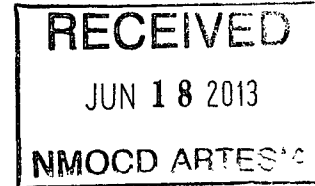




February 19, 2013



Devon Energy
Well: Burton Flat Deep Unit 48H
County/Parish: Eddy County, NM

30-015-40518

LEAM MWD: (OH) from 5,970' MD – 10,604' MD
Projection: 10,731' MD

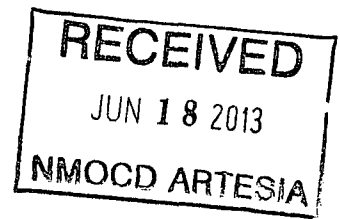
LEAM MWD: (ST) from 10,132' MD – 13,594' MD
Projection: 13,648' MD

This Borehole Survey for the OH taken between 12/03/12 and 12/07/12; and for the ST taken between 12/10/12 and 12/15/12 had been conducted and calculated according to the highest professional standards and complies with all known State and Federal requirements.

Reviewed and Approved:

Date: February 19, 2013

*Physical & Mailing: 2010 East Davis, Conroe, TX 77301
936-756-7577 • 936-756-7595 Fax • 1 (800) 756-7504*



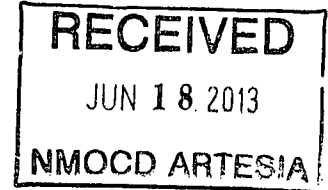
Survey Certification Form

State of New Mexico
Eddy County

I, Randy W. Rakowitz, certify that; I am employed by LEAM Drilling Systems LLC, that I did on the day(s) of December 3, 2012 through December 7, 2012, conduct or supervise the taking of MWD Survey from a depth of 5,970' to 10,731' MD; that the data is true, correct, complete and within the limitations of the tools as set forth by LEAM Drilling Systems LLC, that I am authorized and qualified to make this report; that this survey was conducted at the request of Devon Energy for the Burton Flat Deep Unit 48H in Eddy County, New Mexico; and that I reviewed this report and find that it conforms to the principals and procedures as set forth by LEAM Drilling Systems LLC.

A handwritten signature in black ink, appearing to read 'Randy W. Rakowitz', written over a horizontal line.

Randy W. Rakowitz
MWD Operations Coordinator



Survey Certification Form

State of New Mexico
Eddy County

I, Randy W. Rakowitz, certify that; I am employed by LEAM Drilling Systems LLC, that I did on the day(s) of December 10, 2012 through December 15, 2012, conduct or supervise the taking of MWD Survey from a depth of 10,132' to 13,648' MD; that the data is true, correct, complete and within the limitations of the tools as set forth by LEAM Drilling Systems LLC, that I am authorized and qualified to make this report; that this survey was conducted at the request of Devon Energy for the Burton Flat Deep Unit 48H in Eddy County, New Mexico; and that I reviewed this report and find that it conforms to the principals and procedures as set forth by LEAM Drilling Systems LLC.

A handwritten signature in black ink, appearing to read 'Randy W. Rakowitz', written over a horizontal line.

Randy W. Rakowitz
MWD Operations Coordinator

LEAM Drilling Systems LLC

Survey Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 48H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3221' + KB 25' @ 3246.0usft (H&P 223)
Site:	Burton Flat Deep Unit	MD Reference:	GE 3221' + KB 25' @ 3246.0usft (H&P 223)
Well:	48H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 MULTI 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:	Burton Flat Deep Unit				
Site Position:		Northing:	548,073.21 usft	Latitude:	32° 30' 23.782 N
From:	Map	Easting:	592,066.43 usft	Longitude:	104° 10' 7.587 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.09 °

Well:	48H					
Well Position	+N/-S	0.0 usft	Northing:	561,522.67 usft	Latitude:	32° 32' 36.904 N
	+E/-W	0.0 usft	Easting:	589,949.62 usft	Longitude:	104° 10' 32.075 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,221.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	IGRF2010	11/28/2011	(°)	(°)	(nT)
			7.83	60.37	48,697

Design:	OH				
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	180.63	

Survey Program	Date	2/19/2013			
From	To	Survey (Wellbore)	Tool Name	Description	
(usft)	(usft)				
100.0	5,950.6	Survey #1 (OH)	NS-GYRO-MS	North sensing gyrocompassing m/s	
5,970.0	10,604.0	Survey #2 (OH)	LEAM MWD	MWD - Standard	
10,734.0	10,731.0	Survey #3 (OH)	Project	Projection	

Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn	
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate	
(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.62	259.46	100.0	-0.1	-0.5	0.1	0.62	0.62	0.00	
200.0	0.69	19.44	200.0	0.4	-0.9	-0.4	1.13	0.07	119.98	
300.0	1.01	18.33	300.0	1.8	-0.4	-1.8	0.32	0.32	-1.11	
400.0	1.12	15.03	400.0	3.6	0.1	-3.6	0.13	0.11	-3.30	
500.0	0.62	358.07	500.0	5.0	0.4	-5.0	0.56	-0.50	-16.96	
600.0	0.31	52.54	600.0	5.7	0.6	-5.8	0.51	-0.31	54.47	
700.0	0.23	52.93	700.0	6.0	1.0	-6.0	0.08	-0.08	0.39	
800.0	0.23	154.88	800.0	6.0	1.2	-6.0	0.36	0.00	101.95	

LEAM Drilling Systems LLC

Survey Report



Company: DEVON ENERGY
 Project: Eddy County, NM (NAD-83)
 Site: Burton Flat Deep Unit
 Well: 48H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well 48H
 TVD Reference: GE 3221' + KB 25' @ 3246.0usft (H&P 223)
 MD Reference: GE 3221' + KB 25' @ 3246.0usft (H&P 223)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.1 MULTI 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)	
900.0	0.52	106.80	899.9	5.7	1.7	-5.7	0.40	0.29	-48.08	
1,000.0	0.69	88.93	999.9	5.5	2.8	-5.6	0.25	0.17	-17.87	
1,100.0	0.63	94.90	1,099.9	5.5	3.9	-5.5	0.09	-0.06	5.97	
1,200.0	0.73	83.60	1,199.9	5.5	5.1	-5.6	0.17	0.10	-11.30	
1,300.0	0.72	79.99	1,299.9	5.7	6.3	-5.8	0.05	-0.01	-3.61	
1,400.0	0.40	83.17	1,399.9	5.9	7.3	-5.9	0.32	-0.32	3.18	
1,500.0	0.82	62.91	1,499.9	6.2	8.3	-6.3	0.47	0.42	-20.26	
1,600.0	0.86	61.30	1,599.9	6.9	9.6	-7.0	0.05	0.04	-1.61	
1,700.0	0.76	62.20	1,699.9	7.6	10.8	-7.7	0.10	-0.10	0.90	
1,800.0	0.74	54.98	1,799.9	8.3	11.9	-8.4	0.10	-0.02	-7.22	
1,900.0	0.85	30.56	1,899.9	9.3	12.8	-9.4	0.35	0.11	-24.42	
2,000.0	0.64	37.61	1,999.9	10.3	13.6	-10.5	0.23	-0.21	7.05	
2,100.0	0.80	19.61	2,099.9	11.4	14.1	-11.6	0.28	0.16	-18.00	
2,200.0	1.09	11.26	2,199.8	13.0	14.6	-13.2	0.32	0.29	-8.35	
2,300.0	1.51	2.45	2,299.8	15.3	14.8	-15.5	0.46	0.42	-8.81	
2,400.0	1.49	14.24	2,399.8	17.9	15.2	-18.0	0.31	-0.02	11.79	
2,500.0	1.54	8.66	2,499.7	20.5	15.7	-20.6	0.16	0.05	-5.58	
2,600.0	1.44	7.81	2,599.7	23.0	16.1	-23.2	0.10	-0.10	-0.85	
2,700.0	1.38	347.22	2,699.7	25.4	16.0	-25.6	0.51	-0.06	-20.59	
2,800.0	1.22	351.35	2,799.7	27.7	15.6	-27.8	0.19	-0.16	4.13	
2,900.0	0.97	344.16	2,899.6	29.5	15.2	-29.7	0.28	-0.25	-7.19	
3,000.0	0.79	356.96	2,999.6	31.0	14.9	-31.2	0.27	-0.18	12.80	
3,100.0	0.59	23.46	3,099.6	32.2	15.1	-32.4	0.37	-0.20	26.50	
3,200.0	0.39	30.79	3,199.6	33.0	15.4	-33.1	0.21	-0.20	7.33	
3,300.0	0.77	19.91	3,299.6	33.9	15.8	-34.1	0.39	0.38	-10.88	
3,400.0	0.80	46.07	3,399.6	35.0	16.6	-35.2	0.36	0.03	26.16	
3,500.0	0.86	79.56	3,499.6	35.6	17.8	-35.8	0.48	0.06	33.49	
3,600.0	1.20	100.16	3,599.6	35.6	19.6	-35.8	0.50	0.34	20.60	
3,700.0	1.10	89.26	3,699.6	35.4	21.6	-35.6	0.24	-0.10	-10.90	
3,800.0	1.00	88.25	3,799.5	35.4	23.4	-35.7	0.10	-0.10	-1.01	
3,900.0	1.02	70.15	3,899.5	35.8	25.1	-36.1	0.32	0.02	-18.10	
4,000.0	0.99	62.99	3,999.5	36.5	26.7	-36.8	0.13	-0.03	-7.16	
4,100.0	1.23	20.77	4,099.5	37.9	27.9	-38.2	0.83	0.24	-42.22	
4,200.0	1.09	6.43	4,199.5	39.8	28.4	-40.1	0.32	-0.14	-14.34	
4,300.0	1.09	11.53	4,299.5	41.7	28.7	-42.0	0.10	0.00	5.10	
4,400.0	1.08	9.23	4,399.4	43.6	29.0	-43.9	0.04	-0.01	-2.30	
4,500.0	1.75	16.98	4,499.4	45.9	29.6	-46.3	0.70	0.67	7.75	
4,600.0	1.98	30.35	4,599.4	48.9	30.9	-49.2	0.49	0.23	13.37	
4,700.0	2.23	32.95	4,699.3	52.0	32.8	-52.4	0.27	0.25	2.60	
4,800.0	2.18	38.86	4,799.2	55.1	35.1	-55.5	0.23	-0.05	5.91	
4,900.0	1.67	41.44	4,899.2	57.7	37.3	-58.1	0.52	-0.51	2.58	
5,000.0	1.38	58.07	4,999.1	59.4	39.2	-59.9	0.53	-0.29	16.63	
5,100.0	1.85	49.63	5,099.1	61.1	41.5	-61.6	0.53	0.47	-8.44	

LEAM Drilling Systems LLC

Survey Report



Company: DEVON ENERGY
 Project: Eddy County, NM (NAD-83)
 Site: Burton Flat Deep Unit
 Well: 48H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well 48H
 TVD Reference: GE 3221' + KB 25' @ 3246.0usft (H&P 223)
 MD Reference: GE 3221' + KB 25' @ 3246.0usft (H&P 223)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.1 MULTI 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)
5,200.0	2.35	59.99	5,199.0	63.2	44.5	-63.7	0.63	0.50	10.36
5,300.0	2.74	60.30	5,298.9	65.4	48.3	-65.9	0.39	0.39	0.31
5,400.0	2.64	65.20	5,398.8	67.5	52.5	-68.1	0.25	-0.10	4.90
5,500.0	2.05	63.06	5,498.7	69.3	56.2	-69.9	0.60	-0.59	-2.14
5,600.0	1.45	83.56	5,598.7	70.3	59.1	-70.9	0.86	-0.60	20.50
5,700.0	3.36	104.79	5,698.6	69.7	63.1	-70.4	2.08	1.91	21.23
5,800.0	2.15	123.16	5,798.5	67.9	67.5	-68.6	1.48	-1.21	18.37
5,900.0	0.85	129.59	5,898.4	66.4	69.7	-67.2	1.31	-1.30	6.43
5,950.6	0.23	176.67	5,949.0	66.1	70.0	-66.8	1.41	-1.23	93.04
5,970.0	0.62	187.22	5,968.4	65.9	70.0	-66.7	2.04	2.01	54.38
6,033.0	7.56	186.17	6,031.2	61.5	69.5	-62.2	11.02	11.02	-1.67
6,065.0	11.08	190.56	6,062.8	56.3	68.7	-57.1	11.21	11.00	13.72
6,095.0	15.65	191.44	6,092.0	49.5	67.4	-50.3	15.25	15.23	2.93
6,127.0	19.52	190.56	6,122.5	40.0	65.5	-40.8	12.12	12.09	-2.75
6,158.0	22.25	189.68	6,151.4	29.2	63.6	-29.9	8.86	8.81	-2.84
6,190.0	24.62	188.45	6,180.8	16.6	61.6	-17.3	7.56	7.41	-3.84
6,221.0	26.91	187.40	6,208.7	3.2	59.7	-3.9	7.53	7.39	-3.39
6,253.0	28.67	184.76	6,237.0	-11.6	58.2	10.9	6.71	5.50	-8.25
6,284.0	31.30	181.25	6,263.9	-27.0	57.4	26.4	10.19	8.48	-11.32
6,316.0	33.77	180.72	6,290.9	-44.3	57.1	43.6	7.77	7.72	-1.66
6,347.0	36.49	180.89	6,316.2	-62.1	56.8	61.5	8.78	8.77	0.55
6,379.0	39.75	180.89	6,341.4	-81.8	56.5	81.2	10.19	10.19	0.00
6,410.0	43.00	181.60	6,364.6	-102.3	56.1	101.7	10.59	10.48	2.29
6,442.0	45.37	181.95	6,387.6	-124.6	55.4	124.0	7.45	7.41	1.09
6,473.0	48.36	181.07	6,408.8	-147.2	54.8	146.6	9.86	9.65	-2.84
6,505.0	50.74	181.60	6,429.5	-171.6	54.2	171.0	7.54	7.44	1.66
6,536.0	52.67	181.25	6,448.7	-195.9	53.6	195.3	6.29	6.23	-1.13
6,568.0	55.66	179.84	6,467.5	-221.8	53.4	221.2	10.00	9.34	-4.41
6,599.0	58.56	178.43	6,484.3	-247.8	53.8	247.2	10.10	9.35	-4.55
6,631.0	60.94	178.08	6,500.4	-275.5	54.6	274.9	7.50	7.44	-1.09
6,663.0	63.66	178.08	6,515.3	-303.8	55.6	303.2	8.50	8.50	0.00
6,694.0	66.74	177.91	6,528.3	-331.9	56.6	331.3	9.95	9.94	-0.55
6,726.0	69.38	178.43	6,540.3	-361.6	57.5	360.9	8.39	8.25	1.63
6,757.0	72.63	179.66	6,550.3	-390.9	58.0	390.2	11.13	10.48	3.97
6,789.0	74.66	180.54	6,559.4	-421.6	57.9	420.9	6.87	6.34	2.75
6,820.0	76.15	181.77	6,567.2	-451.6	57.3	450.9	6.15	4.81	3.97
6,852.0	78.88	182.13	6,574.1	-482.8	56.3	482.1	8.60	8.53	1.13
6,883.0	82.22	181.42	6,579.2	-513.4	55.3	512.7	11.01	10.77	-2.29
6,914.0	85.30	180.54	6,582.5	-544.2	54.8	543.5	10.33	9.94	-2.84
6,946.0	88.08	181.07	6,584.4	-576.1	54.3	575.5	8.84	8.69	1.66
7,041.0	90.57	182.83	6,585.5	-671.0	51.1	670.4	3.21	2.62	1.85
7,104.0	90.66	184.06	6,584.8	-733.9	47.3	733.3	1.96	0.14	1.95
7,198.0	90.48	181.95	6,583.9	-827.8	42.4	827.3	2.25	-0.19	-2.24

LEAM Drilling Systems LLC

Survey Report



Company: DEVON ENERGY
 Project: Eddy County, NM (NAD-83)
 Site: Burton Flat Deep Unit
 Well: 48H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well 48H
 TVD Reference: GE 3221' + KB 25' @ 3246.0usft (H&P 223)
 MD Reference: GE 3221' + KB 25' @ 3246.0usft (H&P 223)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.1 MULTI User DB

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)
7,293.0	90.84	181.07	6,582.8	-922.7	39.9	922.2	1.00	0.38	-0.93
7,387.0	91.19	180.89	6,581.1	-1,016.7	38.3	1,016.2	0.42	0.37	-0.19
7,482.0	90.57	180.89	6,579.7	-1,111.7	36.8	1,111.2	0.65	-0.65	0.00
7,577.0	90.40	181.42	6,578.9	-1,206.7	34.9	1,206.2	0.59	-0.18	0.56
7,671.0	90.31	181.42	6,578.3	-1,300.6	32.6	1,300.2	0.10	-0.10	0.00
7,766.0	90.31	180.89	6,577.8	-1,395.6	30.6	1,395.2	0.56	0.00	-0.56
7,861.0	90.13	180.54	6,577.4	-1,490.6	29.5	1,490.2	0.41	-0.19	-0.37
7,955.0	89.78	180.02	6,577.5	-1,584.6	29.0	1,584.2	0.67	-0.37	-0.55
8,050.0	90.22	180.19	6,577.5	-1,679.6	28.8	1,679.2	0.50	0.46	0.18
8,145.0	91.10	180.19	6,576.4	-1,774.6	28.5	1,774.2	0.93	0.93	0.00
8,239.0	91.98	180.19	6,573.9	-1,868.6	28.2	1,868.1	0.94	0.94	0.00
8,334.0	92.95	180.37	6,569.8	-1,963.5	27.7	1,963.0	1.04	1.02	0.19
8,428.0	91.80	179.31	6,565.9	-2,057.4	28.0	2,056.9	1.66	-1.22	-1.13
8,523.0	90.04	178.61	6,564.4	-2,152.3	29.7	2,151.9	1.99	-1.85	-0.74
8,618.0	90.66	178.96	6,563.8	-2,247.3	31.7	2,246.8	0.75	0.65	0.37
8,712.0	91.36	179.84	6,562.1	-2,341.3	32.7	2,340.8	1.20	0.74	0.94
8,807.0	91.10	181.07	6,560.1	-2,436.3	32.0	2,435.8	1.32	-0.27	1.29
8,901.0	91.54	181.42	6,557.9	-2,530.2	29.9	2,529.7	0.60	0.47	0.37
8,996.0	90.48	180.37	6,556.2	-2,625.2	28.4	2,624.7	1.57	-1.12	-1.11
9,091.0	90.40	180.37	6,555.5	-2,720.2	27.8	2,719.7	0.08	-0.08	0.00
9,185.0	91.19	181.25	6,554.2	-2,814.2	26.5	2,813.7	1.26	0.84	0.94
9,280.0	91.71	181.25	6,551.8	-2,909.1	24.4	2,908.7	0.55	0.55	0.00
9,375.0	90.13	180.37	6,550.3	-3,004.1	23.1	3,003.7	1.90	-1.66	-0.93
9,469.0	89.87	180.54	6,550.3	-3,098.1	22.3	3,097.7	0.33	-0.28	0.18
9,564.0	91.10	180.72	6,549.5	-3,193.1	21.3	3,192.6	1.31	1.29	0.19
9,659.0	89.87	180.19	6,548.7	-3,288.1	20.5	3,287.6	1.41	-1.29	-0.56
9,753.0	89.96	180.54	6,548.8	-3,382.1	19.9	3,381.6	0.38	0.10	0.37
9,848.0	88.99	180.37	6,549.7	-3,477.1	19.2	3,476.6	1.04	-1.02	-0.18
9,942.0	89.16	180.37	6,551.2	-3,571.0	18.6	3,570.6	0.18	0.18	0.00
10,037.0	89.52	181.07	6,552.3	-3,666.0	17.4	3,665.6	0.83	0.38	0.74
10,131.0	89.52	181.77	6,553.1	-3,760.0	15.1	3,759.6	0.74	0.00	0.74
10,226.0	89.78	181.77	6,553.7	-3,855.0	12.1	3,854.6	0.27	0.27	0.00
10,321.0	89.87	181.60	6,554.0	-3,949.9	9.3	3,949.6	0.20	0.09	-0.18
10,415.0	90.04	181.77	6,554.0	-4,043.9	6.6	4,043.5	0.26	0.18	0.18
10,510.0	90.57	181.42	6,553.5	-4,138.8	3.9	4,138.5	0.67	0.56	-0.37
10,604.0	91.71	182.30	6,551.7	-4,232.8	0.9	4,232.5	1.53	1.21	0.94
10,731.0	91.71	182.30	6,547.9	-4,359.6	-4.2	4,359.4	0.00	0.00	0.00
Projection to Bit									

LEAM Drilling Systems LLC

Survey Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 48H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3221' + KB 25' @ 3246.0usft (H&P 223)
Site:	Burton Flat Deep Unit	MD Reference:	GE 3221' + KB 25' @ 3246.0usft (H&P 223)
Well:	48H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01	Database:	EDM 5000.1 MULTI 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:	Burton Flat Deep Unit				
Site Position:		Northing:	548,073.21 usft	Latitude:	32° 30' 23.782 N
From:	Map	Easting:	592,066.43 usft	Longitude:	104° 10' 7.587 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.09 °

Well:	48H					
Well Position	+N/-S	0.0 usft	Northing:	561,522.67 usft	Latitude:	32° 32' 36.904 N
	+E/-W	0.0 usft	Easting:	589,949.62 usft	Longitude:	104° 10' 32.075 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,221.0 usft

Wellbore:	ST01				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	IGRF2010	12/9/2012	(°)	(°)	(nT)
			7.71	60.34	48,595

Design:	ST01				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	10,037.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.0	0.0	0.0	180.50	

Survey Program	Date:	2/19/2013			
From	To	Survey (Wellbore)	Tool Name	Description	
(usft)	(usft)				
100.0	5,950.6	Survey #1 (OH)	NS-GYRO-MS	North sensing gyrocompassing m/s	
5,970.0	10,037.0	Survey #2 (OH)	LEAM MWD	MWD - Standard	
10,132.0	13,594.0	Survey #1 (ST01)	LEAM MWD	MWD - Standard	
13,648.0	13,648.0	Survey #2 (ST01)	Project	Projection	

Survey									
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate
(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.62	259.46	100.0	-0.1	-0.5	0.1	0.62	0.62	0.00
200.0	0.69	19.44	200.0	0.4	-0.9	-0.4	1.13	0.07	119.98
300.0	1.01	18.33	300.0	1.8	-0.4	-1.8	0.32	0.32	-1.11
400.0	1.12	15.03	400.0	3.6	0.1	-3.6	0.13	0.11	-3.30
500.0	0.62	358.07	500.0	5.0	0.4	-5.0	0.56	-0.50	-16.96
600.0	0.31	52.54	600.0	5.7	0.6	-5.7	0.51	-0.31	54.47
700.0	0.23	52.93	700.0	6.0	1.0	-6.0	0.08	-0.08	0.39

LEAM Drilling Systems LLC

Survey Report



Company: DEVON ENERGY
 Project: Eddy County, NM (NAD-83)
 Site: Burton Flat Deep Unit
 Well: 48H
 Wellbore: ST01
 Design: ST01

Local Co-ordinate Reference: Well 48H
 TVD Reference: GE 3221' + KB 25' @ 3246.0usft (H&P 223)
 MD Reference: GE 3221' + KB 25' @ 3246.0usft (H&P 223)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.1 MULTI User DB

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)
800.0	0.23	154.88	800.0	6.0	1.2	-6.0	0.36	0.00	101.95
900.0	0.52	106.80	899.9	5.7	1.7	-5.7	0.40	0.29	-48.08
1,000.0	0.69	88.93	999.9	5.5	2.8	-5.6	0.25	0.17	-17.87
1,100.0	0.63	94.90	1,099.9	5.5	3.9	-5.5	0.09	-0.06	5.97
1,200.0	0.73	83.60	1,199.9	5.5	5.1	-5.6	0.17	0.10	-11.30
1,300.0	0.72	79.99	1,299.9	5.7	6.3	-5.8	0.05	-0.01	-3.61
1,400.0	0.40	83.17	1,399.9	5.9	7.3	-5.9	0.32	-0.32	3.18
1,500.0	0.82	62.91	1,499.9	6.2	8.3	-6.3	0.47	0.42	-20.26
1,600.0	0.86	61.30	1,599.9	6.9	9.6	-7.0	0.05	0.04	-1.61
1,700.0	0.76	62.20	1,699.9	7.6	10.8	-7.7	0.10	-0.10	0.90
1,800.0	0.74	54.98	1,799.9	8.3	11.9	-8.4	0.10	-0.02	-7.22
1,900.0	0.85	30.56	1,899.9	9.3	12.8	-9.4	0.35	0.11	-24.42
2,000.0	0.64	37.61	1,999.9	10.3	13.6	-10.5	0.23	-0.21	7.05
2,100.0	0.80	19.61	2,099.9	11.4	14.1	-11.6	0.28	0.16	-18.00
2,200.0	1.09	11.26	2,199.8	13.0	14.6	-13.2	0.32	0.29	-8.35
2,300.0	1.51	2.45	2,299.8	15.3	14.8	-15.4	0.46	0.42	-8.81
2,400.0	1.49	14.24	2,399.8	17.9	15.2	-18.0	0.31	-0.02	11.79
2,500.0	1.54	8.66	2,499.7	20.5	15.7	-20.6	0.16	0.05	-5.58
2,600.0	1.44	7.81	2,599.7	23.0	16.1	-23.2	0.10	-0.10	-0.85
2,700.0	1.38	347.22	2,699.7	25.4	16.0	-25.6	0.51	-0.06	-20.59
2,800.0	1.22	351.35	2,799.7	27.7	15.6	-27.8	0.19	-0.16	4.13
2,900.0	0.97	344.16	2,899.6	29.5	15.2	-29.7	0.28	-0.25	-7.19
3,000.0	0.79	356.96	2,999.6	31.0	14.9	-31.2	0.27	-0.18	12.80
3,100.0	0.59	23.46	3,099.6	32.2	15.1	-32.3	0.37	-0.20	26.50
3,200.0	0.39	30.79	3,199.6	33.0	15.4	-33.1	0.21	-0.20	7.33
3,300.0	0.77	19.91	3,299.6	33.9	15.8	-34.0	0.39	0.38	-10.88
3,400.0	0.80	46.07	3,399.6	35.0	16.6	-35.2	0.36	0.03	26.16
3,500.0	0.86	79.56	3,499.6	35.6	17.8	-35.8	0.48	0.06	33.49
3,600.0	1.20	100.16	3,599.6	35.6	19.6	-35.7	0.50	0.34	20.60
3,700.0	1.10	89.26	3,699.6	35.4	21.6	-35.6	0.24	-0.10	-10.90
3,800.0	1.00	88.25	3,799.5	35.4	23.4	-35.6	0.10	-0.10	-1.01
3,900.0	1.02	70.15	3,899.5	35.8	25.1	-36.0	0.32	0.02	-18.10
4,000.0	0.99	62.99	3,999.5	36.5	26.7	-36.7	0.13	-0.03	-7.16
4,100.0	1.23	20.77	4,099.5	37.9	27.9	-38.1	0.83	0.24	-42.22
4,200.0	1.09	6.43	4,199.5	39.8	28.4	-40.1	0.32	-0.14	-14.34
4,300.0	1.09	11.53	4,299.5	41.7	28.7	-41.9	0.10	0.00	5.10
4,400.0	1.08	9.23	4,399.4	43.6	29.0	-43.8	0.04	-0.01	-2.30
4,500.0	1.75	16.98	4,499.4	45.9	29.6	-46.2	0.70	0.67	7.75
4,600.0	1.98	30.35	4,599.4	48.9	30.9	-49.2	0.49	0.23	13.37
4,700.0	2.23	32.95	4,699.3	52.0	32.8	-52.3	0.27	0.25	2.60
4,800.0	2.18	38.86	4,799.2	55.1	35.1	-55.4	0.23	-0.05	5.91
4,900.0	1.67	41.44	4,899.2	57.7	37.3	-58.0	0.52	-0.51	2.58
5,000.0	1.38	58.07	4,999.1	59.4	39.2	-59.8	0.53	-0.29	16.63

LEAM Drilling Systems LLC

Survey Report



Company: DEVON ENERGY
Project: Eddy County, NM (NAD-83)
Site: Burton Flat Deep Unit
Well: 48H
Wellbore: ST01
Design: ST01

Local Co-ordinate Reference: Well 48H
TVD Reference: GE 3221' + KB 25' @ 3246.0usft (H&P 223)
MD Reference: GE 3221' + KB 25' @ 3246.0usft (H&P 223)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 MULTI User DB

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)
5,100.0	1.85	49.63	5,099.1	61.1	41.5	-61.5	0.53	0.47	-8.44
5,200.0	2.35	59.99	5,199.0	63.2	44.5	-63.6	0.63	0.50	10.36
5,300.0	2.74	60.30	5,298.9	65.4	48.3	-65.8	0.39	0.39	0.31
5,400.0	2.64	65.20	5,398.8	67.5	52.5	-68.0	0.25	-0.10	4.90
5,500.0	2.05	63.06	5,498.7	69.3	56.2	-69.8	0.60	-0.59	-2.14
5,600.0	1.45	83.56	5,598.7	70.3	59.1	-70.8	0.86	-0.60	20.50
5,700.0	3.36	104.79	5,698.6	69.7	63.1	-70.2	2.08	1.91	21.23
5,800.0	2.15	123.16	5,798.5	67.9	67.5	-68.5	1.48	-1.21	18.37
5,900.0	0.85	129.59	5,898.4	66.4	69.7	-67.0	1.31	-1.30	6.43
5,950.6	0.23	176.67	5,949.0	66.1	70.0	-66.7	1.41	-1.23	93.04
5,970.0	0.62	187.22	5,968.4	65.9	70.0	-66.5	2.04	2.01	54.38
6,033.0	7.56	186.17	6,031.2	61.5	69.5	-62.1	11.02	11.02	-1.67
6,065.0	11.08	190.56	6,062.8	56.3	68.7	-56.9	11.21	11.00	13.72
6,095.0	15.65	191.44	6,092.0	49.5	67.4	-50.1	15.25	15.23	2.93
6,127.0	19.52	190.56	6,122.5	40.0	65.5	-40.6	12.12	12.09	-2.75
6,158.0	22.25	189.68	6,151.4	29.2	63.6	-29.7	8.86	8.81	-2.84
6,190.0	24.62	188.45	6,180.8	16.6	61.6	-17.1	7.56	7.41	-3.84
6,221.0	26.91	187.40	6,208.7	3.2	59.7	-3.8	7.53	7.39	-3.39
6,253.0	28.67	184.76	6,237.0	-11.6	58.2	11.1	6.71	5.50	-8.25
6,284.0	31.30	181.25	6,263.9	-27.0	57.4	26.5	10.19	8.48	-11.32
6,316.0	33.77	180.72	6,290.9	-44.3	57.1	43.8	7.77	7.72	-1.66
6,347.0	36.49	180.89	6,316.2	-62.1	56.8	61.6	8.78	8.77	0.55
6,379.0	39.75	180.89	6,341.4	-81.8	56.5	81.3	10.19	10.19	0.00
6,410.0	43.00	181.60	6,364.6	-102.3	56.1	101.8	10.59	10.48	2.29
6,442.0	45.37	181.95	6,387.6	-124.6	55.4	124.1	7.45	7.41	1.09
6,473.0	48.36	181.07	6,408.8	-147.2	54.8	146.7	9.86	9.65	-2.84
6,505.0	50.74	181.60	6,429.5	-171.6	54.2	171.1	7.54	7.44	1.66
6,536.0	52.67	181.25	6,448.7	-195.9	53.6	195.4	6.29	6.23	-1.13
6,568.0	55.66	179.84	6,467.5	-221.8	53.4	221.4	10.00	9.34	-4.41
6,599.0	58.56	178.43	6,484.3	-247.8	53.8	247.4	10.10	9.35	-4.55
6,631.0	60.94	178.08	6,500.4	-275.5	54.6	275.0	7.50	7.44	-1.09
6,663.0	63.66	178.08	6,515.3	-303.8	55.6	303.3	8.50	8.50	0.00
6,694.0	66.74	177.91	6,528.3	-331.9	56.6	331.4	9.95	9.94	-0.55
6,726.0	69.38	178.43	6,540.3	-361.6	57.5	361.1	8.39	8.25	1.63
6,757.0	72.63	179.66	6,550.3	-390.9	58.0	390.4	11.13	10.48	3.97
6,789.0	74.66	180.54	6,559.4	-421.6	57.9	421.1	6.87	6.34	2.75
6,820.0	76.15	181.77	6,567.2	-451.6	57.3	451.1	6.15	4.81	3.97
6,852.0	78.88	182.13	6,574.1	-482.8	56.3	482.3	8.60	8.53	1.13
6,883.0	82.22	181.42	6,579.2	-513.4	55.3	512.9	11.01	10.77	-2.29
6,914.0	85.30	180.54	6,582.5	-544.2	54.8	543.7	10.33	9.94	-2.84
6,946.0	88.08	181.07	6,584.4	-576.1	54.3	575.6	8.84	8.69	1.66
7,041.0	90.57	182.83	6,585.5	-671.0	51.1	670.6	3.21	2.62	1.85
7,104.0	90.66	184.06	6,584.8	-733.9	47.3	733.5	1.96	0.14	1.95
7,198.0	90.48	181.95	6,583.9	-827.8	42.4	827.4	2.25	-0.19	-2.24

LEAM Drilling Systems LLC

Survey Report



Company: DEVON ENERGY
 Project: Eddy County, NM (NAD-83)
 Site: Burton Flat Deep Unit
 Well: 48H
 Wellbore: ST01
 Design: ST01

Local Co-ordinate Reference: Well 48H
 TVD Reference: GE 3221' + KB 25' @ 3246.0usft (H&P 223)
 MD Reference: GE 3221' + KB 25' @ 3246.0usft (H&P 223)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.1 MULTI User DB

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)
7,293.0	90.84	181.07	6,582.8	-922.7	39.9	922.4	1.00	0.38	-0.93
7,387.0	91.19	180.89	6,581.1	-1,016.7	38.3	1,016.3	0.42	0.37	-0.19
7,482.0	90.57	180.89	6,579.7	-1,111.7	36.8	1,111.3	0.65	-0.65	0.00
7,577.0	90.40	181.42	6,578.9	-1,206.7	34.9	1,206.3	0.59	-0.18	0.56
7,671.0	90.31	181.42	6,578.3	-1,300.6	32.6	1,300.3	0.10	-0.10	0.00
7,766.0	90.31	180.89	6,577.8	-1,395.6	30.6	1,395.3	0.56	0.00	-0.56
7,861.0	90.13	180.54	6,577.4	-1,490.6	29.5	1,490.3	0.41	-0.19	-0.37
7,955.0	89.78	180.02	6,577.5	-1,584.6	29.0	1,584.3	0.67	-0.37	-0.55
8,050.0	90.22	180.19	6,577.5	-1,679.6	28.8	1,679.3	0.50	0.46	0.18
8,145.0	91.10	180.19	6,576.4	-1,774.6	28.5	1,774.3	0.93	0.93	0.00
8,239.0	91.98	180.19	6,573.9	-1,868.6	28.2	1,868.2	0.94	0.94	0.00
8,334.0	92.95	180.37	6,569.8	-1,963.5	27.7	1,963.1	1.04	1.02	0.19
8,428.0	91.80	179.31	6,565.9	-2,057.4	28.0	2,057.1	1.66	-1.22	-1.13
8,523.0	90.04	178.61	6,564.4	-2,152.3	29.7	2,152.0	1.99	-1.85	-0.74
8,618.0	90.66	178.96	6,563.8	-2,247.3	31.7	2,247.0	0.75	0.65	0.37
8,712.0	91.36	179.84	6,562.1	-2,341.3	32.7	2,340.9	1.20	0.74	0.94
8,807.0	91.10	181.07	6,560.1	-2,436.3	32.0	2,435.9	1.32	-0.27	1.29
8,901.0	91.54	181.42	6,557.9	-2,530.2	29.9	2,529.9	0.60	0.47	0.37
8,996.0	90.48	180.37	6,556.2	-2,625.2	28.4	2,624.9	1.57	-1.12	-1.11
9,091.0	90.40	180.37	6,555.5	-2,720.2	27.8	2,719.8	0.08	-0.08	0.00
9,185.0	91.19	181.25	6,554.2	-2,814.2	26.5	2,813.8	1.26	0.84	0.94
9,280.0	91.71	181.25	6,551.8	-2,909.1	24.4	2,908.8	0.55	0.55	0.00
9,375.0	90.13	180.37	6,550.3	-3,004.1	23.1	3,003.8	1.90	-1.66	-0.93
9,469.0	89.87	180.54	6,550.3	-3,098.1	22.3	3,097.8	0.33	-0.28	0.18
9,564.0	91.10	180.72	6,549.5	-3,193.1	21.3	3,192.8	1.31	1.29	0.19
9,659.0	89.87	180.19	6,548.7	-3,288.1	20.5	3,287.8	1.41	-1.29	-0.56
9,753.0	89.96	180.54	6,548.8	-3,382.1	19.9	3,381.8	0.38	0.10	0.37
9,848.0	88.99	180.37	6,549.7	-3,477.1	19.2	3,476.8	1.04	-1.02	-0.18
9,942.0	89.16	180.37	6,551.2	-3,571.0	18.6	3,570.7	0.18	0.18	0.00
10,037.0	89.52	181.07	6,552.3	-3,666.0	17.4	3,665.7	0.83	0.38	0.74
10,132.0	88.99	181.95	6,553.5	-3,761.0	14.9	3,760.7	1.08	-0.56	0.93
10,226.0	87.85	185.64	6,556.1	-3,854.7	8.7	3,854.5	4.11	-1.21	3.93
10,321.0	87.76	185.29	6,559.8	-3,949.2	-0.4	3,949.1	0.38	-0.09	-0.37
10,416.0	87.32	184.94	6,563.8	-4,043.8	-8.8	4,043.7	0.59	-0.46	-0.37
10,510.0	89.25	184.76	6,566.7	-4,137.4	-16.8	4,137.4	2.06	2.05	-0.19
10,605.0	89.96	184.59	6,567.3	-4,232.1	-24.5	4,232.1	0.77	0.75	-0.18
10,699.0	91.01	184.41	6,566.5	-4,325.8	-31.9	4,325.9	1.13	1.12	-0.19
10,797.0	94.97	184.94	6,561.4	-4,423.3	-39.9	4,423.5	4.08	4.04	0.54
10,892.0	93.21	183.88	6,554.6	-4,517.8	-47.2	4,518.0	2.16	-1.85	-1.12
10,986.0	90.84	182.48	6,551.3	-4,611.5	-52.4	4,611.8	2.93	-2.52	-1.49
11,081.0	90.13	180.72	6,550.5	-4,706.5	-55.0	4,706.8	2.00	-0.75	-1.85
11,175.0	88.90	179.14	6,551.3	-4,800.5	-54.9	4,800.8	2.13	-1.31	-1.68
11,270.0	87.93	177.38	6,553.9	-4,895.4	-52.0	4,895.7	2.11	-1.02	-1.85

LEAM Drilling Systems LLC

Survey Report



Company: DEVON ENERGY
Project: Eddy County, NM (NAD-83)
Site: Burton Flat Deep Unit
Well: 48H
Wellbore: ST01
Design: ST01

Local Co-ordinate Reference: Well 48H
TVD Reference: GE 3221' + KB 25' @ 3246.0usft (H&P 223)
MD Reference: GE 3221' + KB 25' @ 3246.0usft (H&P 223)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 MULTI 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)	
11,365.0	88.29	177.03	6,557.1	-4,990.2	-47.4	4,990.5	0.53	0.38	-0.37	
11,459.0	90.22	177.38	6,558.3	-5,084.1	-42.8	5,084.3	2.09	2.05	0.37	
11,554.0	89.96	176.32	6,558.1	-5,179.0	-37.6	5,179.1	1.15	-0.27	-1.12	
11,649.0	90.84	176.15	6,557.5	-5,273.8	-31.3	5,273.8	0.94	0.93	-0.18	
11,743.0	91.89	176.50	6,555.2	-5,367.5	-25.3	5,367.6	1.18	1.12	0.37	
11,838.0	92.15	176.68	6,551.9	-5,462.3	-19.7	5,462.3	0.33	0.27	0.19	
11,932.0	91.98	177.20	6,548.5	-5,556.1	-14.7	5,556.0	0.58	-0.18	0.55	
12,027.0	91.45	176.85	6,545.6	-5,651.0	-9.7	5,650.8	0.67	-0.56	-0.37	
12,122.0	90.04	177.20	6,544.4	-5,745.8	-4.8	5,745.6	1.53	-1.48	0.37	
12,216.0	88.99	177.73	6,545.2	-5,839.7	-0.6	5,839.5	1.25	-1.12	0.56	
12,311.0	87.93	180.02	6,547.8	-5,934.7	1.2	5,934.4	2.66	-1.12	2.41	
12,405.0	88.20	181.95	6,550.9	-6,028.6	-0.4	6,028.4	2.07	0.29	2.05	
12,500.0	89.78	182.83	6,552.6	-6,123.5	-4.4	6,123.3	1.90	1.66	0.93	
12,595.0	91.28	182.48	6,551.7	-6,218.4	-8.8	6,218.2	1.62	1.58	-0.37	
12,689.0	91.71	181.77	6,549.3	-6,312.3	-12.2	6,312.1	0.88	0.46	-0.76	
12,784.0	93.21	181.95	6,545.2	-6,407.1	-15.3	6,407.0	1.59	1.58	0.19	
12,879.0	93.56	182.48	6,539.6	-6,501.9	-19.0	6,501.8	0.67	0.37	0.56	
12,973.0	93.74	183.18	6,533.6	-6,595.6	-23.6	6,595.5	0.77	0.19	0.74	
13,068.0	93.47	183.00	6,527.6	-6,690.3	-28.7	6,690.3	0.34	-0.28	-0.19	
13,163.0	92.07	182.83	6,523.0	-6,785.0	-33.6	6,785.1	1.48	-1.47	-0.18	
13,257.0	91.01	182.83	6,520.5	-6,878.9	-38.2	6,879.0	1.13	-1.13	0.00	
13,351.0	90.48	183.36	6,519.3	-6,972.7	-43.3	6,972.8	0.80	-0.56	0.56	
13,446.0	90.40	183.71	6,518.6	-7,067.6	-49.1	7,067.7	0.38	-0.08	0.37	
13,541.0	90.04	183.88	6,518.2	-7,162.3	-55.4	7,162.6	0.42	-0.38	0.18	
13,594.0	90.13	184.41	6,518.1	-7,215.2	-59.2	7,215.4	1.01	0.17	1.00	
13,648.0	90.13	184.41	6,518.0	-7,269.0	-63.4	7,269.3	0.00	0.00	0.00	
Projection to Bit										