

Results of Directional Survey

LAT 1

API number:	30-025-40016		
OGRID:		Operator:	DEVON ENERGY PRODUCTION COMPANY, LP
		Property:	THISTLE UNIT # 32H

surface	ULSTR:	P	33	T	23S	R	33E
				150	FSL	150	FEL

BH Loc Lat 1	ULSTR:	I	33	T	23S	R	33E
10271	MD	8971.0	TVD	1675	FSL	484	FEL
				775	FNL		

Top Perf/OH	ULSTR:	I	33	T	23S	R	33E
9570	MD	8968.1	TVD	997	FSL	305	FEL

Bot Perf/OH	ULSTR:	H	33	T	23S	R	33E
10160	MD	8993.0	TVD	1568	FSL	452	FEL

TIE in to sidetrack 1

	MD	N/S	E/W	VD
	9543	821.00	-147.98	8968.55
TOP PERFS/OH	9570	847.17	-154.60	8968.06
	9635	910.17	-170.54	8966.87
	10098	1358.63	-285.44	8966.51
BOT PERFS/OH	10160	1418.44	-301.58	8968.78
	10160	1418.44	-301.58	8968.78

NEXT TO LAST	10191	1448.04	-310.91	8968.79
LAST READING	10271	1524.64	-333.89	8970.60
TD	10271	1524.64	-333.89	8970.60

Surface Location	150	FS	150	FE
Projected BHL	1675	FS	484	FE
Location of				
Top Perfs/OH	997	FS	305	FE
Bottom Perfs/OH	1568	FS	452	FE

SUMMARY of Subsurface Locations

Surface Location	P-33-23S-33E	150	FS	150	FE	Vert. Depth
Top Perfs/OH	P-33-23S-33E	997	FS	305	FE	8968.06
Bottom Perfs/OH	I-33-23S-33E	1568	FS	452	FE	8968.78
Projected TD	I-33-23S-33E	1675	FS	484	FE	8970.60



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Devon Energy Production Co, LP

Lea Co., New Mexico (Nad 83)

Thistle Unit #32H

Thistle Unit #32H

30-025-40016

Lateral #1

Survey: Lateral #1

SUR: P-33-23s-33e, 150/S & 150/E
LAT 1 = BHL: I-33-23s-33e, 1675/S & 484/E
API # 30-025-40016

Standard Survey Report

31 August, 2011



CUDD Drilling and Measurement

Survey Report

Company:	Devon Energy Production Co, LP	Local Co-ordinate Reference:	Site Thistle Unit #32H
Project:	Lea Co., New Mexico (Nad 83)	TVD Reference:	WELL @ 3663.00ft (Original Well Elev)
Site:	Thistle Unit #32H	MD Reference:	WELL @ 3663 00ft (Original Well Elev)
Well:	Thistle Unit #32H	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Lateral #1	Database:	EDM 5000 1 Single User Db

Project	Lea Co., New Mexico (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 #32H, Sec 33, T-23S, R-33E		
Site Position:		Northing:	457,042.52 usft
From:	Map	Easting:	777,566.44 usft
Position Uncertainty:	0 00 ft	Slot Radius:	13-3/16 "
		Latitude:	32° 15' 15.026 N
		Longitude:	103° 34' 9.010 W
		Grid Convergence:	0 41 °

Well	Thistle Unit #32H		
Well Position	+N/-S	0 00 ft	Northing: 457,042.52 usft
	+E/-W	0 00 ft	Easting: 777,566.44 usft
Position Uncertainty	0.00 ft	Wellhead Elevation:	3,663.00 ft
		Ground Level:	3,644.00 ft

Wellbore	Lateral #1		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF200510	6/15/2011	7 58
			Dip Angle (°) 60 24
			Field Strength (nT) 48,670

Design	Lateral #1		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0.00	0.00	0.00
			Direction (°) 348.02

Survey Program	Date 8/31/2011		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name
99.00	8,362.60	Gyro (Lateral #1)	NS-GYRO-MS
8,394.00	10,098.00	Lateral #1 (Lateral #1)	CUDD MWD
10,160.00	11,578.00	Sidetrack #1 (Lateral #1)	CUDD MWD
11,586.00	13,792.00	Sidetrack #2 (Lateral #1)	CUDD MWD
			Description
			North sensing gyrocompassing m/s
			MWD - Standard CUDD MWD
			MWD - Standard CUDD MWD
			MWD - Standard CUDD MWD

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
8,362.60	0.83	197.47	8,359.74	27.77	84.81	9.55	0.00	0.00	0.00	
Gyro Tie-in										
8,394.00	0.80	245.80	8,391.14	27.46	84.55	9.31	2.13	-0.10	153.92	
First CUDD survey										
8,426.00	3.10	318.10	8,423.12	28.02	83.76	10.01	9.24	7.19	225.94	
8,458.00	5.90	326.50	8,455.02	30.03	82.28	12.29	8.97	8.75	26.25	
8,490.00	9.20	331.20	8,486.74	33.65	80.14	16.27	10.48	10.31	14.69	



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Site:	Thistle Unit #32H	MD Reference:	WELL @ 3663.00ft (Original Well Elev)
Well:	Thistle Unit #32H	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Lateral #1	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,522.00	13.60	333.30	8,518.10	39.25	77.21	22.36	13.81	13.75	6.56
8,554.00	17.70	332.90	8,548.91	46.95	73.31	30.70	12.82	12.81	-1.25
8,586.00	21.80	334.90	8,579.02	56.66	68.57	41.19	12.98	12.81	6.25
8,617.00	26.00	337.10	8,607.36	68.14	63.48	53.47	13.85	13.55	7.10
8,649.00	28.40	339.20	8,635.82	81.72	58.05	67.88	8.08	7.50	6.56
8,680.00	29.70	339.00	8,662.92	95.78	52.68	82.75	4.21	4.19	-0.65
8,711.00	30.80	339.30	8,689.69	110.37	47.12	98.18	3.58	3.55	0.97
8,743.00	35.20	340.60	8,716.53	126.74	41.16	115.43	13.93	13.75	4.06
8,775.00	40.10	342.20	8,741.86	145.27	34.94	134.85	15.61	15.31	5.00
8,808.00	43.50	343.90	8,766.45	166.31	28.54	156.76	10.86	10.30	5.15
8,840.00	46.90	344.40	8,789.00	188.15	22.34	179.41	10.68	10.63	1.56
8,872.00	49.10	344.80	8,810.41	211.07	16.03	203.14	6.94	6.88	1.25
8,904.00	51.70	343.90	8,830.80	234.81	9.37	227.75	8.41	8.13	-2.81
8,936.00	54.10	343.30	8,850.11	259.29	2.16	253.19	7.65	7.50	-1.88
8,968.00	56.90	343.00	8,868.23	284.53	-5.48	279.47	8.78	8.75	-0.94
9,000.00	59.90	343.70	8,885.00	310.64	-13.29	306.63	9.56	9.38	2.19
9,032.00	63.30	343.90	8,900.21	337.67	-21.14	334.70	10.64	10.63	0.63
9,064.00	65.90	344.60	8,913.94	365.49	-28.98	363.54	8.36	8.13	2.19
9,096.00	68.20	344.70	8,926.41	393.90	-36.78	392.95	7.19	7.19	0.31
9,127.00	71.52	344.80	8,937.09	421.98	-44.44	422.01	10.71	10.71	0.32
9,159.00	74.02	344.00	8,946.57	451.41	-52.66	452.51	8.17	7.81	-2.50
9,192.00	76.00	344.00	8,955.10	482.05	-61.44	484.30	6.00	6.00	0.00
9,224.00	79.70	344.30	8,961.83	512.14	-69.98	515.51	11.60	11.56	0.94
9,257.00	83.90	344.90	8,966.54	543.62	-78.65	548.11	12.85	12.73	1.82
9,289.00	89.10	345.80	8,968.49	574.51	-86.73	580.00	16.49	16.25	2.81
9,321.00	90.10	345.90	8,968.72	605.54	-94.55	611.98	3.14	3.13	0.31
9,354.00	89.60	346.20	8,968.80	637.57	-102.51	644.96	1.77	-1.52	0.91
9,386.00	88.80	346.20	8,969.25	668.64	-110.14	676.94	2.50	-2.50	0.00
9,418.00	89.60	346.40	8,969.70	699.73	-117.72	708.92	2.58	2.50	0.63
9,450.00	90.30	346.10	8,969.72	730.81	-125.32	740.90	2.38	2.19	-0.94
9,480.00	90.40	345.90	8,969.54	759.92	-132.58	770.89	0.75	0.33	-0.67
9,543.00	91.40	345.80	8,968.55	821.00	-147.98	833.83	1.60	1.59	-0.16
9,635.00	90.70	345.80	8,966.87	910.17	-170.54	925.75	0.76	-0.76	0.00
9,729.00	91.30	346.10	8,965.22	1,001.35	-193.36	1,019.67	0.71	0.64	0.32
9,821.00	89.70	346.70	8,964.42	1,090.76	-214.99	1,111.63	1.86	-1.74	0.65
9,913.00	89.20	345.10	8,965.31	1,179.98	-237.40	1,203.56	1.82	-0.54	-1.74
10,006.00	90.40	344.90	8,965.63	1,269.81	-261.47	1,296.43	1.31	1.29	-0.22
10,098.00	88.50	344.90	8,966.51	1,358.63	-285.44	1,388.28	2.07	-2.07	0.00
10,191.00	88.70	343.30	8,968.79	1,448.04	-310.91	1,481.03	1.73	0.22	-1.72
Last CUDD survey									
10,271.00	88.70	343.30	8,970.60	1,524.64	-333.89	1,560.74	0.00	0.00	0.00
Projection to bit									



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Site:	Thistle Unit #32H	MD Reference:	WELL @ 3663 00ft (Original Well Elev)
Well:	Thistle Unit #32H	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Lateral #1	Database:	EDM 5000 1 Single User Db

Survey Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
8,362.60	8,359.74	27.77	84.81	Gyro Tie-in
8,394.00	8,391.14	27.46	84.55	First CUDD survey
10,191.00	8,968.79	1,448.04	-310.91	Last CUDD survey
10,271.00	8,970.60	1,524.64	-333.89	Projection to bit

Checked By: _____ Approved By: _____ Date: _____



Project Lea Co., New Mexico (Nad 83)
Site Thistle Unit #32H
Well Thistle Unit #32H
Wellbore Lateral #1
Design Lateral #1



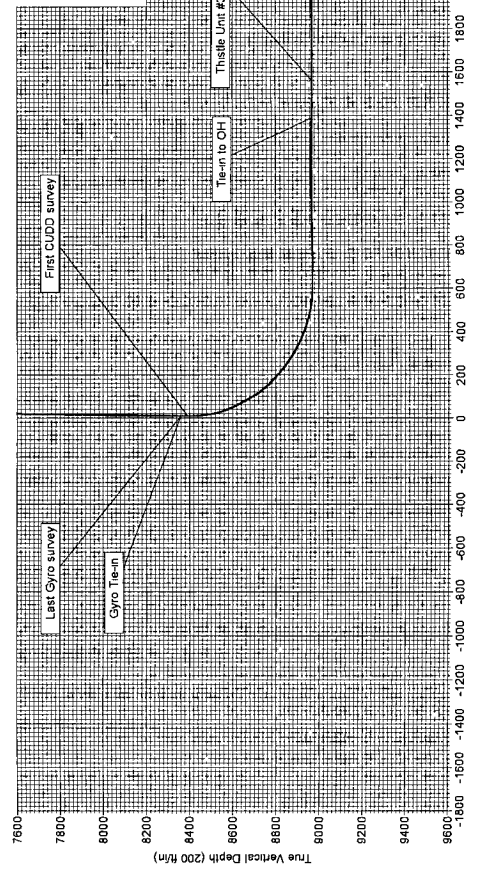
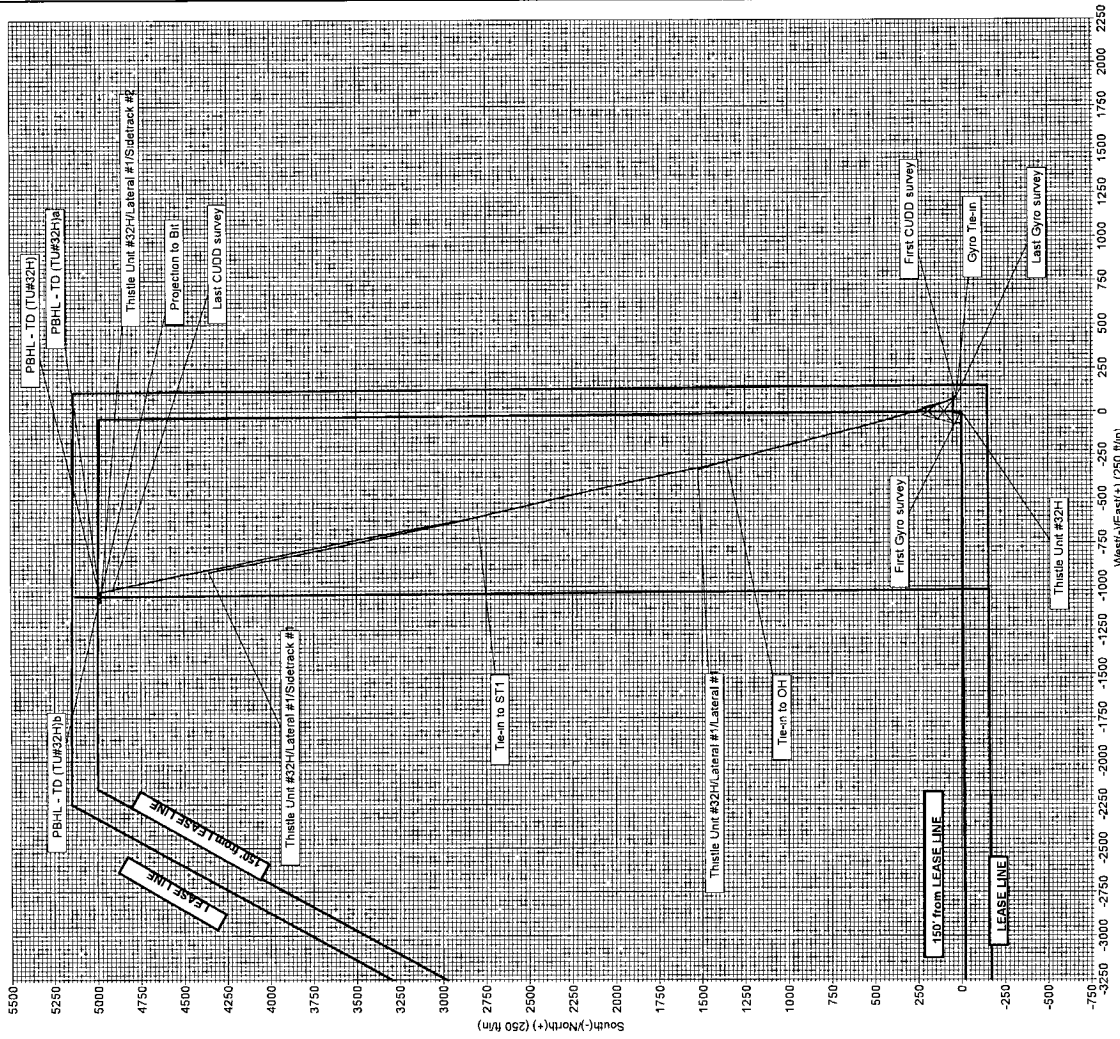
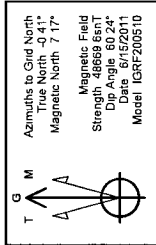
ANNOTATIONS	
TVD	MD Annotation
98 99	99 00 First Gyro survey
8359 74	8362 80 Last Gyro survey
8359 74	8362 80 Gyro Tie-in
8359 74	8362 80 First Gyro survey
8359 74	8362 80 Tie-in to OH
8359 74	8362 80 Tie-in to ST1
8359 74	8362 80 Last CUDD survey
8359 74	8362 80 Projection to Bit

PROJECT DETAILS	
Geodetic System	US State Plane 1983
Datum	North American Datum 1983
Ellipsoid	GRS 1980
Projection	North American Eastern Zone
System Datum	Mean Sea Level

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)					
Name	TVD	+N-S	East/W	North/S	Longitude
PBHL - TD (TU#32H)	8958 00	4984 25	-1058 05	462026 76	32° 16' 4.421" N 103° 34' 20.919" W Point
PBHL - TD (TU#32H)	8958 00	4984 25	-1058 05	462026 76	32° 16' 4.421" N 103° 34' 20.919" W Point
PBHL - TD (TU#32H)	8958 00	4984 25	-1058 05	462026 76	32° 16' 4.421" N 103° 34' 20.919" W Point

WELL DETAILS			
Thistle Unit #32H			
Ground Level 3644.00			
WELL @ 3663 00' (Original Well Elev)			
+N-S	+E/W	North/S	Longitude
0 00	457042 52	777566 44	103° 34' 9.010" W

Design Lateral #1 (Thistle Unit #32H Lateral #1)	Date	18.21. August 31 2011
Created By Eric Minchew	Date	
Checked	Date	
Reviewed	Date	
Approved	Date	



Vertical Section at 348.02° (200 ft)