

Leam Drilling Systems LLC

Survey Report

Company:	DEVON ENERGY	**Local Co-ordinate Reference:**	Well 10 Federal 3H
Project:	Eddy County, NM (NAD-83)	**TVD Reference:**	GE 3240' + KB 28' @ 3268.00usft (Cactus 105)
Site:	Snapping	**MD Reference:**	GE 3240' + KB 28' @ 3268.00usft (Cactus 105)
Well:	10 Federal 3H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH	**Database:**	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,055.62	1.36	163.28	5,052.31	-81.25	14.17	-81.25	0.64	0.17	27.96
5,150.70	1.16	155.16	5,147.37	-83.20	14.90	-83.20	0.28	-0.21	-8.54
5,245.78	2.23	152.41	5,242.41	-85.71	16.16	-85.71	1.13	1.13	-2.89
5,340.86	1.03	153.68	5,337.45	-88.12	17.40	-88.12	1.26	-1.26	1.34
5,435.94	1.04	155.64	5,432.51	-89.67	18.13	-89.67	0.04	0.01	2.06
5,531.02	1.14	158.87	5,527.58	-91.34	18.83	-91.34	0.12	0.11	3.40
5,626.10	1.09	164.80	5,622.64	-93.09	19.41	-93.09	0.13	-0.05	6.24
5,721.18	1.19	176.55	5,717.70	-94.95	19.70	-94.95	0.27	0.11	12.36
5,816.26	1.23	169.37	5,812.76	-96.94	19.95	-96.94	0.16	0.04	-7.55
5,911.34	1.17	162.86	5,907.82	-98.87	20.43	-98.87	0.16	-0.06	-6.85
6,006.42	1.10	155.36	6,002.88	-100.63	21.09	-100.63	0.17	-0.07	-7.89
6,101.50	1.31	157.93	6,097.94	-102.46	21.88	-102.46	0.23	0.22	2.70
6,196.58	1.28	151.61	6,192.99	-104.41	22.79	-104.41	0.15	-0.03	-6.65
6,291.66	1.22	146.64	6,288.05	-106.19	23.86	-106.19	0.13	-0.06	-5.23
6,386.74	0.90	140.08	6,383.11	-107.60	24.89	-107.60	0.36	-0.34	-6.90
6,481.82	0.87	156.93	6,478.18	-108.84	25.65	-108.84	0.27	-0.03	17.72
6,576.90	1.00	161.31	6,573.25	-110.29	26.20	-110.29	0.16	0.14	4.61
6,671.98	1.12	171.64	6,668.31	-112.00	26.60	-112.00	0.24	0.13	10.86
6,767.06	1.37	164.64	6,763.37	-114.01	27.04	-114.01	0.31	0.26	-7.36
6,862.14	1.32	169.37	6,858.42	-116.18	27.54	-116.18	0.13	-0.05	4.97
6,957.22	1.93	145.98	6,953.47	-118.59	28.64	-118.59	0.94	0.64	-24.60
7,052.30	1.61	158.24	7,048.50	-121.15	30.03	-121.15	0.52	-0.34	12.89
7,147.38	1.80	153.56	7,143.54	-123.73	31.19	-123.73	0.25	0.20	-4.92
7,242.46	2.08	157.36	7,238.57	-126.66	32.52	-126.66	0.32	0.29	4.00
7,337.54	2.08	157.32	7,333.58	-129.85	33.85	-129.85	0.00	0.00	-0.04
7,432.62	2.57	155.98	7,428.58	-133.39	35.38	-133.39	0.52	0.52	-1.41
7,527.70	2.55	161.28	7,523.57	-137.34	36.93	-137.34	0.25	-0.02	5.57
7,622.78	2.47	166.06	7,618.56	-141.33	38.10	-141.33	0.24	-0.08	5.03
7,717.86	2.37	166.50	7,713.55	-145.23	39.05	-145.23	0.11	-0.11	0.46
7,812.94	2.39	163.07	7,808.55	-149.04	40.09	-149.04	0.15	0.02	-3.61
7,908.02	2.39	164.66	7,903.55	-152.84	41.19	-152.84	0.07	0.00	1.67
8,003.10	2.27	166.20	7,998.55	-156.58	42.17	-156.58	0.14	-0.13	1.62
8,098.18	2.00	164.67	8,093.56	-160.01	43.05	-160.01	0.29	-0.28	-1.61
8,193.26	2.07	156.54	8,188.58	-163.19	44.18	-163.19	0.31	0.07	-8.55
8,288.34	1.42	149.58	8,283.62	-165.78	45.46	-165.78	0.72	-0.68	-7.32
8,383.42	1.03	168.35	8,378.68	-167.63	46.23	-167.63	0.58	-0.41	19.74
8,478.50	1.18	118.88	8,473.74	-168.94	47.26	-168.94	0.98	0.16	-52.03
8,573.58	1.08	97.00	8,568.80	-169.52	49.00	-169.52	0.46	-0.11	-23.01
8,668.66	0.94	147.25	8,663.87	-170.29	50.31	-170.29	0.91	-0.15	52.85
8,763.74	0.97	200.72	8,758.94	-171.70	50.45	-171.70	0.90	0.03	56.24
8,858.82	1.12	171.69	8,854.01	-173.37	50.30	-173.37	0.57	0.16	-30.53
8,953.90	1.28	171.51	8,949.06	-175.34	50.59	-175.34	0.17	0.17	-0.19
9,048.98	1.27	170.14	9,044.12	-177.43	50.93	-177.43	0.03	-0.01	-1.44

Leam Drilling Systems LLC

Survey Report

Company:	DEVON ENERGY	**Local Co-ordinate Reference:**	Well 10 Federal 3H
Project:	Eddy County, NM (NAD-83)	**TVD Reference:**	GE 3240' + KB 28' @ 3268.00usft (Cactus 105)
Site:	Snapping	**MD Reference:**	GE 3240' + KB 28' @ 3268.00usft (Cactus 105)
Well:	10 Federal 3H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH	**Database:**	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,144.06	1.57	159.31	9,139.17	-179.69	51.57	-179.69	0.42	0.32	-11.39
9,239.14	1.73	170.43	9,234.21	-182.32	52.27	-182.32	0.38	0.17	11.70
9,334.22	1.66	171.68	9,329.25	-185.10	52.71	-185.10	0.08	-0.07	1.31
9,429.30	1.74	176.48	9,424.29	-187.90	52.99	-187.90	0.17	0.08	5.05
9,524.38	1.80	178.75	9,519.32	-190.83	53.11	-190.83	0.10	0.06	2.39
9,619.46	2.11	146.90	9,614.35	-193.79	54.10	-193.79	1.17	0.33	-33.50
9,714.54	2.04	122.83	9,709.37	-196.18	56.48	-196.18	0.91	-0.07	-25.32
9,809.62	1.00	98.94	9,804.42	-197.22	58.72	-197.22	1.26	-1.09	-25.13
9,904.70	0.75	96.66	9,899.49	-197.42	60.16	-197.42	0.27	-0.26	-2.40
9,999.78	0.52	133.56	9,994.56	-197.79	61.09	-197.79	0.48	-0.24	38.81
10,094.86	0.64	161.17	10,089.64	-198.59	61.58	-198.59	0.32	0.13	29.04
10,189.94	0.69	156.14	10,184.71	-199.62	61.98	-199.62	0.08	0.05	-5.29
10,285.02	1.24	173.30	10,279.78	-201.17	62.33	-201.17	0.65	0.58	18.05

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL(S-10-F 3H)	0.00	0.00	0.00	0.00	0.00	382,635.86	716,691.80	32° 3' 2.457 N	103° 46' 2.442 W
- actual wellpath hits target center									
- Point									
PBHL(S-10-F 3H)	0.00	0.00	10,065.00	4,800.46	-113.40	387,436.32	716,578.40	32° 3' 49.967 N	103° 46' 3.467 W
- actual wellpath misses target center by 5001.68usft at 10027.28usft MD (10022.06 TVD, -197.98 N, 61.26 E)									
- Point									
BHL OH (S-10-F 3H)	0.00	0.00	10,279.77	-201.17	62.33	382,434.69	716,754.13	32° 3' 0.463 N	103° 46' 1.730 W
- actual wellpath hits target center									
- Point									

Leam Drilling Systems LLC

Survey Report - Geographic

Company:	DEVON ENERGY	**Local Co-ordinate Reference:**	Well 10 Federal 3H
Project:	Eddy County, NM (NAD-83)	**TVD Reference:**	GE 3240' + KB 28' @ 3268.00usft (Cactus 105)
Site:	Snapping	**MD Reference:**	GE 3240' + KB 28' @ 3268.00usft (Cactus 105)
Well:	10 Federal 3H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH	**Database:**	EDM 5000.1 Single User Db

Project Eddy County, NM (NAD-83)

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

Site Snapping

Site Position:		**Northing:**	382,635.86 usft	**Latitude:**	32° 3' 2.457 N
From:	Map	**Easting:**	716,691.80 usft	**Longitude:**	103° 46' 2.442 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.30 °

Well 10 Federal 3H

Well Position	**+N/-S**	0.00 usft	**Northing:**	382,635.86 usft	**Latitude:**	32° 3' 2.457 N
	+E/-W	0.00 usft	**Easting:**	716,691.80 usft	**Longitude:**	103° 46' 2.442 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,240.00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	03/19/13	7.45	59.95	48,316

Design OH

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	0.00

Survey Program **Date** 04/06/13

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
16.38	10,285.02	Survey #1 (OH)	Gyroscope	Gyroscope

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	382,635.86	716,691.80	32° 3' 2.457 N	103° 46' 2.442 W
16.38	0.69	130.33	16.38	-0.06	0.08	382,635.79	716,691.87	32° 3' 2.456 N	103° 46' 2.441 W
111.46	0.77	125.65	111.45	-0.81	1.03	382,635.05	716,692.83	32° 3' 2.449 N	103° 46' 2.430 W
206.54	0.90	121.86	206.52	-1.57	2.18	382,634.29	716,693.98	32° 3' 2.441 N	103° 46' 2.417 W
301.62	0.99	120.04	301.59	-2.38	3.53	382,633.48	716,695.33	32° 3' 2.433 N	103° 46' 2.401 W
396.70	1.73	128.48	396.64	-3.68	5.36	382,632.18	716,697.16	32° 3' 2.420 N	103° 46' 2.380 W
491.78	2.25	125.17	491.66	-5.65	8.01	382,630.21	716,699.81	32° 3' 2.400 N	103° 46' 2.349 W
586.86	2.47	130.16	586.66	-8.05	11.10	382,627.81	716,702.90	32° 3' 2.376 N	103° 46' 2.314 W
681.94	2.52	126.97	681.65	-10.63	14.34	382,625.23	716,706.14	32° 3' 2.351 N	103° 46' 2.276 W
777.02	2.63	134.67	776.64	-13.42	17.56	382,622.44	716,709.36	32° 3' 2.323 N	103° 46' 2.239 W
872.10	2.33	145.22	871.63	-16.54	20.22	382,619.32	716,712.01	32° 3' 2.292 N	103° 46' 2.208 W
967.18	2.16	142.67	966.64	-19.55	22.40	382,616.31	716,714.20	32° 3' 2.262 N	103° 46' 2.183 W

Leam Drilling Systems LLC

Survey Report - Geographic

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 10 Federal 3H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3240' + KB 28' @ 3268.00usft (Cactus 105)
Site:	Snapping	MD Reference:	GE 3240' + KB 28' @ 3268.00usft (Cactus 105)
Well:	10 Federal 3H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,062.26	1.91	134.21	1,061.66	-22.08	24.63	382,613.78	716,716.42	32° 3' 2.237 N	103° 46' 2.157 W
1,157.34	1.76	145.00	1,156.69	-24.38	26.60	382,611.48	716,718.40	32° 3' 2.214 N	103° 46' 2.134 W
1,252.42	1.88	153.93	1,251.72	-26.98	28.12	382,608.88	716,719.92	32° 3' 2.188 N	103° 46' 2.117 W
1,347.50	1.11	173.91	1,346.77	-29.29	28.91	382,606.56	716,720.70	32° 3' 2.165 N	103° 46' 2.108 W
1,442.58	0.42	209.76	1,441.84	-30.51	28.83	382,605.35	716,720.63	32° 3' 2.153 N	103° 46' 2.109 W
1,537.66	0.33	223.38	1,536.92	-31.01	28.47	382,604.84	716,720.27	32° 3' 2.148 N	103° 46' 2.113 W
1,632.74	0.39	235.06	1,631.99	-31.40	28.02	382,604.46	716,719.81	32° 3' 2.144 N	103° 46' 2.118 W
1,727.82	0.23	241.71	1,727.07	-31.67	27.58	382,604.18	716,719.38	32° 3' 2.142 N	103° 46' 2.123 W
1,822.90	0.42	231.49	1,822.15	-31.98	27.14	382,603.88	716,718.94	32° 3' 2.139 N	103° 46' 2.129 W
1,917.98	0.90	241.56	1,917.23	-32.55	26.21	382,603.30	716,718.01	32° 3' 2.133 N	103° 46' 2.139 W
2,013.06	1.61	238.48	2,012.28	-33.61	24.42	382,602.25	716,716.21	32° 3' 2.123 N	103° 46' 2.160 W
2,108.14	2.54	234.04	2,107.30	-35.54	21.57	382,600.32	716,713.37	32° 3' 2.104 N	103° 46' 2.194 W
2,203.22	2.39	233.61	2,202.29	-37.96	18.27	382,597.90	716,710.07	32° 3' 2.080 N	103° 46' 2.232 W
2,298.30	2.44	252.80	2,297.29	-39.73	14.74	382,596.13	716,706.54	32° 3' 2.063 N	103° 46' 2.273 W
2,393.38	2.42	256.79	2,392.28	-40.79	10.86	382,595.07	716,702.65	32° 3' 2.052 N	103° 46' 2.318 W
2,488.46	2.36	275.56	2,487.28	-41.06	6.95	382,594.80	716,698.75	32° 3' 2.050 N	103° 46' 2.364 W
2,583.54	2.17	275.25	2,582.29	-40.70	3.21	382,595.16	716,695.01	32° 3' 2.054 N	103° 46' 2.407 W
2,678.62	2.20	264.91	2,677.30	-40.70	-0.40	382,595.16	716,691.40	32° 3' 2.054 N	103° 46' 2.449 W
2,773.70	2.06	280.64	2,772.31	-40.55	-3.90	382,595.31	716,687.90	32° 3' 2.056 N	103° 46' 2.490 W
2,868.78	1.86	285.05	2,867.34	-39.83	-7.06	382,596.03	716,684.73	32° 3' 2.063 N	103° 46' 2.527 W
2,963.86	1.99	292.14	2,962.36	-38.81	-10.08	382,597.05	716,681.71	32° 3' 2.073 N	103° 46' 2.562 W
3,058.94	1.99	290.96	3,057.39	-37.60	-13.15	382,598.26	716,678.64	32° 3' 2.085 N	103° 46' 2.597 W
3,154.02	2.34	296.14	3,152.40	-36.15	-16.44	382,599.71	716,675.36	32° 3' 2.100 N	103° 46' 2.635 W
3,249.10	2.12	292.95	3,247.41	-34.61	-19.80	382,601.25	716,672.00	32° 3' 2.115 N	103° 46' 2.674 W
3,344.18	1.57	297.24	3,342.44	-33.33	-22.58	382,602.53	716,669.22	32° 3' 2.128 N	103° 46' 2.706 W
3,439.26	1.23	235.86	3,437.49	-33.30	-24.58	382,602.56	716,667.21	32° 3' 2.128 N	103° 46' 2.730 W
3,534.34	1.71	162.36	3,532.55	-35.23	-25.00	382,600.63	716,666.80	32° 3' 2.109 N	103° 46' 2.735 W
3,629.42	1.95	135.72	3,627.58	-37.74	-23.44	382,598.12	716,668.36	32° 3' 2.084 N	103° 46' 2.717 W
3,724.50	3.74	137.15	3,722.54	-41.17	-20.20	382,594.69	716,671.60	32° 3' 2.050 N	103° 46' 2.679 W
3,819.58	5.44	140.70	3,817.31	-46.93	-15.23	382,588.93	716,676.56	32° 3' 1.993 N	103° 46' 2.622 W
3,914.66	4.28	139.79	3,912.05	-53.13	-10.09	382,582.73	716,681.71	32° 3' 1.931 N	103° 46' 2.563 W
4,009.74	3.15	141.02	4,006.93	-57.87	-6.15	382,577.99	716,685.64	32° 3' 1.884 N	103° 46' 2.517 W
4,104.82	2.21	128.84	4,101.90	-61.05	-3.08	382,574.81	716,688.71	32° 3' 1.853 N	103° 46' 2.482 W
4,199.90	2.16	134.31	4,196.91	-63.45	-0.37	382,572.41	716,691.42	32° 3' 1.829 N	103° 46' 2.450 W
4,294.98	1.94	126.11	4,291.93	-65.65	2.21	382,570.21	716,694.00	32° 3' 1.807 N	103° 46' 2.420 W
4,390.06	1.46	142.48	4,386.97	-67.56	4.25	382,568.30	716,696.04	32° 3' 1.788 N	103° 46' 2.397 W
4,485.14	1.76	139.55	4,482.01	-69.63	5.93	382,566.23	716,697.73	32° 3' 1.767 N	103° 46' 2.377 W
4,580.22	1.55	143.13	4,577.06	-71.77	7.65	382,564.09	716,699.45	32° 3' 1.746 N	103° 46' 2.358 W
4,675.30	1.49	149.73	4,672.10	-73.87	9.05	382,561.99	716,700.84	32° 3' 1.725 N	103° 46' 2.341 W
4,770.38	1.48	144.40	4,767.15	-75.93	10.38	382,559.92	716,702.18	32° 3' 1.705 N	103° 46' 2.326 W
4,865.46	1.36	142.19	4,862.20	-77.82	11.79	382,558.03	716,703.59	32° 3' 1.686 N	103° 46' 2.310 W
4,960.54	1.20	136.70	4,957.26	-79.44	13.16	382,556.42	716,704.96	32° 3' 1.670 N	103° 46' 2.294 W
5,055.62	1.36	163.28	5,052.31	-81.25	14.17	382,554.61	716,705.97	32° 3' 1.652 N	103° 46' 2.282 W
5,150.70	1.16	155.16	5,147.37	-83.20	14.90	382,552.66	716,706.70	32° 3' 1.632 N	103° 46' 2.274 W
5,245.78	2.23	152.41	5,242.41	-85.71	16.16	382,550.15	716,707.96	32° 3' 1.608 N	103° 46' 2.259 W
5,340.86	1.03	153.68	5,337.45	-88.12	17.40	382,547.74	716,709.19	32° 3' 1.584 N	103° 46' 2.245 W
5,435.94	1.04	155.64	5,432.51	-89.67	18.13	382,546.19	716,709.93	32° 3' 1.568 N	103° 46' 2.237 W
5,531.02	1.14	158.87	5,527.58	-91.34	18.83	382,544.52	716,710.62	32° 3' 1.552 N	103° 46' 2.229 W
5,626.10	1.09	164.80	5,622.64	-93.09	19.41	382,542.77	716,711.20	32° 3' 1.534 N	103° 46' 2.222 W
5,721.18	1.19	176.55	5,717.70	-94.95	19.70	382,540.91	716,711.50	32° 3' 1.516 N	103° 46' 2.219 W
5,816.26	1.23	169.37	5,812.76	-96.94	19.95	382,538.92	716,711.75	32° 3' 1.496 N	103° 46' 2.216 W
5,911.34	1.17	162.86	5,907.82	-98.87	20.43	382,536.99	716,712.22	32° 3' 1.477 N	103° 46' 2.211 W
6,006.42	1.10	155.36	6,002.88	-100.63	21.09	382,535.23	716,712.89	32° 3' 1.460 N	103° 46' 2.203 W
6,101.50	1.31	157.93	6,097.94	-102.46	21.88	382,533.39	716,713.68	32° 3' 1.441 N	103° 46' 2.194 W
6,196.58	1.28	151.61	6,192.99	-104.41	22.79	382,531.45	716,714.59	32° 3' 1.422 N	103° 46' 2.184 W

Leam Drilling Systems LLC

Survey Report - Geographic

Company:	DEVON ENERGY	**Local Co-ordinate Reference:**	Well 10 Federal 3H
Project:	Eddy County, NM (NAD-83)	**TVD Reference:**	GE 3240' + KB 28' @ 3268.00usft (Cactus 105)
Site:	Snapping	**MD Reference:**	GE 3240' + KB 28' @ 3268.00usft (Cactus 105)
Well:	10 Federal 3H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH	**Database:**	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,291.66	1.22	146.64	6,288.05	-106.19	23.86	382,529.67	716,715.65	32° 3' 1.405 N	103° 46' 2.171 W
6,386.74	0.90	140.08	6,383.11	-107.60	24.89	382,528.25	716,716.69	32° 3' 1.390 N	103° 46' 2.159 W
6,481.82	0.87	156.93	6,478.18	-108.84	25.65	382,527.02	716,717.45	32° 3' 1.378 N	103° 46' 2.151 W
6,576.90	1.00	161.31	6,573.25	-110.29	26.20	382,525.57	716,718.00	32° 3' 1.364 N	103° 46' 2.144 W
6,671.98	1.12	171.64	6,668.31	-112.00	26.60	382,523.86	716,718.40	32° 3' 1.347 N	103° 46' 2.140 W
6,767.06	1.37	164.64	6,763.37	-114.01	27.04	382,521.85	716,718.84	32° 3' 1.327 N	103° 46' 2.135 W
6,862.14	1.32	169.37	6,858.42	-116.18	27.54	382,519.68	716,719.34	32° 3' 1.305 N	103° 46' 2.129 W
6,957.22	1.93	145.98	6,953.47	-118.59	28.64	382,517.27	716,720.44	32° 3' 1.282 N	103° 46' 2.117 W
7,052.30	1.61	158.24	7,048.50	-121.15	30.03	382,514.70	716,721.83	32° 3' 1.256 N	103° 46' 2.100 W
7,147.38	1.80	153.56	7,143.54	-123.73	31.19	382,512.13	716,722.99	32° 3' 1.230 N	103° 46' 2.087 W
7,242.46	2.08	157.36	7,238.57	-126.66	32.52	382,509.20	716,724.32	32° 3' 1.201 N	103° 46' 2.072 W
7,337.54	2.08	157.32	7,333.58	-129.85	33.85	382,506.01	716,725.65	32° 3' 1.170 N	103° 46' 2.057 W
7,432.62	2.57	155.98	7,428.58	-133.39	35.38	382,502.47	716,727.18	32° 3' 1.135 N	103° 46' 2.039 W
7,527.70	2.55	161.28	7,523.57	-137.34	36.93	382,498.52	716,728.73	32° 3' 1.096 N	103° 46' 2.021 W
7,622.78	2.47	166.06	7,618.56	-141.33	38.10	382,494.53	716,729.90	32° 3' 1.056 N	103° 46' 2.008 W
7,717.86	2.37	166.50	7,713.55	-145.23	39.05	382,490.63	716,730.85	32° 3' 1.017 N	103° 46' 1.997 W
7,812.94	2.39	163.07	7,808.55	-149.04	40.09	382,486.82	716,731.89	32° 3' 0.980 N	103° 46' 1.985 W
7,908.02	2.39	164.66	7,903.55	-152.84	41.19	382,483.01	716,732.99	32° 3' 0.942 N	103° 46' 1.973 W
8,003.10	2.27	166.20	7,998.55	-156.58	42.17	382,479.27	716,733.96	32° 3' 0.905 N	103° 46' 1.962 W
8,098.18	2.00	164.67	8,093.56	-160.01	43.05	382,475.85	716,734.85	32° 3' 0.871 N	103° 46' 1.952 W
8,193.26	2.07	156.54	8,188.58	-163.19	44.18	382,472.67	716,735.97	32° 3' 0.839 N	103° 46' 1.939 W
8,288.34	1.42	149.58	8,283.62	-165.78	45.46	382,470.08	716,737.25	32° 3' 0.814 N	103° 46' 1.924 W
8,383.42	1.03	168.35	8,378.68	-167.63	46.23	382,468.23	716,738.02	32° 3' 0.795 N	103° 46' 1.915 W
8,478.50	1.18	118.88	8,473.74	-168.94	47.26	382,466.92	716,739.05	32° 3' 0.782 N	103° 46' 1.903 W
8,573.58	1.08	97.00	8,568.80	-169.52	49.00	382,466.33	716,740.80	32° 3' 0.776 N	103° 46' 1.883 W
8,668.66	0.94	147.25	8,663.87	-170.29	50.31	382,465.57	716,742.11	32° 3' 0.769 N	103° 46' 1.868 W
8,763.74	0.97	200.72	8,758.94	-171.70	50.45	382,464.16	716,742.25	32° 3' 0.755 N	103° 46' 1.866 W
8,858.82	1.12	171.69	8,854.01	-173.37	50.30	382,462.49	716,742.10	32° 3' 0.738 N	103° 46' 1.868 W
8,953.90	1.28	171.51	8,949.06	-175.34	50.59	382,460.52	716,742.39	32° 3' 0.719 N	103° 46' 1.865 W
9,048.98	1.27	170.14	9,044.12	-177.43	50.93	382,458.43	716,742.72	32° 3' 0.698 N	103° 46' 1.861 W
9,144.06	1.57	159.31	9,139.17	-179.69	51.57	382,456.17	716,743.36	32° 3' 0.676 N	103° 46' 1.854 W
9,239.14	1.73	170.43	9,234.21	-182.32	52.27	382,453.54	716,744.06	32° 3' 0.650 N	103° 46' 1.846 W
9,334.22	1.66	171.68	9,329.25	-185.10	52.71	382,450.76	716,744.50	32° 3' 0.622 N	103° 46' 1.841 W
9,429.30	1.74	176.48	9,424.29	-187.90	52.99	382,447.96	716,744.79	32° 3' 0.594 N	103° 46' 1.838 W
9,524.38	1.80	178.75	9,519.32	-190.83	53.11	382,445.02	716,744.91	32° 3' 0.565 N	103° 46' 1.837 W
9,619.46	2.11	146.90	9,614.35	-193.79	54.10	382,442.06	716,745.90	32° 3' 0.536 N	103° 46' 1.825 W
9,714.54	2.04	122.83	9,709.37	-196.18	56.48	382,439.68	716,748.28	32° 3' 0.512 N	103° 46' 1.798 W
9,809.62	1.00	98.94	9,804.42	-197.22	58.72	382,438.63	716,750.52	32° 3' 0.502 N	103° 46' 1.772 W
9,904.70	0.75	96.66	9,899.49	-197.42	60.16	382,438.43	716,751.96	32° 3' 0.500 N	103° 46' 1.755 W
9,999.78	0.52	133.56	9,994.56	-197.79	61.09	382,438.06	716,752.89	32° 3' 0.496 N	103° 46' 1.744 W
10,094.86	0.64	161.17	10,089.64	-198.59	61.58	382,437.26	716,753.37	32° 3' 0.488 N	103° 46' 1.739 W
10,189.94	0.69	156.14	10,184.71	-199.62	61.98	382,436.24	716,753.77	32° 3' 0.478 N	103° 46' 1.734 W
10,285.02	1.24	173.30	10,279.78	-201.17	62.33	382,434.69	716,754.13	32° 3' 0.463 N	103° 46' 1.730 W

Leam Drilling Systems LLC

Survey Report - Geographic

Company:	DEVON ENERGY	**Local Co-ordinate Reference:**	Well 10 Federal 3H
Project:	Eddy County, NM (NAD-83)	**TVD Reference:**	GE 3240' + KB 28' @ 3268.00usft (Cactus 105)
Site:	Snapping	**MD Reference:**	GE 3240' + KB 28' @ 3268.00usft (Cactus 105)
Well:	10 Federal 3H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH	**Database:**	EDM 5000.1 Single User Db

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL(S-10-F 3H) - actual wellpath hits target center - Point	0.00	0.00	0.00	0.00	0.00	382,635.86	716,691.80	32° 3' 2.457 N	103° 46' 2.442 W
PBHL(S-10-F 3H) - actual wellpath misses target center by 5001.68usft at 10027.28usft MD (10022.06 TVD, -197.98 N, 61.26 E) - Point	0.00	0.00	10,065.00	4,800.46	-113.40	387,436.32	716,578.40	32° 3' 49.967 N	103° 46' 3.467 W
BHL OH (S-10-F 3H) - actual wellpath hits target center - Point	0.00	0.00	10,279.77	-201.17	62.33	382,434.69	716,754.13	32° 3' 0.463 N	103° 46' 1.730 W

Checked By: _____ Approved By: _____ Date: _____

Leam Drilling Systems LLC

Survey Report

Company:	DEVON ENERGY	**Local Co-ordinate Reference:**	Well 10 Federal 3H
Project:	Eddy County, NM (NAD-83)	**TVD Reference:**	GE 3240' + KB 28' @ 3268.00usft (Cactus 105)
Site:	Snapping	**MD Reference:**	GE 3240' + KB 28' @ 3268.00usft (Cactus 105)
Well:	10 Federal 3H	**North Reference:**	Grid
Wellbore:	ST01	**Survey Calculation Method:**	Minimum Curvature
Design:	ST01	**Database:**	EDM 5000.1 Single User Db

Project Eddy County, NM (NAD-83)

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

Site Snapping

Site Position:		**Northing:**	382,635.86 usft	**Latitude:**	32° 3' 2.457 N
From:	Map	**Easting:**	716,691.80 usft	**Longitude:**	103° 46' 2.442 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.30 °

Well 10 Federal 3H

Well Position	**+N/-S**	0.00 usft	**Northing:**	382,635.86 usft	**Latitude:**	32° 3' 2.457 N
	+E/-W	0.00 usft	**Easting:**	716,691.80 usft	**Longitude:**	103° 46' 2.442 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,240.00 usft

Wellbore ST01

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	04/06/13	7.44	59.95	48,311

Design ST01

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	9,429.30

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	0.00

Survey Program **Date** 09/19/13

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
16.38	9,429.30	Survey #1 (OH)	Gyroscope	Gyroscope
9,450.00	14,647.00	Survey #1 (ST01)	LEAM MWD	MWD - Standard
14,782.00	14,782.00	Survey #2 (ST01)	Project	Projection

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16.38	0.69	130.33	16.38	-0.06	0.08	-0.06	4.21	4.21	0.00
111.46	0.77	125.65	111.45	-0.81	1.03	-0.81	0.10	0.08	-4.92
206.54	0.90	121.86	206.52	-1.57	2.18	-1.57	0.15	0.14	-3.99
301.62	0.99	120.04	301.59	-2.38	3.53	-2.38	0.10	0.09	-1.91
396.70	1.73	128.48	396.64	-3.68	5.36	-3.68	0.80	0.78	8.88
491.78	2.25	125.17	491.66	-5.65	8.01	-5.65	0.56	0.55	-3.48
586.86	2.47	130.16	586.66	-8.05	11.10	-8.05	0.32	0.23	5.25
681.94	2.52	126.97	681.65	-10.63	14.34	-10.63	0.16	0.05	-3.36

Leam Drilling Systems LLC

Survey Report

Company:	DEVON ENERGY	**Local Co-ordinate Reference:**	Well 10 Federal 3H
Project:	Eddy County, NM (NAD-83)	**TVD Reference:**	GE 3240' + KB 28' @ 3268.00usft (Cactus 105)
Site:	Snapping	**MD Reference:**	GE 3240' + KB 28' @ 3268.00usft (Cactus 105)
Well:	10 Federal 3H	**North Reference:**	Grid
Wellbore:	ST01	**Survey Calculation Method:**	Minimum Curvature
Design:	ST01	**Database:**	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
777.02	2.63	134.67	776.64	-13.42	17.56	-13.42	0.38	0.12	8.10
872.10	2.33	145.22	871.63	-16.54	20.22	-16.54	0.57	-0.32	11.10
967.18	2.16	142.67	966.64	-19.55	22.40	-19.55	0.21	-0.18	-2.68
1,062.26	1.91	134.21	1,061.66	-22.08	24.63	-22.08	0.41	-0.26	-8.90
1,157.34	1.76	145.00	1,156.69	-24.38	26.60	-24.38	0.40	-0.16	11.35
1,252.42	1.88	153.93	1,251.72	-26.98	28.12	-26.98	0.32	0.13	9.39
1,347.50	1.11	173.91	1,346.77	-29.29	28.91	-29.29	0.97	-0.81	21.01
1,442.58	0.42	209.76	1,441.84	-30.51	28.83	-30.51	0.85	-0.73	37.71
1,537.66	0.33	223.38	1,536.92	-31.01	28.47	-31.01	0.13	-0.09	14.32
1,632.74	0.39	235.06	1,631.99	-31.40	28.02	-31.40	0.10	0.06	12.28
1,727.82	0.23	241.71	1,727.07	-31.67	27.58	-31.67	0.17	-0.17	6.99
1,822.90	0.42	231.49	1,822.15	-31.98	27.14	-31.98	0.21	0.20	-10.75
1,917.98	0.90	241.56	1,917.23	-32.55	26.21	-32.55	0.52	0.50	10.59
2,013.06	1.61	238.48	2,012.28	-33.61	24.42	-33.61	0.75	0.75	-3.24
2,108.14	2.54	234.04	2,107.30	-35.54	21.57	-35.54	0.99	0.98	-4.67
2,203.22	2.39	233.61	2,202.29	-37.96	18.27	-37.96	0.16	-0.16	-0.45
2,298.30	2.44	252.80	2,297.29	-39.73	14.74	-39.73	0.85	0.05	20.18
2,393.38	2.42	256.79	2,392.28	-40.79	10.86	-40.79	0.18	-0.02	4.20
2,488.46	2.36	275.56	2,487.28	-41.06	6.95	-41.06	0.82	-0.06	19.74
2,583.54	2.17	275.25	2,582.29	-40.70	3.21	-40.70	0.20	-0.20	-0.33
2,678.62	2.20	264.91	2,677.30	-40.70	-0.40	-40.70	0.42	0.03	-10.88
2,773.70	2.06	280.64	2,772.31	-40.55	-3.90	-40.55	0.63	-0.15	16.54
2,868.78	1.86	285.05	2,867.34	-39.83	-7.06	-39.83	0.26	-0.21	4.64
2,963.86	1.99	292.14	2,962.36	-38.81	-10.08	-38.81	0.29	0.14	7.46
3,058.94	1.99	290.96	3,057.39	-37.60	-13.15	-37.60	0.04	0.00	-1.24
3,154.02	2.34	296.14	3,152.40	-36.15	-16.44	-36.15	0.42	0.37	5.45
3,249.10	2.12	292.95	3,247.41	-34.61	-19.80	-34.61	0.27	-0.23	-3.36
3,344.18	1.57	297.24	3,342.44	-33.33	-22.58	-33.33	0.60	-0.58	4.51
3,439.26	1.23	235.86	3,437.49	-33.30	-24.58	-33.30	1.53	-0.36	-64.56
3,534.34	1.71	162.36	3,532.55	-35.23	-25.00	-35.23	1.89	0.50	-77.30
3,629.42	1.95	135.72	3,627.58	-37.74	-23.44	-37.74	0.92	0.25	-28.02
3,724.50	3.74	137.15	3,722.54	-41.17	-20.20	-41.17	1.88	1.88	1.50
3,819.58	5.44	140.70	3,817.31	-46.93	-15.23	-46.93	1.81	1.79	3.73
3,914.66	4.28	139.79	3,912.05	-53.13	-10.09	-53.13	1.22	-1.22	-0.96
4,009.74	3.15	141.02	4,006.93	-57.87	-6.15	-57.87	1.19	-1.19	1.29
4,104.82	2.21	128.84	4,101.90	-61.05	-3.08	-61.05	1.15	-0.99	-12.81
4,199.90	2.16	134.31	4,196.91	-63.45	-0.37	-63.45	0.23	-0.05	5.75
4,294.98	1.94	126.11	4,291.93	-65.65	2.21	-65.65	0.39	-0.23	-8.62
4,390.06	1.46	142.48	4,386.97	-67.56	4.25	-67.56	0.71	-0.50	17.22
4,485.14	1.76	139.55	4,482.01	-69.63	5.93	-69.63	0.33	0.32	-3.08
4,580.22	1.55	143.13	4,577.06	-71.77	7.65	-71.77	0.25	-0.22	3.77
4,675.30	1.49	149.73	4,672.10	-73.87	9.05	-73.87	0.19	-0.06	6.94
4,770.38	1.48	144.40	4,767.15	-75.93	10.38	-75.93	0.15	-0.01	-5.61

Leam Drilling Systems LLC

Survey Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 10 Federal 3H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3240' + KB 28' @ 3268.00usft (Cactus 105)
Site:	Snapping	MD Reference:	GE 3240' + KB 28' @ 3268.00usft (Cactus 105)
Well:	10 Federal 3H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01	Database:	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,865.46	1.36	142.19	4,862.20	-77.82	11.79	-77.82	0.14	-0.13	-2.32
4,960.54	1.20	136.70	4,957.26	-79.44	13.16	-79.44	0.21	-0.17	-5.77
5,055.62	1.36	163.28	5,052.31	-81.25	14.17	-81.25	0.64	0.17	27.96
5,150.70	1.16	155.16	5,147.37	-83.20	14.90	-83.20	0.28	-0.21	-8.54
5,245.78	2.23	152.41	5,242.41	-85.71	16.16	-85.71	1.13	1.13	-2.89
5,340.86	1.03	153.68	5,337.45	-88.12	17.40	-88.12	1.26	-1.26	1.34
5,435.94	1.04	155.64	5,432.51	-89.67	18.13	-89.67	0.04	0.01	2.06
5,531.02	1.14	158.87	5,527.58	-91.34	18.83	-91.34	0.12	0.11	3.40
5,626.10	1.09	164.80	5,622.64	-93.09	19.41	-93.09	0.13	-0.05	6.24
5,721.18	1.19	176.55	5,717.70	-94.95	19.70	-94.95	0.27	0.11	12.36
5,816.26	1.23	169.37	5,812.76	-96.94	19.95	-96.94	0.16	0.04	-7.55
5,911.34	1.17	162.86	5,907.82	-98.87	20.43	-98.87	0.16	-0.06	-6.85
6,006.42	1.10	155.36	6,002.88	-100.63	21.09	-100.63	0.17	-0.07	-7.89
6,101.50	1.31	157.93	6,097.94	-102.46	21.88	-102.46	0.23	0.22	2.70
6,196.58	1.28	151.61	6,192.99	-104.41	22.79	-104.41	0.15	-0.03	-6.65
6,291.66	1.22	146.64	6,288.05	-106.19	23.86	-106.19	0.13	-0.06	-5.23
6,386.74	0.90	140.08	6,383.11	-107.60	24.89	-107.60	0.36	-0.34	-6.90
6,481.82	0.87	156.93	6,478.18	-108.84	25.65	-108.84	0.27	-0.03	17.72
6,576.90	1.00	161.31	6,573.25	-110.29	26.20	-110.29	0.16	0.14	4.61
6,671.98	1.12	171.64	6,668.31	-112.00	26.60	-112.00	0.24	0.13	10.86
6,767.06	1.37	164.64	6,763.37	-114.01	27.04	-114.01	0.31	0.26	-7.36
6,862.14	1.32	169.37	6,858.42	-116.18	27.54	-116.18	0.13	-0.05	4.97
6,957.22	1.93	145.98	6,953.47	-118.59	28.64	-118.59	0.94	0.64	-24.60
7,052.30	1.61	158.24	7,048.50	-121.15	30.03	-121.15	0.52	-0.34	12.89
7,147.38	1.80	153.56	7,143.54	-123.73	31.19	-123.73	0.25	0.20	-4.92
7,242.46	2.08	157.36	7,238.57	-126.66	32.52	-126.66	0.32	0.29	4.00
7,337.54	2.08	157.32	7,333.58	-129.85	33.85	-129.85	0.00	0.00	-0.04
7,432.62	2.57	155.98	7,428.58	-133.39	35.38	-133.39	0.52	0.52	-1.41
7,527.70	2.55	161.28	7,523.57	-137.34	36.93	-137.34	0.25	-0.02	5.57
7,622.78	2.47	166.06	7,618.56	-141.33	38.10	-141.33	0.24	-0.08	5.03
7,717.86	2.37	166.50	7,713.55	-145.23	39.05	-145.23	0.11	-0.11	0.46
7,812.94	2.39	163.07	7,808.55	-149.04	40.09	-149.04	0.15	0.02	-3.61
7,908.02	2.39	164.66	7,903.55	-152.84	41.19	-152.84	0.07	0.00	1.67
8,003.10	2.27	166.20	7,998.55	-156.58	42.17	-156.58	0.14	-0.13	1.62
8,098.18	2.00	164.67	8,093.56	-160.01	43.05	-160.01	0.29	-0.28	-1.61
8,193.26	2.07	156.54	8,188.58	-163.19	44.18	-163.19	0.31	0.07	-8.55
8,288.34	1.42	149.58	8,283.62	-165.78	45.46	-165.78	0.72	-0.68	-7.32
8,383.42	1.03	168.35	8,378.68	-167.63	46.23	-167.63	0.58	-0.41	19.74
8,478.50	1.18	118.88	8,473.74	-168.94	47.26	-168.94	0.98	0.16	-52.03
8,573.58	1.08	97.00	8,568.80	-169.52	49.00	-169.52	0.46	-0.11	-23.01
8,668.66	0.94	147.25	8,663.87	-170.29	50.31	-170.29	0.91	-0.15	52.85
8,763.74	0.97	200.72	8,758.94	-171.70	50.45	-171.70	0.90	0.03	56.24
8,858.82	1.12	171.69	8,854.01	-173.37	50.30	-173.37	0.57	0.16	-30.53

Leam Drilling Systems LLC

Survey Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 10 Federal 3H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3240' + KB 28' @ 3268.00usft (Cactus 105)
Site:	Snapping	MD Reference:	GE 3240' + KB 28' @ 3268.00usft (Cactus 105)
Well:	10 Federal 3H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01	Database:	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,953.90	1.28	171.51	8,949.06	-175.34	50.59	-175.34	0.17	0.17	-0.19
9,048.98	1.27	170.14	9,044.12	-177.43	50.93	-177.43	0.03	-0.01	-1.44
9,144.06	1.57	159.31	9,139.17	-179.69	51.57	-179.69	0.42	0.32	-11.39
9,239.14	1.73	170.43	9,234.21	-182.32	52.27	-182.32	0.38	0.17	11.70
9,334.22	1.66	171.68	9,329.25	-185.10	52.71	-185.10	0.08	-0.07	1.31
9,429.30	1.74	176.48	9,424.29	-187.90	52.99	-187.90	0.17	0.08	5.05
9,450.00	2.02	174.84	9,444.98	-188.58	53.05	-188.58	1.38	1.35	-7.92
9,513.00	5.63	337.43	9,507.90	-186.83	51.96	-186.83	12.03	5.73	258.08
9,545.00	9.15	342.35	9,539.63	-182.95	50.58	-182.95	11.17	11.00	15.38
9,576.00	13.10	342.88	9,570.04	-177.24	48.80	-177.24	12.75	12.74	1.71
9,607.00	17.85	344.99	9,599.91	-169.29	46.54	-169.29	15.43	15.32	6.81
9,639.00	22.77	347.80	9,629.91	-158.50	43.95	-158.50	15.67	15.38	8.78
9,671.00	26.20	349.91	9,659.03	-145.48	41.41	-145.48	11.06	10.72	6.59
9,703.00	27.96	351.50	9,687.52	-131.11	39.06	-131.11	5.95	5.50	4.97
9,735.00	30.51	352.37	9,715.44	-115.64	36.87	-115.64	8.08	7.97	2.72
9,767.00	34.47	352.02	9,742.43	-98.61	34.54	-98.61	12.39	12.38	-1.09
9,799.00	37.81	350.97	9,768.27	-79.95	31.74	-79.95	10.62	10.44	-3.28
9,830.00	39.75	350.44	9,792.43	-60.79	28.60	-60.79	6.35	6.26	-1.71
9,862.00	43.09	350.27	9,816.42	-39.92	25.05	-39.92	10.44	10.44	-0.53
9,893.00	47.04	350.44	9,838.31	-18.29	21.38	-18.29	12.75	12.74	0.55
9,925.00	50.12	350.62	9,859.48	5.38	17.43	5.38	9.63	9.63	0.56
9,957.00	51.44	350.79	9,879.72	29.84	13.43	29.84	4.15	4.13	0.53
9,989.00	52.41	350.44	9,899.45	54.69	9.32	54.69	3.15	3.03	-1.09
10,020.00	55.31	350.44	9,917.73	79.38	5.16	79.38	9.35	9.35	0.00
10,051.00	58.39	350.79	9,934.68	104.98	0.93	104.98	9.98	9.94	1.13
10,080.74	59.77	350.79	9,949.96	130.17	-3.15	130.17	4.66	4.66	0.00
HL Crossing: 10081' MD, 9950' TVD									
10,083.00	59.88	350.79	9,951.10	132.10	-3.46	132.10	4.66	4.66	0.00
10,115.00	61.11	350.97	9,966.86	159.59	-7.88	159.59	3.87	3.84	0.56
10,147.00	64.19	350.09	9,981.56	187.62	-12.56	187.62	9.93	9.63	-2.75
10,178.00	66.13	349.56	9,994.58	215.31	-17.53	215.31	6.45	6.26	-1.71
10,210.00	68.50	348.51	10,006.92	244.30	-23.14	244.30	8.00	7.41	-3.28
10,241.00	70.79	347.80	10,017.70	272.74	-29.11	272.74	7.69	7.39	-2.29
10,273.00	73.16	347.45	10,027.60	302.46	-35.63	302.46	7.48	7.41	-1.09
10,305.00	74.74	348.16	10,036.45	332.52	-42.13	332.52	5.38	4.94	2.22
10,351.00	76.59	349.74	10,047.84	376.25	-50.67	376.25	5.22	4.02	3.43
10,383.00	78.00	350.27	10,054.88	407.00	-56.08	407.00	4.69	4.41	1.66
10,414.00	78.88	351.67	10,061.09	436.99	-60.85	436.99	5.26	2.84	4.52
10,445.00	80.20	353.08	10,066.72	467.20	-64.89	467.20	6.18	4.26	4.55
10,476.00	82.04	354.13	10,071.50	497.64	-68.30	497.64	6.81	5.94	3.39
10,508.00	84.77	354.84	10,075.18	529.28	-71.36	529.28	8.81	8.53	2.22
10,539.00	87.58	355.54	10,077.24	560.10	-73.95	560.10	9.34	9.06	2.26
10,565.00	89.60	356.24	10,077.88	586.02	-75.81	586.02	8.22	7.77	2.69
10,661.00	91.01	356.59	10,077.37	681.83	-81.82	681.83	1.51	1.47	0.36

Leam Drilling Systems LLC

Survey Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 10 Federal 3H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3240' + KB 28' @ 3268.00usft (Cactus 105)
Site:	Snapping	MD Reference:	GE 3240' + KB 28' @ 3268.00usft (Cactus 105)
Well:	10 Federal 3H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01	Database:	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,755.00	91.36	356.59	10,075.43	775.64	-87.41	775.64	0.37	0.37	0.00
10,850.00	91.45	356.42	10,073.10	870.44	-93.20	870.44	0.20	0.09	-0.18
10,945.00	91.98	356.24	10,070.26	965.20	-99.28	965.20	0.59	0.56	-0.19
11,040.00	90.57	356.59	10,068.14	1,059.99	-105.21	1,059.99	1.53	-1.48	0.37
11,135.00	90.92	357.12	10,066.91	1,154.84	-110.43	1,154.84	0.67	0.37	0.56
11,230.00	91.80	356.59	10,064.65	1,249.66	-115.64	1,249.66	1.08	0.93	-0.56
11,325.00	90.66	356.94	10,062.61	1,344.49	-121.00	1,344.49	1.26	-1.20	0.37
11,420.00	90.57	359.41	10,061.59	1,439.43	-124.02	1,439.43	2.60	-0.09	2.60
11,515.00	91.63	359.41	10,059.77	1,534.40	-125.00	1,534.40	1.12	1.12	0.00
11,610.00	92.42	359.58	10,056.41	1,629.34	-125.84	1,629.34	0.85	0.83	0.18
11,705.00	90.84	358.88	10,053.71	1,724.29	-127.11	1,724.29	1.82	-1.66	-0.74
11,800.00	91.63	359.05	10,051.66	1,819.25	-128.83	1,819.25	0.85	0.83	0.18
11,895.00	90.75	359.41	10,049.69	1,914.22	-130.10	1,914.22	1.00	-0.93	0.38
11,990.00	90.04	359.76	10,049.04	2,009.22	-130.79	2,009.22	0.83	-0.75	0.37
12,085.00	88.29	359.93	10,050.42	2,104.20	-131.05	2,104.20	1.85	-1.84	0.18
12,180.00	87.14	359.93	10,054.21	2,199.13	-131.16	2,199.13	1.21	-1.21	0.00
12,275.00	88.11	0.30	10,058.14	2,294.04	-130.97	2,294.04	1.09	1.02	0.39
12,370.00	88.55	0.46	10,060.91	2,389.00	-130.34	2,389.00	0.49	0.46	0.17
12,465.00	88.72	0.99	10,063.18	2,483.96	-129.14	2,483.96	0.59	0.18	0.56
12,560.00	88.81	0.81	10,065.22	2,578.93	-127.65	2,578.93	0.21	0.09	-0.19
12,655.00	89.16	1.52	10,066.91	2,673.90	-125.72	2,673.90	0.83	0.37	0.75
12,750.00	90.04	2.57	10,067.57	2,768.83	-122.33	2,768.83	1.44	0.93	1.11
12,845.00	89.16	1.69	10,068.23	2,863.76	-118.80	2,863.76	1.31	-0.93	-0.93
12,940.00	88.46	0.99	10,070.21	2,958.71	-116.58	2,958.71	1.04	-0.74	-0.74
13,035.00	90.40	0.46	10,071.15	3,053.70	-115.38	3,053.70	2.12	2.04	-0.56
13,130.00	91.80	0.64	10,069.33	3,148.67	-114.46	3,148.67	1.49	1.47	0.19
13,226.00	90.92	359.93	10,067.05	3,244.64	-113.99	3,244.64	1.18	-0.92	-0.74
13,320.00	90.31	359.58	10,066.04	3,338.63	-114.39	3,338.63	0.75	-0.65	-0.37
13,415.00	89.78	359.41	10,065.97	3,433.63	-115.23	3,433.63	0.59	-0.56	-0.18
13,510.00	89.69	359.23	10,066.40	3,528.62	-116.35	3,528.62	0.21	-0.09	-0.19
13,605.00	90.04	359.05	10,066.63	3,623.61	-117.78	3,623.61	0.41	0.37	-0.19
13,700.00	91.36	359.05	10,065.47	3,718.59	-119.35	3,718.59	1.39	1.39	0.00
13,794.00	90.31	358.35	10,064.10	3,812.55	-121.49	3,812.55	1.34	-1.12	-0.74
13,889.00	91.10	359.41	10,062.93	3,907.53	-123.34	3,907.53	1.39	0.83	1.12
13,984.00	91.19	359.23	10,061.03	4,002.50	-124.47	4,002.50	0.21	0.09	-0.19
14,078.00	91.54	359.05	10,058.79	4,096.46	-125.88	4,096.46	0.42	0.37	-0.19
14,173.00	90.13	359.58	10,057.41	4,191.44	-127.02	4,191.44	1.59	-1.48	0.56
14,268.00	89.69	359.41	10,057.56	4,286.44	-127.85	4,286.44	0.50	-0.46	-0.18
14,362.00	89.69	358.70	10,058.07	4,380.42	-129.40	4,380.42	0.76	0.00	-0.76
14,457.00	91.63	358.53	10,056.97	4,475.39	-131.70	4,475.39	2.05	2.04	-0.18
14,552.00	92.15	359.23	10,053.84	4,570.31	-133.56	4,570.31	0.92	0.55	0.74
14,647.00	93.03	359.05	10,049.54	4,665.21	-134.98	4,665.21	0.95	0.93	-0.19
14,782.00	93.03	359.05	10,042.41	4,800.00	-137.22	4,800.00	0.00	0.00	0.00

Leam Drilling Systems LLC

Survey Report

Company:	DEVON ENERGY	**Local Co-ordinate Reference:**	Well 10 Federal 3H
Project:	Eddy County, NM (NAD-83)	**TVD Reference:**	GE 3240' + KB 28' @ 3268.00usft (Cactus 105)
Site:	Snapping	**MD Reference:**	GE 3240' + KB 28' @ 3268.00usft (Cactus 105)
Well:	10 Federal 3H	**North Reference:**	Grid
Wellbore:	ST01	**Survey Calculation Method:**	Minimum Curvature
Design:	ST01	**Database:**	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL(S-10-F 3H) - actual wellpath hits target center - Point	0.00	0.00	0.00	0.00	0.00	382,635.86	716,691.80	32° 3' 2.457 N	103° 46' 2.442 W
BHL ST01 (S-10-F 3H) - actual wellpath hits target center - Point	0.00	0.00	10,042.41	4,800.00	-137.22	387,435.86	716,554.58	32° 3' 49.964 N	103° 46' 3.744 W
PBHL(S-10-F 3H) - actual wellpath misses target center by 32.81usft at 14780.87usft MD (10042.47 TVD, 4798.87 N, -137.20 E) - Point	0.00	0.00	10,065.00	4,800.46	-113.40	387,436.32	716,578.40	32° 3' 49.967 N	103° 46' 3.467 W
BHL OH (S-10-F 3H) - actual wellpath misses target center by 461.04usft at 10002.43usft MD (9907.52 TVD, 65.28 N, 7.54 E) - Point	0.00	0.00	10,279.77	-201.17	62.33	382,434.69	716,754.13	32° 3' 0.463 N	103° 46' 1.730 W