

Project: Lea County, NM (NAD-83)
 Site: Thistle Unit Sec 22-27 Trac Pad
 Well: Thistle Unit 115H
 Wellbore: OH
 Design: Plan #3

3713.2' GE +23.5' KB @ 3736.70usft
 Ground Level: 3713.20

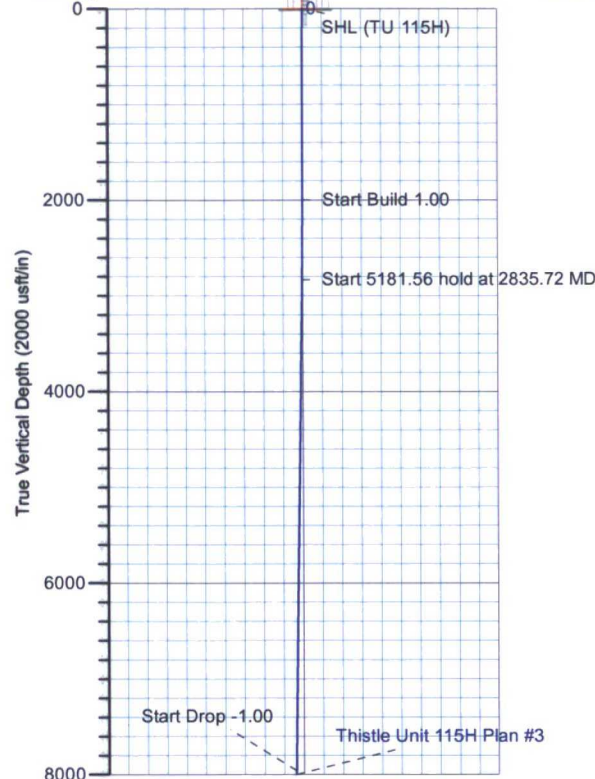


Azimuths to Grid North
 True North: -0.41°
 Magnetic North: 6.41°

Magnetic Field
 Strength: 48121.3snT
 Dip Angle: 60.07°
 Date: 1/17/2018
 Model: HDGM

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

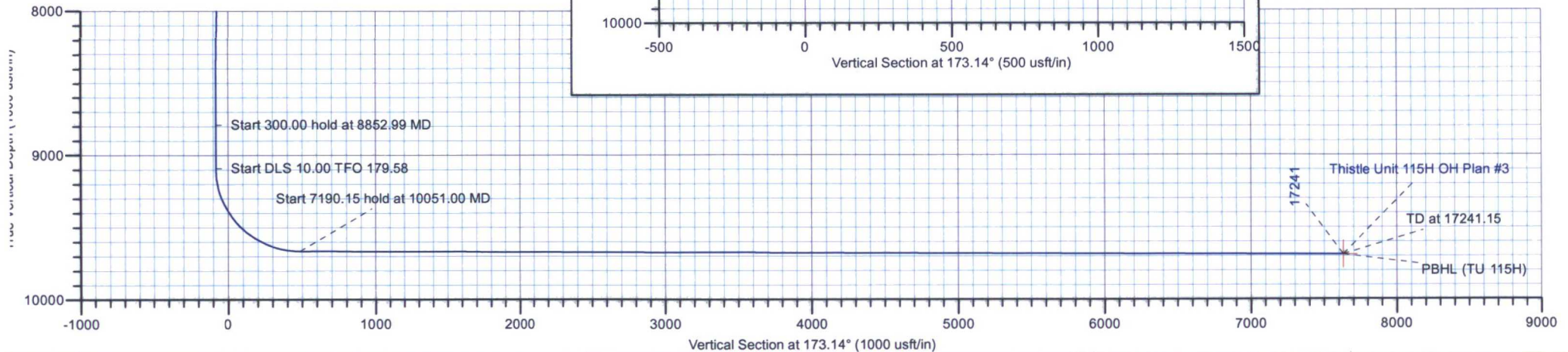
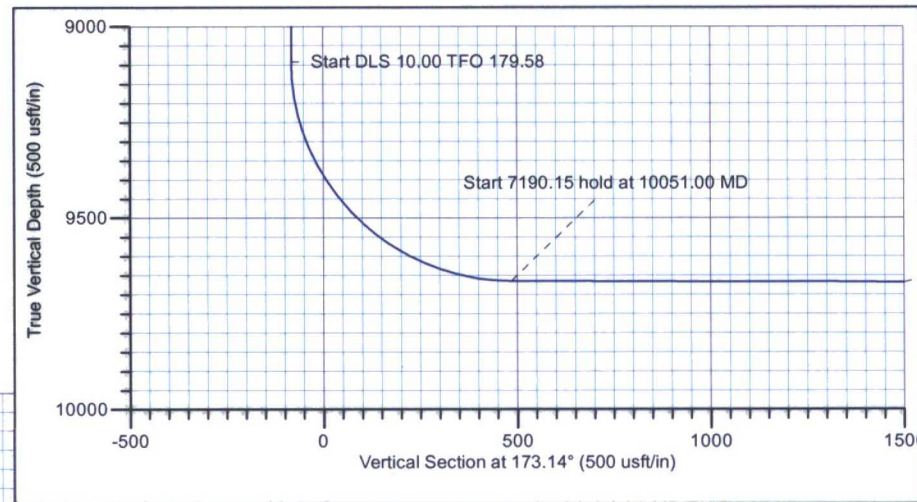
Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: New Mexico Eastern Zone



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	
2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00	Start Build 1.00
2835.72	8.36	77.79	2832.75	12.87	59.46	1.00	77.79	-5.67	Start 5181.56 hold at 2835.72 MD
8017.28	8.36	77.79	7959.30	172.13	795.54	0.00	0.00	-75.82	Start Drop -1.00
8852.99	0.00	0.00	8792.05	185.00	855.00	1.00	180.00	-81.48	Start 300.00 hold at 8852.99 MD
9152.99	0.00	0.00	9092.05	185.00	855.00	0.00	0.00	-81.48	Start DLS 10.00 TFO 179.58
10051.00	89.80	179.58	9665.00	-385.95	859.19	10.00	179.58	485.87	Start 7190.15 hold at 10051.00 MD
17241.15	89.80	179.58	9690.00	-7575.86	912.00	0.00	0.00	7630.56	TD at 17241.15

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
PBHL (TU 115H)	9690.00	-7575.86	912.00	32° 16' 32.5428 N	103° 33' 36.6948 W
SHL (TU 115H)	0.00	0.00	0.00	32° 17' 47.5714 N	103° 33' 46.6834 W



Devon Energy

Project: Lea County, NM (NAD-83)
Site: Thistle Unit Sec 22-27 Trac Pad
Well: Thistle Unit 115H
Wellbore: OH
Design: Plan #3



Azimuths to Grid North
True North: -0.41°
Magnetic North: 6.41°

Magnetic Field
Strength: 48121.3snT
Dip Angle: 60.07°
Date: 1/17/2018
Model: HDGM

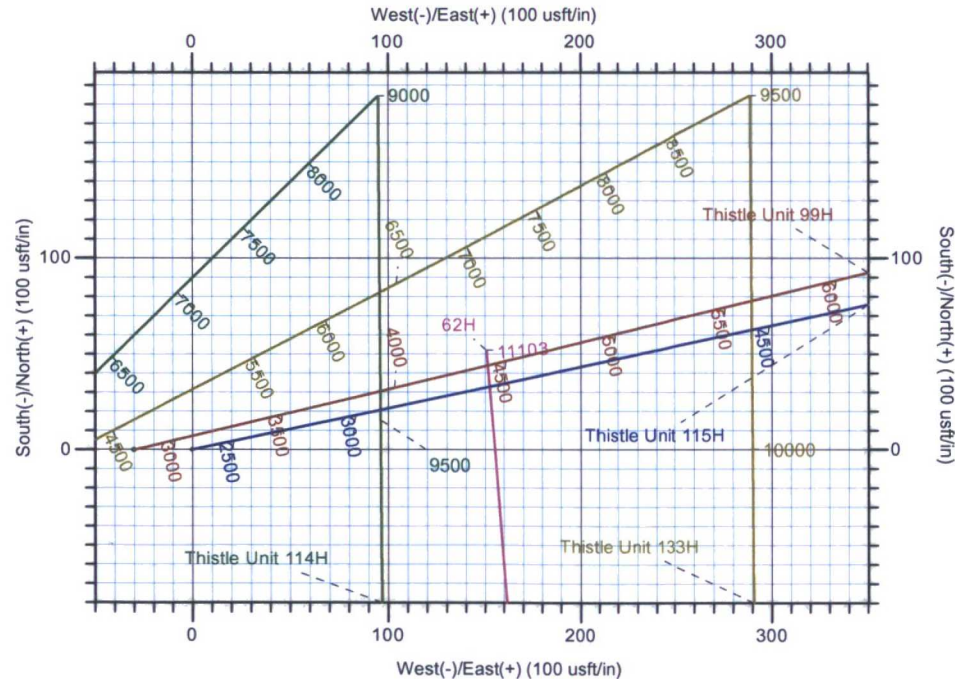


PROJECT DETAILS: Lea County, NM (NAD-83)
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone

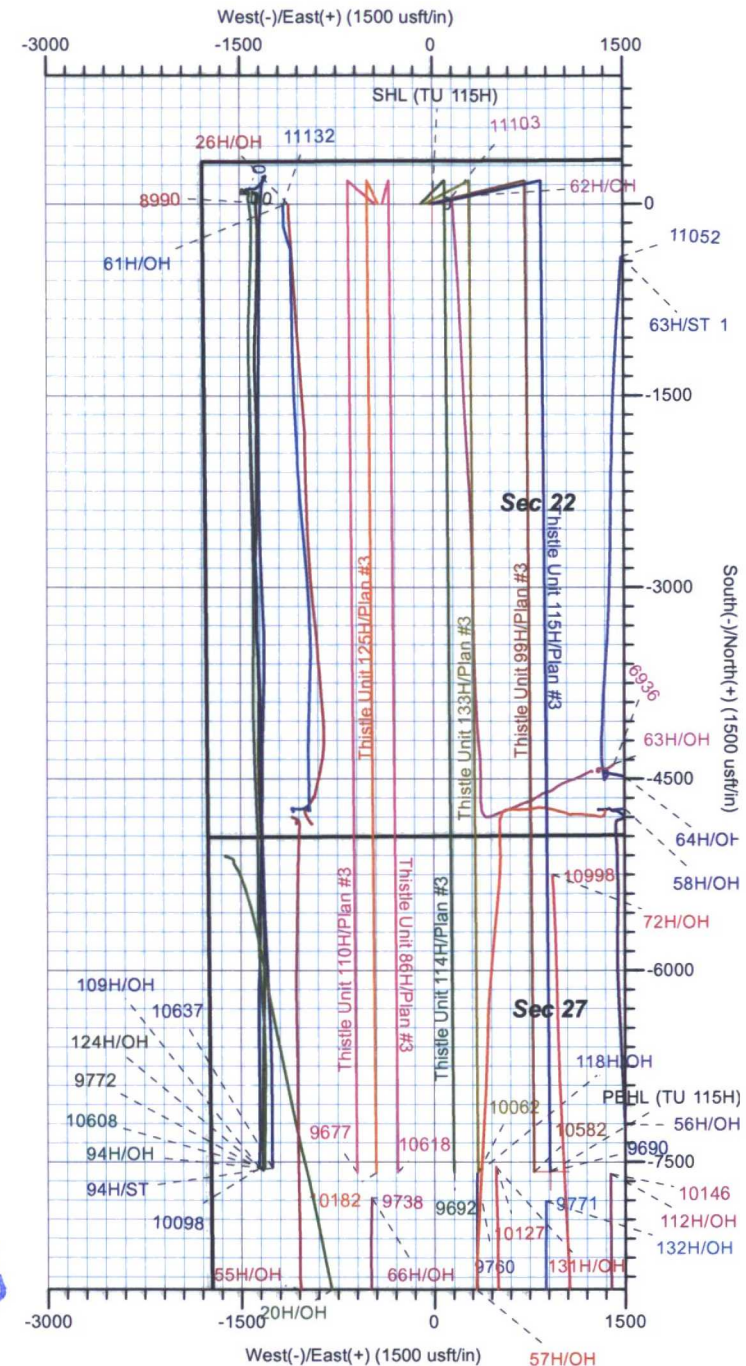
SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00	
2835.72	8.36	77.79	2832.75	12.87	59.46	1.00	77.79	-5.67	
8017.28	8.36	77.79	7959.30	172.13	795.54	0.00	0.00	-75.82	
8852.99	0.00	0.00	8792.05	185.00	855.00	1.00	180.00	-81.48	
9152.99	0.00	0.00	9092.05	185.00	855.00	0.00	0.00	-81.48	
10051.00	89.80	179.58	9665.00	-385.95	859.19	10.00	179.58	485.87	
17241.15	89.80	179.58	9690.00	-7575.86	912.00	0.00	0.00	7630.56	PBHL (TU 115H)

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL (TU 115H)	9690.00	-7575.86	912.00	464895.79	780284.98	32° 16' 32.5428 N	103° 33' 36.6948 W
SHL (TU 115H)	0.00	0.00	0.00	472471.65	779372.98	32° 17' 47.5714 N	103° 33' 46.6834 W



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LEAM DRILLING SYSTEMS LLC
2010 East Davis, Conroe, Texas 77301

Plan: Plan #3 (Thistle Unit 115H/OH)
Thistle Unit Sec 22-27 Trac Pad
Created By: Dustin Ault
Date: 14:01, January 17 2018

Devon Energy

Lea County, NM (NAD-83)

Thistle Unit Sec 22-27 Trac Pad

Thistle Unit 115H

OH

Plan: Plan #3

Standard Planning Report

17 January, 2018

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Multi User Db	Local Co-ordinate Reference:	Well Thistle Unit 115H
Company:	Devon Energy	TVD Reference:	3713.2' GE + 23.5' KB @ 3736.70usft
Project:	Lea County, NM (NAD-83)	MD Reference:	3713.2' GE + 23.5' KB @ 3736.70usft
Site:	Thistle Unit Sec 22-27 Trac Pad	North Reference:	Grid
Well:	Thistle Unit 115H	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 115H					
Well Position	+N/-S	-76.77 usft	Northing:	472,471.65 usft	Latitude:	32° 17' 47.5714 N
	+E/-W	1,440.29 usft	Easting:	779,372.98 usft	Longitude:	103° 33' 46.6834 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,713.20 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	1/17/2018	6.82	60.07	48,121

Design	Plan #3			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	173.14

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	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,835.72	8.36	77.79	2,832.75	12.87	59.46	1.00	1.00	0.00	77.79	
8,017.28	8.36	77.79	7,959.30	172.13	795.54	0.00	0.00	0.00	0.00	
8,852.99	0.00	0.01	8,792.05	185.00	855.00	1.00	-1.00	0.00	180.00	
9,152.99	0.00	0.01	9,092.05	185.00	855.00	0.00	0.00	0.00	0.01	
10,051.00	89.80	179.58	9,665.00	-385.95	859.19	10.00	10.00	20.00	179.58	
17,241.15	89.80	179.58	9,690.00	-7,575.86	912.00	0.00	0.00	0.00	0.00	PBHL (TU 115H)

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Multi User Db	Local Co-ordinate Reference:	Well Thistle Unit 115H
Company:	Devon Energy	TVD Reference:	3713.2' GE + 23.5' KB @ 3736.70usft
Project:	Lea County, NM (NAD-83)	MD Reference:	3713.2' GE + 23.5' KB @ 3736.70usft
Site:	Thistle Unit Sec 22-27 Trac Pad	North Reference:	Grid
Well:	Thistle Unit 115H	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 115H)									
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
Start Build 1.00									
2,100.00	1.00	77.79	2,099.99	0.18	0.85	-0.08	1.00	1.00	0.00
2,200.00	2.00	77.79	2,199.96	0.74	3.41	-0.33	1.00	1.00	0.00
2,300.00	3.00	77.79	2,299.86	1.66	7.67	-0.73	1.00	1.00	0.00
2,400.00	4.00	77.79	2,399.68	2.95	13.64	-1.30	1.00	1.00	0.00
2,500.00	5.00	77.79	2,499.37	4.61	21.31	-2.03	1.00	1.00	0.00
2,600.00	6.00	77.79	2,598.90	6.64	30.68	-2.92	1.00	1.00	0.00
2,700.00	7.00	77.79	2,698.26	9.03	41.74	-3.98	1.00	1.00	0.00
2,800.00	8.00	77.79	2,797.40	11.79	54.50	-5.19	1.00	1.00	0.00
2,835.72	8.36	77.79	2,832.75	12.87	59.46	-5.67	1.00	1.00	0.00
Start 5181.56 hold at 2835.72 MD									
2,900.00	8.36	77.79	2,896.36	14.84	68.60	-6.54	0.00	0.00	0.00
3,000.00	8.36	77.79	2,995.30	17.92	82.80	-7.89	0.00	0.00	0.00
3,100.00	8.36	77.79	3,094.23	20.99	97.01	-9.25	0.00	0.00	0.00
3,200.00	8.36	77.79	3,193.17	24.06	111.21	-10.60	0.00	0.00	0.00
3,300.00	8.36	77.79	3,292.11	27.14	125.42	-11.95	0.00	0.00	0.00
3,400.00	8.36	77.79	3,391.05	30.21	139.62	-13.31	0.00	0.00	0.00
3,500.00	8.36	77.79	3,489.99	33.28	153.83	-14.66	0.00	0.00	0.00
3,600.00	8.36	77.79	3,588.92	36.36	168.04	-16.01	0.00	0.00	0.00
3,700.00	8.36	77.79	3,687.86	39.43	182.24	-17.37	0.00	0.00	0.00
3,800.00	8.36	77.79	3,786.80	42.51	196.45	-18.72	0.00	0.00	0.00
3,900.00	8.36	77.79	3,885.74	45.58	210.65	-20.08	0.00	0.00	0.00
4,000.00	8.36	77.79	3,984.68	48.65	224.86	-21.43	0.00	0.00	0.00
4,100.00	8.36	77.79	4,083.61	51.73	239.06	-22.78	0.00	0.00	0.00
4,200.00	8.36	77.79	4,182.55	54.80	253.27	-24.14	0.00	0.00	0.00
4,300.00	8.36	77.79	4,281.49	57.87	267.47	-25.49	0.00	0.00	0.00
4,400.00	8.36	77.79	4,380.43	60.95	281.68	-26.85	0.00	0.00	0.00
4,500.00	8.36	77.79	4,479.37	64.02	295.89	-28.20	0.00	0.00	0.00
4,600.00	8.36	77.79	4,578.31	67.10	310.09	-29.55	0.00	0.00	0.00
4,700.00	8.36	77.79	4,677.24	70.17	324.30	-30.91	0.00	0.00	0.00
4,800.00	8.36	77.79	4,776.18	73.24	338.50	-32.26	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 115H
Company:	Devon Energy	TVD Reference:	3713.2' GE + 23.5' KB @ 3736.70usft
Project:	Lea County, NM (NAD-83)	MD Reference:	3713.2' GE + 23.5' KB @ 3736.70usft
Site:	Thistle Unit Sec 22-27 Trac Pad	North Reference:	Grid
Well:	Thistle Unit 115H	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	8.36	77.79	4,875.12	76.32	352.71	-33.61	0.00	0.00	0.00
5,000.00	8.36	77.79	4,974.06	79.39	366.91	-34.97	0.00	0.00	0.00
5,100.00	8.36	77.79	5,073.00	82.46	381.12	-36.32	0.00	0.00	0.00
5,200.00	8.36	77.79	5,171.93	85.54	395.32	-37.68	0.00	0.00	0.00
5,300.00	8.36	77.79	5,270.87	88.61	409.53	-39.03	0.00	0.00	0.00
5,400.00	8.36	77.79	5,369.81	91.69	423.74	-40.38	0.00	0.00	0.00
5,500.00	8.36	77.79	5,468.75	94.76	437.94	-41.74	0.00	0.00	0.00
5,600.00	8.36	77.79	5,567.69	97.83	452.15	-43.09	0.00	0.00	0.00
5,700.00	8.36	77.79	5,666.62	100.91	466.35	-44.45	0.00	0.00	0.00
5,800.00	8.36	77.79	5,765.56	103.98	480.56	-45.80	0.00	0.00	0.00
5,900.00	8.36	77.79	5,864.50	107.05	494.76	-47.15	0.00	0.00	0.00
6,000.00	8.36	77.79	5,963.44	110.13	508.97	-48.51	0.00	0.00	0.00
6,100.00	8.36	77.79	6,062.38	113.20	523.18	-49.86	0.00	0.00	0.00
6,200.00	8.36	77.79	6,161.32	116.28	537.38	-51.21	0.00	0.00	0.00
6,300.00	8.36	77.79	6,260.25	119.35	551.59	-52.57	0.00	0.00	0.00
6,400.00	8.36	77.79	6,359.19	122.42	565.79	-53.92	0.00	0.00	0.00
6,500.00	8.36	77.79	6,458.13	125.50	580.00	-55.28	0.00	0.00	0.00
6,600.00	8.36	77.79	6,557.07	128.57	594.20	-56.63	0.00	0.00	0.00
6,700.00	8.36	77.79	6,656.01	131.64	608.41	-57.98	0.00	0.00	0.00
6,800.00	8.36	77.79	6,754.94	134.72	622.61	-59.34	0.00	0.00	0.00
6,900.00	8.36	77.79	6,853.88	137.79	636.82	-60.69	0.00	0.00	0.00
7,000.00	8.36	77.79	6,952.82	140.87	651.03	-62.05	0.00	0.00	0.00
7,100.00	8.36	77.79	7,051.76	143.94	665.23	-63.40	0.00	0.00	0.00
7,200.00	8.36	77.79	7,150.70	147.01	679.44	-64.75	0.00	0.00	0.00
7,300.00	8.36	77.79	7,249.64	150.09	693.64	-66.11	0.00	0.00	0.00
7,400.00	8.36	77.79	7,348.57	153.16	707.85	-67.46	0.00	0.00	0.00
7,500.00	8.36	77.79	7,447.51	156.23	722.05	-68.81	0.00	0.00	0.00
7,600.00	8.36	77.79	7,546.45	159.31	736.26	-70.17	0.00	0.00	0.00
7,700.00	8.36	77.79	7,645.39	162.38	750.46	-71.52	0.00	0.00	0.00
7,800.00	8.36	77.79	7,744.33	165.45	764.67	-72.88	0.00	0.00	0.00
7,900.00	8.36	77.79	7,843.26	168.53	778.88	-74.23	0.00	0.00	0.00
8,000.00	8.36	77.79	7,942.20	171.60	793.08	-75.58	0.00	0.00	0.00
8,017.28	8.36	77.79	7,959.30	172.13	795.54	-75.82	0.00	0.00	0.00
Start Drop -1.00									
8,100.00	7.53	77.79	8,041.22	174.55	806.71	-76.88	1.00	-1.00	0.00
8,200.00	6.53	77.79	8,140.47	177.14	818.67	-78.02	1.00	-1.00	0.00
8,300.00	5.53	77.79	8,239.92	179.36	828.94	-79.00	1.00	-1.00	0.00
8,400.00	4.53	77.79	8,339.53	181.21	837.51	-79.82	1.00	-1.00	0.00
8,500.00	3.53	77.79	8,439.28	182.70	844.38	-80.47	1.00	-1.00	0.00
8,600.00	2.53	77.79	8,539.14	183.82	849.54	-80.96	1.00	-1.00	0.00
8,700.00	1.53	77.79	8,639.08	184.57	853.00	-81.29	1.00	-1.00	0.00
8,800.00	0.53	77.79	8,739.06	184.95	854.76	-81.46	1.00	-1.00	0.00
8,852.99	0.00	0.01	8,792.05	185.00	855.00	-81.48	1.00	-1.00	0.00
Start 300.00 hold at 8852.99 MD									
8,900.00	0.00	0.00	8,839.06	185.00	855.00	-81.48	0.00	0.00	0.00
9,000.00	0.00	0.00	8,939.06	185.00	855.00	-81.48	0.00	0.00	0.00
9,100.00	0.00	0.00	9,039.06	185.00	855.00	-81.48	0.00	0.00	0.00
9,152.99	0.00	0.00	9,092.05	185.00	855.00	-81.48	0.00	0.00	0.00
Start DLS 10.00 TFO 179.58									
9,200.00	4.70	179.58	9,139.01	183.07	855.01	-79.57	10.00	10.00	0.00
9,250.00	9.70	179.58	9,188.60	176.81	855.06	-73.34	10.00	10.00	0.00
9,300.00	14.70	179.58	9,237.45	166.24	855.14	-62.85	10.00	10.00	0.00
9,350.00	19.70	179.58	9,285.20	151.46	855.25	-48.16	10.00	10.00	0.00

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Multi User Db	Local Co-ordinate Reference:	Well Thistle Unit 115H
Company:	Devon Energy	TVD Reference:	3713.2' GE + 23.5' KB @ 3736.70usft
Project:	Lea County, NM (NAD-83)	MD Reference:	3713.2' GE + 23.5' KB @ 3736.70usft
Site:	Thistle Unit Sec 22-27 Trac Pad	North Reference:	Grid
Well:	Thistle Unit 115H	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)
9,400.00	24.70	179.58	9,331.48	132.58	855.39	-29.39	10.00	10.00	0.00
9,450.00	29.70	179.58	9,375.93	109.73	855.55	-6.69	10.00	10.00	0.00
9,500.00	34.70	179.58	9,418.23	83.09	855.75	19.78	10.00	10.00	0.00
9,550.00	39.70	179.58	9,458.04	52.87	855.97	49.81	10.00	10.00	0.00
9,600.00	44.70	179.58	9,495.07	19.30	856.22	83.17	10.00	10.00	0.00
9,650.00	49.70	179.58	9,529.03	-17.38	856.49	119.62	10.00	10.00	0.00
9,700.00	54.70	179.58	9,559.67	-56.87	856.78	158.86	10.00	10.00	0.00
9,750.00	59.70	179.58	9,586.74	-98.88	857.09	200.61	10.00	10.00	0.00
9,800.00	64.70	179.58	9,610.05	-143.10	857.41	244.55	10.00	10.00	0.00
9,850.00	69.70	179.58	9,629.42	-189.18	857.75	290.34	10.00	10.00	0.00
9,900.00	74.70	179.58	9,644.70	-236.77	858.10	337.63	10.00	10.00	0.00
9,950.00	79.70	179.58	9,655.78	-285.51	858.46	386.06	10.00	10.00	0.00
10,000.00	84.70	179.58	9,662.56	-335.03	858.82	435.27	10.00	10.00	0.00
10,051.00	89.80	179.58	9,665.00	-385.95	859.19	485.87	10.00	10.00	0.00
Start 7190.15 hold at 10051.00 MD									
10,100.00	89.80	179.58	9,665.17	-434.95	859.55	534.56	0.00	0.00	0.00
10,200.00	89.80	179.58	9,665.52	-534.95	860.29	633.93	0.00	0.00	0.00
10,300.00	89.80	179.58	9,665.87	-634.94	861.02	733.30	0.00	0.00	0.00
10,400.00	89.80	179.58	9,666.22	-734.94	861.76	832.67	0.00	0.00	0.00
10,500.00	89.80	179.58	9,666.57	-834.94	862.49	932.04	0.00	0.00	0.00
10,600.00	89.80	179.58	9,666.91	-934.93	863.23	1,031.40	0.00	0.00	0.00
10,700.00	89.80	179.58	9,667.26	-1,034.93	863.96	1,130.77	0.00	0.00	0.00
10,800.00	89.80	179.58	9,667.61	-1,134.93	864.69	1,230.14	0.00	0.00	0.00
10,900.00	89.80	179.58	9,667.96	-1,234.92	865.43	1,329.51	0.00	0.00	0.00
11,000.00	89.80	179.58	9,668.30	-1,334.92	866.16	1,428.87	0.00	0.00	0.00
11,100.00	89.80	179.58	9,668.65	-1,434.92	866.90	1,528.24	0.00	0.00	0.00
11,200.00	89.80	179.58	9,669.00	-1,534.91	867.63	1,627.61	0.00	0.00	0.00
11,300.00	89.80	179.58	9,669.35	-1,634.91	868.37	1,726.98	0.00	0.00	0.00
11,400.00	89.80	179.58	9,669.69	-1,734.91	869.10	1,826.34	0.00	0.00	0.00
11,500.00	89.80	179.58	9,670.04	-1,834.90	869.84	1,925.71	0.00	0.00	0.00
11,600.00	89.80	179.58	9,670.39	-1,934.90	870.57	2,025.08	0.00	0.00	0.00
11,700.00	89.80	179.58	9,670.74	-2,034.90	871.30	2,124.45	0.00	0.00	0.00
11,800.00	89.80	179.58	9,671.08	-2,134.89	872.04	2,223.82	0.00	0.00	0.00
11,900.00	89.80	179.58	9,671.43	-2,234.89	872.77	2,323.18	0.00	0.00	0.00
12,000.00	89.80	179.58	9,671.78	-2,334.89	873.51	2,422.55	0.00	0.00	0.00
12,100.00	89.80	179.58	9,672.13	-2,434.88	874.24	2,521.92	0.00	0.00	0.00
12,200.00	89.80	179.58	9,672.48	-2,534.88	874.98	2,621.29	0.00	0.00	0.00
12,300.00	89.80	179.58	9,672.82	-2,634.88	875.71	2,720.65	0.00	0.00	0.00
12,400.00	89.80	179.58	9,673.17	-2,734.87	876.45	2,820.02	0.00	0.00	0.00
12,500.00	89.80	179.58	9,673.52	-2,834.87	877.18	2,919.39	0.00	0.00	0.00
12,600.00	89.80	179.58	9,673.87	-2,934.87	877.91	3,018.76	0.00	0.00	0.00
12,700.00	89.80	179.58	9,674.21	-3,034.86	878.65	3,118.12	0.00	0.00	0.00
12,800.00	89.80	179.58	9,674.56	-3,134.86	879.38	3,217.49	0.00	0.00	0.00
12,900.00	89.80	179.58	9,674.91	-3,234.86	880.12	3,316.86	0.00	0.00	0.00
13,000.00	89.80	179.58	9,675.26	-3,334.85	880.85	3,416.23	0.00	0.00	0.00
13,100.00	89.80	179.58	9,675.60	-3,434.85	881.59	3,515.60	0.00	0.00	0.00
13,200.00	89.80	179.58	9,675.95	-3,534.85	882.32	3,614.96	0.00	0.00	0.00
13,300.00	89.80	179.58	9,676.30	-3,634.84	883.06	3,714.33	0.00	0.00	0.00
13,400.00	89.80	179.58	9,676.65	-3,734.84	883.79	3,813.70	0.00	0.00	0.00
13,500.00	89.80	179.58	9,676.99	-3,834.84	884.52	3,913.07	0.00	0.00	0.00
13,600.00	89.80	179.58	9,677.34	-3,934.83	885.26	4,012.43	0.00	0.00	0.00
13,700.00	89.80	179.58	9,677.69	-4,034.83	885.99	4,111.80	0.00	0.00	0.00
13,800.00	89.80	179.58	9,678.04	-4,134.83	886.73	4,211.17	0.00	0.00	0.00
13,900.00	89.80	179.58	9,678.39	-4,234.82	887.46	4,310.54	0.00	0.00	0.00

LEAM Drilling Systems LLC

Planning Report

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Company:	Devon Energy	TVD Reference:	3713.2' GE + 23.5' KB @ 3736.70usft
Project:	Lea County, NM (NAD-83)	MD Reference:	3713.2' GE + 23.5' KB @ 3736.70usft
Site:	Thistle Unit Sec 22-27 Trac Pad	North Reference:	Grid
Well:	Thistle Unit 115H	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)
14,000.00	89.80	179.58	9,678.73	-4,334.82	888.20	4,409.90	0.00	0.00	0.00
14,100.00	89.80	179.58	9,679.08	-4,434.82	888.93	4,509.27	0.00	0.00	0.00
14,200.00	89.80	179.58	9,679.43	-4,534.81	889.66	4,608.64	0.00	0.00	0.00
14,300.00	89.80	179.58	9,679.78	-4,634.81	890.40	4,708.01	0.00	0.00	0.00
14,400.00	89.80	179.58	9,680.12	-4,734.81	891.13	4,807.38	0.00	0.00	0.00
14,500.00	89.80	179.58	9,680.47	-4,834.80	891.87	4,906.74	0.00	0.00	0.00
14,600.00	89.80	179.58	9,680.82	-4,934.80	892.60	5,006.11	0.00	0.00	0.00
14,700.00	89.80	179.58	9,681.17	-5,034.80	893.34	5,105.48	0.00	0.00	0.00
14,800.00	89.80	179.58	9,681.51	-5,134.79	894.07	5,204.85	0.00	0.00	0.00
14,900.00	89.80	179.58	9,681.86	-5,234.79	894.81	5,304.21	0.00	0.00	0.00
15,000.00	89.80	179.58	9,682.21	-5,334.79	895.54	5,403.58	0.00	0.00	0.00
15,100.00	89.80	179.58	9,682.56	-5,434.78	896.27	5,502.95	0.00	0.00	0.00
15,200.00	89.80	179.58	9,682.90	-5,534.78	897.01	5,602.32	0.00	0.00	0.00
15,300.00	89.80	179.58	9,683.25	-5,634.78	897.74	5,701.68	0.00	0.00	0.00
15,400.00	89.80	179.58	9,683.60	-5,734.77	898.48	5,801.05	0.00	0.00	0.00
15,500.00	89.80	179.58	9,683.95	-5,834.77	899.21	5,900.42	0.00	0.00	0.00
15,600.00	89.80	179.58	9,684.29	-5,934.77	899.95	5,999.79	0.00	0.00	0.00
15,700.00	89.80	179.58	9,684.64	-6,034.76	900.68	6,099.16	0.00	0.00	0.00
15,800.00	89.80	179.58	9,684.99	-6,134.76	901.42	6,198.52	0.00	0.00	0.00
15,900.00	89.80	179.58	9,685.34	-6,234.76	902.15	6,297.89	0.00	0.00	0.00
16,000.00	89.80	179.58	9,685.69	-6,334.75	902.88	6,397.26	0.00	0.00	0.00
16,100.00	89.80	179.58	9,686.03	-6,434.75	903.62	6,496.63	0.00	0.00	0.00
16,200.00	89.80	179.58	9,686.38	-6,534.75	904.35	6,595.99	0.00	0.00	0.00
16,300.00	89.80	179.58	9,686.73	-6,634.74	905.09	6,695.36	0.00	0.00	0.00
16,400.00	89.80	179.58	9,687.08	-6,734.74	905.82	6,794.73	0.00	0.00	0.00
16,500.00	89.80	179.58	9,687.42	-6,834.74	906.56	6,894.10	0.00	0.00	0.00
16,600.00	89.80	179.58	9,687.77	-6,934.73	907.29	6,993.46	0.00	0.00	0.00
16,700.00	89.80	179.58	9,688.12	-7,034.73	908.03	7,092.83	0.00	0.00	0.00
16,800.00	89.80	179.58	9,688.47	-7,134.73	908.76	7,192.20	0.00	0.00	0.00
16,900.00	89.80	179.58	9,688.81	-7,234.72	909.49	7,291.57	0.00	0.00	0.00
17,000.00	89.80	179.58	9,689.16	-7,334.72	910.23	7,390.94	0.00	0.00	0.00
17,100.00	89.80	179.58	9,689.51	-7,434.72	910.96	7,490.30	0.00	0.00	0.00
17,200.00	89.80	179.58	9,689.86	-7,534.71	911.70	7,589.67	0.00	0.00	0.00
17,241.15	89.80	179.58	9,690.00	-7,575.86	912.00	7,630.56	0.00	0.00	0.00
TD at 17241.15 - PBHL (TU 115H)									

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 115H)	0.00	0.00	0.00	0.00	0.00	472,471.65	779,372.98	32° 17' 47.5714 N	103° 33' 46.6834 W
- plan hits target center									
- Point									
PBHL (TU 115H)	0.00	0.01	9,690.00	-7,575.86	912.00	464,895.79	780,284.98	32° 16' 32.5428 N	103° 33' 36.6948 W
- plan hits target center									
- Point									

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Multi User Db	Local Co-ordinate Reference:	Well Thistle Unit 115H
Company:	Devon Energy	TVD Reference:	3713.2' GE + 23.5' KB @ 3736.70usft
Project:	Lea County, NM (NAD-83)	MD Reference:	3713.2' GE + 23.5' KB @ 3736.70usft
Site:	Thistle Unit Sec 22-27 Trac Pad	North Reference:	Grid
Well:	Thistle Unit 115H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,000.00	2,000.00	0.00	0.00	Start Build 1.00
2,835.72	2,832.75	12.87	59.46	Start 5181.56 hold at 2835.72 MD
8,017.28	7,959.30	172.13	795.54	Start Drop -1.00
8,852.99	8,792.05	185.00	855.00	Start 300.00 hold at 8852.99 MD
9,152.99	9,092.05	185.00	855.00	Start DLS 10.00 TFO 179.58
10,051.00	9,665.00	-385.95	859.19	Start 7190.15 hold at 10051.00 MD
17,241.15	9,690.00	-7,575.86	912.00	TD at 17241.15