

Devon Energy

Project: Lea County, NM (NAD-83)
Site: Thistle Unit Sec 22-27 Trac Pad
Well: Thistle Unit 111H
Wellbore: OH
Design: Plan #3



Azimuths to Grid North
True North: -0.42°
Magnetic North: 6.43°
Magnetic Field
Strength: 48158.5snT
Dip Angle: 60.08°
Date: 9/20/2017
Model: HDGM

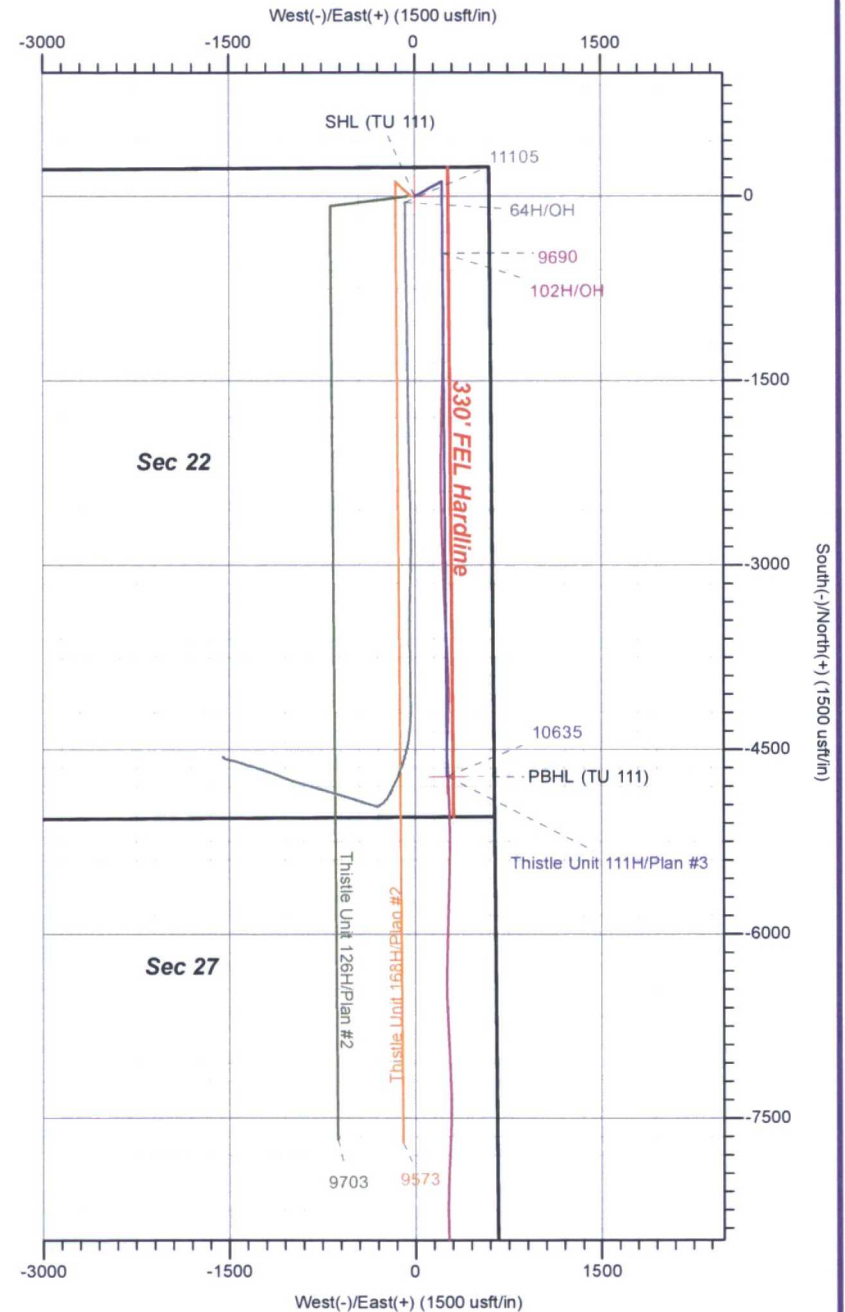
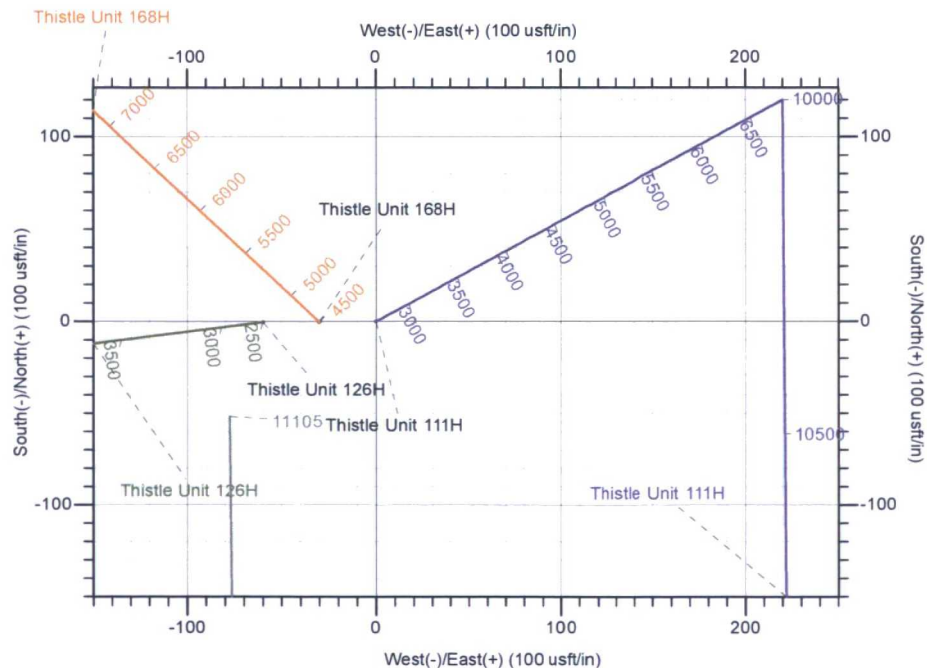


PROJECT DETAILS: Lea County, NM (NAD-83)
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone

SECTION DETAILS										
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	0.00	0.00	
2845.17	3.45	61.39	2844.96	4.98	9.12	1.00	61.39	-4.48		
6662.17	3.45	61.39	6655.04	115.02	210.88	0.00	0.00	-103.45		
7007.34	0.00	0.00	7000.00	120.00	220.00	1.00	180.00	-107.93		
10089.39	0.00	0.00	10082.05	120.00	220.00	0.00	0.00	-107.93		
10992.08	90.27	179.58	10655.00	-455.63	224.24	10.00	179.58	467.09		
15257.47	90.27	179.58	10635.00	-4720.86	255.62	0.00	0.00	4727.78	PBHL (TU 111)	

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL (TU 111)	10635.00	-4720.86	255.62	467869.58	782517.47	32° 17' 1.8087 N	103° 33' 10.4404 W
SHL (TU 111)	0.00	0.00	0.00	472590.44	782261.85	32° 17' 48.5402 N	103° 33' 13.0182 W



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

Plan: Plan #3 (Thistle Unit 111H/OH)
Thistle Unit Sec 22-27 Trac Pad
Created By: Dustin Ault
Date: 12:50, December 14 2017
Approved: _____
Date: _____

Devon Energy

Project: Lea County, NM (NAD-83)
Site: Thistle Unit Sec 22-27 Trac Pad
Well: Thistle Unit 111H

Wellbore: OH
Design: Plan #3

3707.4' GE + 23.5' KB @ 3730.90usft
Ground Level: 3707.60

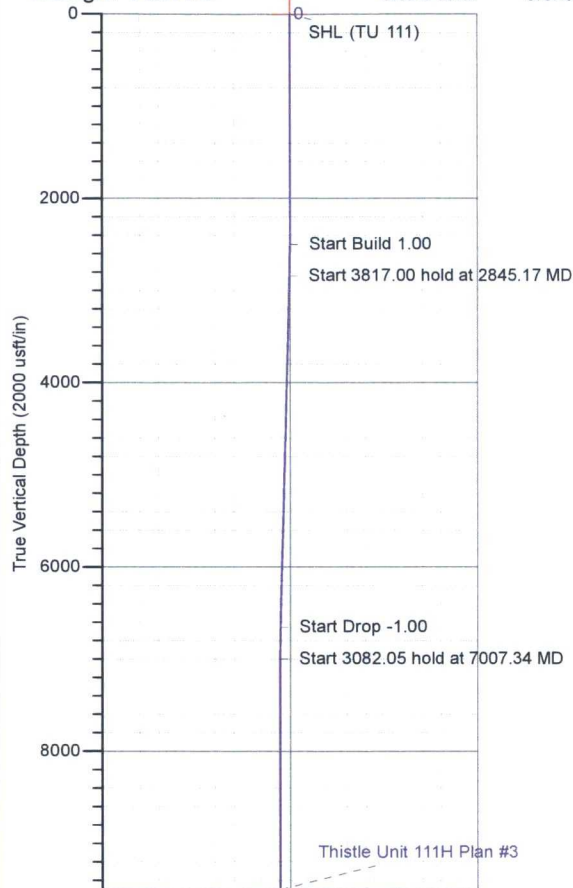


Azimuths to Grid North
True North: -0.42°
Magnetic North: 6.43°

Magnetic Field
Strength: 48158.5nT
Dip Angle: 60.08°
Date: 9/20/2017
Model: HDGM

PROJECT DETAILS: Lea County, NM (NAD-83)

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone

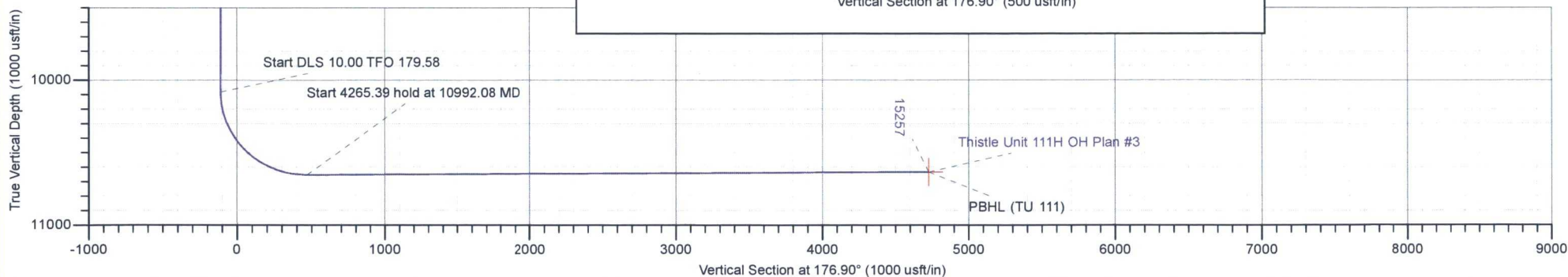
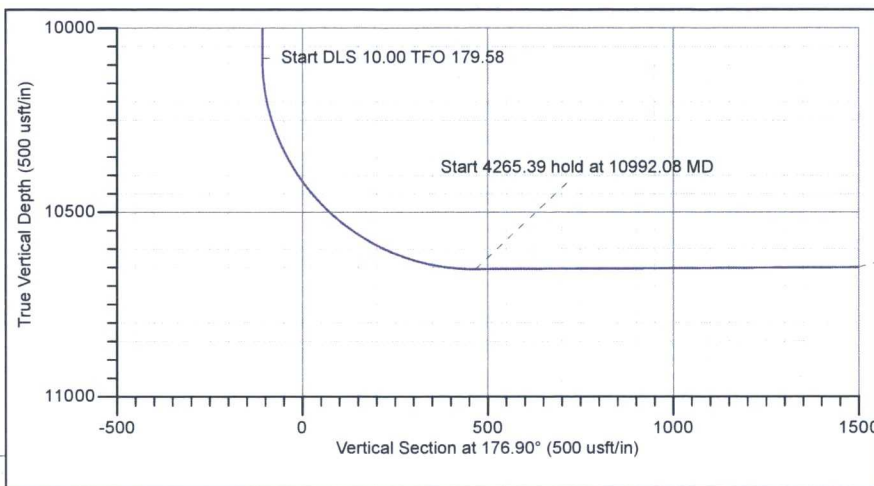


MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	0.00	Start Build 1.00
2845.17	3.45	61.39	2844.96	4.98	9.12	1.00	61.39	-4.48	Start 3817.00 hold at 2845.17 MD
6662.17	3.45	61.39	6655.04	115.02	210.88	0.00	0.00	-103.45	Start Drop -1.00
7007.34	0.00	0.00	7000.00	120.00	220.00	1.00	180.00	-107.93	Start 3082.05 hold at 7007.34 MD
10089.39	0.00	0.00	10082.05	120.00	220.00	0.00	0.00	-107.93	Start DLS 10.00 TFO 179.58
10992.08	90.27	179.58	10655.00	-455.63	224.24	10.00	179.58	467.09	Start 4265.39 hold at 10992.08 MD
15257.47	90.27	179.58	10635.00	-4720.86	255.62	0.00	0.00	4727.78	TD at 15257.47

SECTION DETAILS

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
PBHL (TU 111)	10635.00	-4720.86	255.62	32° 17' 1.8087 N	103° 33' 10.4404 W
SHL (TU 111)	0.00	0.00	0.00	32° 17' 48.5402 N	103° 33' 13.0182 W



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

Plan: Plan #3 (Thistle Unit 111H/OH)
Thistle Unit Sec 22-27 Trac Pad
Created By: Dustin Ault
Date: 11:30, December 14 2017
Approved: _____ Date: _____

Devon Energy

Lea County, NM (NAD-83)

Thistle Unit Sec 22-27 Trac Pad

Thistle Unit 111H

OH

Plan #3

Anticollision Report

14 December, 2017

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Multi User Db	Local Co-ordinate Reference:	Well Thistle Unit 111H
Company:	Devon Energy	TVD Reference:	3707.4' GE + 23.5' KB @ 3730.90usft
Project:	Lea County, NM (NAD-83)	MD Reference:	3707.4' GE + 23.5' KB @ 3730.90usft
Site:	Thistle Unit Sec 22-27 Trac Pad	North Reference:	Grid
Well:	Thistle Unit 111H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

Project	Lea 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						Thistle Unit Sec 22-27 Trac Pad											
Site Position:			Northing:			472,548.43 usft			Latitude:			32° 17' 48.4331 N					
From:		Map		Easting:			777,932.69 usft			Longitude:			103° 34' 3.4563 W				
Position Uncertainty:			0.00 usft			Slot Radius:			13-3/16 "			Grid Convergence:			0.41 °		

Well	Thistle Unit 111H					
Well Position	+N/-S	42.01 usft	Northing:	472,590.44 usft	Latitude:	32° 17' 48.5402 N
	+E/-W	4,329.16 usft	Easting:	782,261.85 usft	Longitude:	103° 33' 13.0182 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,707.60 usft

Wellbore	OH
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	9/20/2017	6.85	60.08	48,159

Design	Plan #3			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	176.90

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,845.17	3.45	61.39	2,844.96	4.98	9.12	1.00	1.00	0.00	61.39	
6,662.17	3.45	61.39	6,655.04	115.02	210.88	0.00	0.00	0.00	0.00	
7,007.34	0.00	0.00	7,000.00	120.00	220.00	1.00	-1.00	0.00	180.00	
10,089.39	0.00	0.00	10,082.05	120.00	220.00	0.00	0.00	0.00	0.00	
10,992.08	90.27	179.58	10,655.00	-455.63	224.24	10.00	10.00	19.89	179.58	
15,257.47	90.27	179.58	10,635.00	-4,720.86	255.62	0.00	0.00	0.00	0.00	PBHL (TU 111)

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Multi User Db	Local Co-ordinate Reference:	Well Thistle Unit 111H
Company:	Devon Energy	TVD Reference:	3707.4' GE + 23.5' KB @ 3730.90usft
Project:	Lea County, NM (NAD-83)	MD Reference:	3707.4' GE + 23.5' KB @ 3730.90usft
Site:	Thistle Unit Sec 22-27 Trac Pad	North Reference:	Grid
Well:	Thistle Unit 111H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

Planned 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
SHL (TU 111)									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 1.00									
2,600.00	1.00	61.39	2,599.99	0.42	0.77	-0.38	1.00	1.00	0.00
2,700.00	2.00	61.39	2,699.96	1.67	3.06	-1.50	1.00	1.00	0.00
2,800.00	3.00	61.39	2,799.86	3.76	6.89	-3.38	1.00	1.00	0.00
2,845.17	3.45	61.39	2,844.96	4.98	9.12	-4.48	1.00	1.00	0.00
Start 3817.00 hold at 2845.17 MD									
2,900.00	3.45	61.39	2,899.69	6.56	12.02	-5.90	0.00	0.00	0.00
3,000.00	3.45	61.39	2,999.51	9.44	17.31	-8.49	0.00	0.00	0.00
3,100.00	3.45	61.39	3,099.33	12.32	22.59	-11.08	0.00	0.00	0.00
3,200.00	3.45	61.39	3,199.15	15.21	27.88	-13.68	0.00	0.00	0.00
3,300.00	3.45	61.39	3,298.97	18.09	33.17	-16.27	0.00	0.00	0.00
3,400.00	3.45	61.39	3,398.78	20.97	38.45	-18.86	0.00	0.00	0.00
3,500.00	3.45	61.39	3,498.60	23.86	43.74	-21.46	0.00	0.00	0.00
3,600.00	3.45	61.39	3,598.42	26.74	49.02	-24.05	0.00	0.00	0.00
3,700.00	3.45	61.39	3,698.24	29.62	54.31	-26.64	0.00	0.00	0.00
3,800.00	3.45	61.39	3,798.06	32.51	59.59	-29.24	0.00	0.00	0.00
3,900.00	3.45	61.39	3,897.88	35.39	64.88	-31.83	0.00	0.00	0.00
4,000.00	3.45	61.39	3,997.70	38.27	70.16	-34.42	0.00	0.00	0.00
4,100.00	3.45	61.39	4,097.51	41.15	75.45	-37.01	0.00	0.00	0.00
4,200.00	3.45	61.39	4,197.33	44.04	80.74	-39.61	0.00	0.00	0.00
4,300.00	3.45	61.39	4,297.15	46.92	86.02	-42.20	0.00	0.00	0.00
4,400.00	3.45	61.39	4,396.97	49.80	91.31	-44.79	0.00	0.00	0.00
4,500.00	3.45	61.39	4,496.79	52.69	96.59	-47.39	0.00	0.00	0.00
4,600.00	3.45	61.39	4,596.61	55.57	101.88	-49.98	0.00	0.00	0.00
4,700.00	3.45	61.39	4,696.43	58.45	107.16	-52.57	0.00	0.00	0.00
4,800.00	3.45	61.39	4,796.25	61.34	112.45	-55.17	0.00	0.00	0.00

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Multi User Db	Local Co-ordinate Reference:	Well Thistle Unit 111H
Company:	Devon Energy	TVD Reference:	3707.4' GE + 23.5' KB @ 3730.90usft
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Site:	Thistle Unit Sec 22-27 Trac Pad	North Reference:	Grid
Well:	Thistle Unit 111H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

Planned 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)
4,900.00	3.45	61.39	4,896.06	64.22	117.73	-57.76	0.00	0.00	0.00
5,000.00	3.45	61.39	4,995.88	67.10	123.02	-60.35	0.00	0.00	0.00
5,100.00	3.45	61.39	5,095.70	69.98	128.31	-62.95	0.00	0.00	0.00
5,200.00	3.45	61.39	5,195.52	72.87	133.59	-65.54	0.00	0.00	0.00
5,300.00	3.45	61.39	5,295.34	75.75	138.88	-68.13	0.00	0.00	0.00
5,400.00	3.45	61.39	5,395.16	78.63	144.16	-70.72	0.00	0.00	0.00
5,500.00	3.45	61.39	5,494.98	81.52	149.45	-73.32	0.00	0.00	0.00
5,600.00	3.45	61.39	5,594.79	84.40	154.73	-75.91	0.00	0.00	0.00
5,700.00	3.45	61.39	5,694.61	87.28	160.02	-78.50	0.00	0.00	0.00
5,800.00	3.45	61.39	5,794.43	90.17	165.30	-81.10	0.00	0.00	0.00
5,900.00	3.45	61.39	5,894.25	93.05	170.59	-83.69	0.00	0.00	0.00
6,000.00	3.45	61.39	5,994.07	95.93	175.88	-86.28	0.00	0.00	0.00
6,100.00	3.45	61.39	6,093.89	98.82	181.16	-88.88	0.00	0.00	0.00
6,200.00	3.45	61.39	6,193.71	101.70	186.45	-91.47	0.00	0.00	0.00
6,300.00	3.45	61.39	6,293.52	104.58	191.73	-94.06	0.00	0.00	0.00
6,400.00	3.45	61.39	6,393.34	107.46	197.02	-96.65	0.00	0.00	0.00
6,500.00	3.45	61.39	6,493.16	110.35	202.30	-99.25	0.00	0.00	0.00
6,600.00	3.45	61.39	6,592.98	113.23	207.59	-101.84	0.00	0.00	0.00
6,662.17	3.45	61.39	6,655.04	115.02	210.88	-103.45	0.00	0.00	0.00
Start Drop -1.00									
6,700.00	3.07	61.39	6,692.81	116.05	212.77	-104.38	1.00	-1.00	0.00
6,800.00	2.07	61.39	6,792.70	118.20	216.71	-106.31	1.00	-1.00	0.00
6,900.00	1.07	61.39	6,892.66	119.52	219.12	-107.50	1.00	-1.00	0.00
7,007.34	0.00	0.00	7,000.00	120.00	220.00	-107.93	1.00	-1.00	0.00
Start 3082.05 hold at 7007.34 MD									
7,100.00	0.00	0.00	7,092.66	120.00	220.00	-107.93	0.00	0.00	0.00
7,200.00	0.00	0.00	7,192.66	120.00	220.00	-107.93	0.00	0.00	0.00
7,300.00	0.00	0.00	7,292.66	120.00	220.00	-107.93	0.00	0.00	0.00
7,400.00	0.00	0.00	7,392.66	120.00	220.00	-107.93	0.00	0.00	0.00
7,500.00	0.00	0.00	7,492.66	120.00	220.00	-107.93	0.00	0.00	0.00
7,600.00	0.00	0.00	7,592.66	120.00	220.00	-107.93	0.00	0.00	0.00
7,700.00	0.00	0.00	7,692.66	120.00	220.00	-107.93	0.00	0.00	0.00
7,800.00	0.00	0.00	7,792.66	120.00	220.00	-107.93	0.00	0.00	0.00
7,900.00	0.00	0.00	7,892.66	120.00	220.00	-107.93	0.00	0.00	0.00
8,000.00	0.00	0.00	7,992.66	120.00	220.00	-107.93	0.00	0.00	0.00
8,100.00	0.00	0.00	8,092.66	120.00	220.00	-107.93	0.00	0.00	0.00
8,200.00	0.00	0.00	8,192.66	120.00	220.00	-107.93	0.00	0.00	0.00
8,300.00	0.00	0.00	8,292.66	120.00	220.00	-107.93	0.00	0.00	0.00
8,400.00	0.00	0.00	8,392.66	120.00	220.00	-107.93	0.00	0.00	0.00
8,500.00	0.00	0.00	8,492.66	120.00	220.00	-107.93	0.00	0.00	0.00
8,600.00	0.00	0.00	8,592.66	120.00	220.00	-107.93	0.00	0.00	0.00
8,700.00	0.00	0.00	8,692.66	120.00	220.00	-107.93	0.00	0.00	0.00
8,800.00	0.00	0.00	8,792.66	120.00	220.00	-107.93	0.00	0.00	0.00
8,900.00	0.00	0.00	8,892.66	120.00	220.00	-107.93	0.00	0.00	0.00
9,000.00	0.00	0.00	8,992.66	120.00	220.00	-107.93	0.00	0.00	0.00
9,100.00	0.00	0.00	9,092.66	120.00	220.00	-107.93	0.00	0.00	0.00
9,200.00	0.00	0.00	9,192.66	120.00	220.00	-107.93	0.00	0.00	0.00
9,300.00	0.00	0.00	9,292.66	120.00	220.00	-107.93	0.00	0.00	0.00
9,400.00	0.00	0.00	9,392.66	120.00	220.00	-107.93	0.00	0.00	0.00
9,500.00	0.00	0.00	9,492.66	120.00	220.00	-107.93	0.00	0.00	0.00
9,600.00	0.00	0.00	9,592.66	120.00	220.00	-107.93	0.00	0.00	0.00
9,700.00	0.00	0.00	9,692.66	120.00	220.00	-107.93	0.00	0.00	0.00
9,800.00	0.00	0.00	9,792.66	120.00	220.00	-107.93	0.00	0.00	0.00
9,900.00	0.00	0.00	9,892.66	120.00	220.00	-107.93	0.00	0.00	0.00

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Multi User Db	Local Co-ordinate Reference:	Well Thistle Unit 111H
Company:	Devon Energy	TVD Reference:	3707.4' GE + 23.5' KB @ 3730.90usft
Project:	Lea County, NM (NAD-83)	MD Reference:	3707.4' GE + 23.5' KB @ 3730.90usft
Site:	Thistle Unit Sec 22-27 Trac Pad	North Reference:	Grid
Well:	Thistle Unit 111H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

Planned 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)
10,000.00	0.00	0.00	9,992.66	120.00	220.00	-107.93	0.00	0.00	0.00
10,089.39	0.00	0.00	10,082.05	120.00	220.00	-107.93	0.00	0.00	0.00
Start DLS 10.00 TFO 179.58									
10,100.00	1.06	179.58	10,092.66	119.90	220.00	-107.83	10.00	10.00	0.00
10,150.00	6.06	179.58	10,142.55	116.80	220.02	-104.73	10.00	10.00	0.00
10,200.00	11.06	179.58	10,191.97	109.36	220.08	-97.30	10.00	10.00	0.00
10,250.00	16.06	179.58	10,240.56	97.64	220.16	-85.59	10.00	10.00	0.00
10,300.00	21.06	179.58	10,287.95	81.73	220.28	-69.70	10.00	10.00	0.00
10,350.00	26.06	179.58	10,333.76	61.75	220.43	-49.74	10.00	10.00	0.00
10,400.00	31.06	179.58	10,377.67	37.85	220.60	-25.87	10.00	10.00	0.00
10,450.00	36.06	179.58	10,419.32	10.22	220.81	1.73	10.00	10.00	0.00
10,500.00	41.06	179.58	10,458.40	-20.94	221.04	32.86	10.00	10.00	0.00
10,550.00	46.06	179.58	10,494.62	-55.38	221.29	67.26	10.00	10.00	0.00
10,600.00	51.06	179.58	10,527.70	-92.85	221.57	104.69	10.00	10.00	0.00
10,650.00	56.06	179.58	10,557.39	-133.06	221.86	144.86	10.00	10.00	0.00
10,700.00	61.06	179.58	10,583.46	-175.71	222.18	187.46	10.00	10.00	0.00
10,750.00	66.06	179.58	10,605.72	-220.46	222.51	232.17	10.00	10.00	0.00
10,800.00	71.06	179.58	10,623.99	-266.99	222.85	278.64	10.00	10.00	0.00
10,850.00	76.06	179.58	10,638.14	-314.92	223.20	326.53	10.00	10.00	0.00
10,900.00	81.06	179.58	10,648.05	-363.91	223.56	375.47	10.00	10.00	0.00
10,950.00	86.06	179.58	10,653.65	-413.58	223.93	425.08	10.00	10.00	0.00
10,992.08	90.27	179.58	10,655.00	-455.63	224.24	467.09	10.00	10.00	0.00
Start 4265.39 hold at 10992.08 MD									
11,000.00	90.27	179.58	10,654.96	-463.55	224.29	475.00	0.00	0.00	0.00
11,100.00	90.27	179.58	10,654.50	-563.55	225.03	574.89	0.00	0.00	0.00
11,200.00	90.27	179.58	10,654.03	-663.54	225.77	674.78	0.00	0.00	0.00
11,300.00	90.27	179.58	10,653.56	-763.54	226.50	774.67	0.00	0.00	0.00
11,400.00	90.27	179.58	10,653.09	-863.53	227.24	874.56	0.00	0.00	0.00
11,500.00	90.27	179.58	10,652.62	-963.53	227.97	974.45	0.00	0.00	0.00
11,600.00	90.27	179.58	10,652.15	-1,063.53	228.71	1,074.34	0.00	0.00	0.00
11,700.00	90.27	179.58	10,651.68	-1,163.52	229.44	1,174.23	0.00	0.00	0.00
11,800.00	90.27	179.58	10,651.21	-1,263.52	230.18	1,274.12	0.00	0.00	0.00
11,900.00	90.27	179.58	10,650.74	-1,363.52	230.92	1,374.01	0.00	0.00	0.00
12,000.00	90.27	179.58	10,650.28	-1,463.51	231.65	1,473.90	0.00	0.00	0.00
12,100.00	90.27	179.58	10,649.81	-1,563.51	232.39	1,573.79	0.00	0.00	0.00
12,200.00	90.27	179.58	10,649.34	-1,663.50	233.12	1,673.68	0.00	0.00	0.00
12,300.00	90.27	179.58	10,648.87	-1,763.50	233.86	1,773.57	0.00	0.00	0.00
12,400.00	90.27	179.58	10,648.40	-1,863.50	234.59	1,873.45	0.00	0.00	0.00
12,500.00	90.27	179.58	10,647.93	-1,963.49	235.33	1,973.34	0.00	0.00	0.00
12,600.00	90.27	179.58	10,647.46	-2,063.49	236.07	2,073.23	0.00	0.00	0.00
12,700.00	90.27	179.58	10,646.99	-2,163.49	236.80	2,173.12	0.00	0.00	0.00
12,800.00	90.27	179.58	10,646.52	-2,263.48	237.54	2,273.01	0.00	0.00	0.00
12,900.00	90.27	179.58	10,646.06	-2,363.48	238.27	2,372.90	0.00	0.00	0.00
13,000.00	90.27	179.58	10,645.59	-2,463.47	239.01	2,472.79	0.00	0.00	0.00
13,100.00	90.27	179.58	10,645.12	-2,563.47	239.75	2,572.68	0.00	0.00	0.00
13,200.00	90.27	179.58	10,644.65	-2,663.47	240.48	2,672.57	0.00	0.00	0.00
13,300.00	90.27	179.58	10,644.18	-2,763.46	241.22	2,772.46	0.00	0.00	0.00
13,400.00	90.27	179.58	10,643.71	-2,863.46	241.95	2,872.35	0.00	0.00	0.00
13,500.00	90.27	179.58	10,643.24	-2,963.45	242.69	2,972.24	0.00	0.00	0.00
13,600.00	90.27	179.58	10,642.77	-3,063.45	243.42	3,072.13	0.00	0.00	0.00
13,700.00	90.27	179.58	10,642.30	-3,163.45	244.16	3,172.02	0.00	0.00	0.00
13,800.00	90.27	179.58	10,641.83	-3,263.44	244.90	3,271.91	0.00	0.00	0.00
13,900.00	90.27	179.58	10,641.37	-3,363.44	245.63	3,371.80	0.00	0.00	0.00
14,000.00	90.27	179.58	10,640.90	-3,463.44	246.37	3,471.69	0.00	0.00	0.00

LEAM Drilling Systems LLC

Planning Report

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Company:	Devon Energy	TVD Reference:	3707.4' GE + 23.5' KB @ 3730.90usft
Project:	Lea County, NM (NAD-83)	MD Reference:	3707.4' GE + 23.5' KB @ 3730.90usft
Site:	Thistle Unit Sec 22-27 Trac Pad	North Reference:	Grid
Well:	Thistle Unit 111H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

Planned 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)
14,100.00	90.27	179.58	10,640.43	-3,563.43	247.10	3,571.58	0.00	0.00	0.00
14,200.00	90.27	179.58	10,639.96	-3,663.43	247.84	3,671.47	0.00	0.00	0.00
14,300.00	90.27	179.58	10,639.49	-3,763.42	248.58	3,771.36	0.00	0.00	0.00
14,400.00	90.27	179.58	10,639.02	-3,863.42	249.31	3,871.25	0.00	0.00	0.00
14,500.00	90.27	179.58	10,638.55	-3,963.42	250.05	3,971.14	0.00	0.00	0.00
14,600.00	90.27	179.58	10,638.08	-4,063.41	250.78	4,071.03	0.00	0.00	0.00
14,700.00	90.27	179.58	10,637.61	-4,163.41	251.52	4,170.92	0.00	0.00	0.00
14,800.00	90.27	179.58	10,637.15	-4,263.41	252.25	4,270.81	0.00	0.00	0.00
14,900.00	90.27	179.58	10,636.68	-4,363.40	252.99	4,370.70	0.00	0.00	0.00
15,000.00	90.27	179.58	10,636.21	-4,463.40	253.73	4,470.59	0.00	0.00	0.00
15,100.00	90.27	179.58	10,635.74	-4,563.39	254.46	4,570.48	0.00	0.00	0.00
15,200.00	90.27	179.58	10,635.27	-4,663.39	255.20	4,670.37	0.00	0.00	0.00
15,257.47	90.27	179.58	10,635.00	-4,720.86	255.62	4,727.78	0.00	0.00	0.00
TD at 15257.47 - PBHL (TU 111)									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
SHL (TU 111)	0.00	0.00	0.00	0.00	0.00	472,590.44	782,261.85	32° 17' 48.5402 N	103° 33' 13.0182 W
- plan hits target center									
- Point									
PBHL (TU 111)	0.00	0.00	10,635.00	-4,720.86	255.62	467,869.58	782,517.47	32° 17' 1.8087 N	103° 33' 10.4404 W
- plan hits target center									
- Point									

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
2,500.00	2,500.00	0.00	0.00	Start Build 1.00
2,845.17	2,844.96	4.98	9.12	Start 3817.00 hold at 2845.17 MD
6,662.17	6,655.04	115.02	210.88	Start Drop -1.00
7,007.34	7,000.00	120.00	220.00	Start 3082.05 hold at 7007.34 MD
10,089.39	10,082.05	120.00	220.00	Start DLS 10.00 TFO 179.58
10,992.08	10,655.00	-455.63	224.24	Start 4265.39 hold at 10992.08 MD
15,257.47	10,635.00	-4,720.86	255.62	TD at 15257.47