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JUL 05 2013

Drilling Services

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30-025-41254

Proposal



devon

THISTLE UNIT 49H

LEA COUNTY, NM

WELL FILE: **PLAN 1**

JUNE 27, 2013

Weatherford International, Ltd.

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JUL 11 2013



Thistle Unit 49H
Lea County, New Mexico

SECTION DETAILS									
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec Target
1	0.00	0.00	7.95	0.00	0.00	0.00	0.00	0.00	0.00
2	10788.54	0.00	7.95	10788.54	0.00	0.00	0.00	0.00	0.00
3	11536.86	89.80	7.95	11266.00	471.21	65.82	12.00	7.95	475.78
4	15788.78	89.80	7.95	11281.00	4682.22	654.06	0.00	0.00	4727.68 PBHL

WELL DETAILS							
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
Thistle Unit 49H	0.00	0.00	457286.88	780284.21	32°15'17.243N	103°33'37.360W	N/A

TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PBHL	11281.00	4682.22	654.06	461969.10	780938.27	Rectangle (4251x50)

SITE DETAILS	
Thistle Unit 49H	
Site Centre Northing: 457286.88 Easting: 780284.21	
Ground Level: 3639.00 Positional Uncertainty: 0.00 Convergence: 0.41	

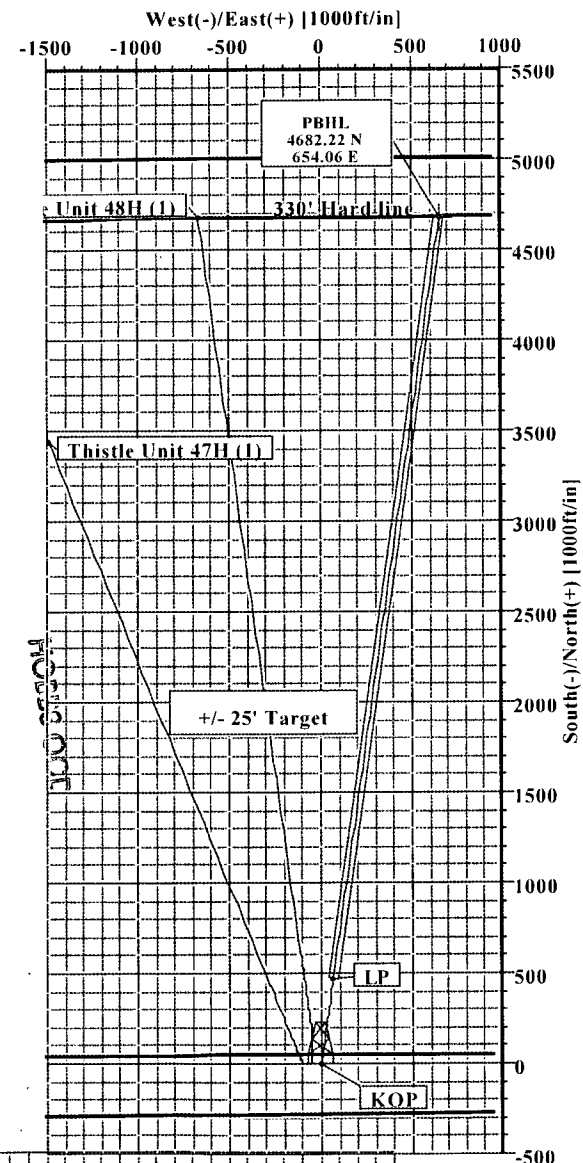
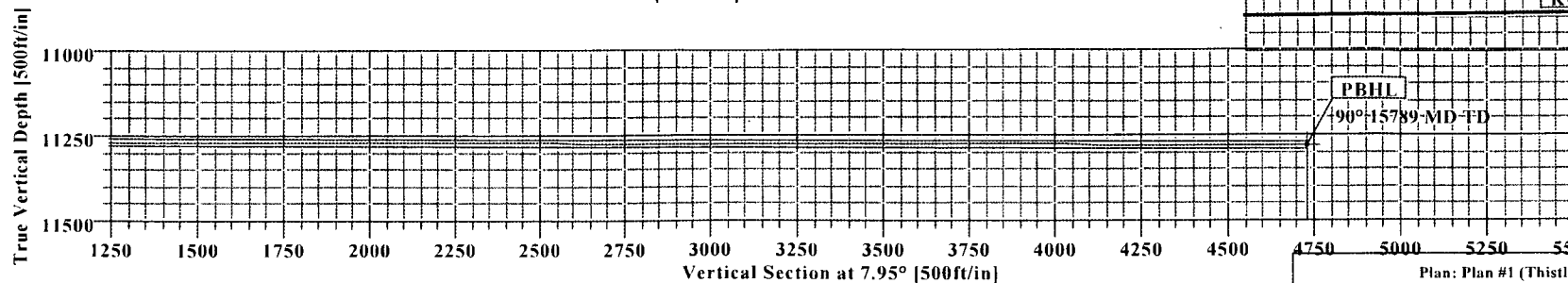
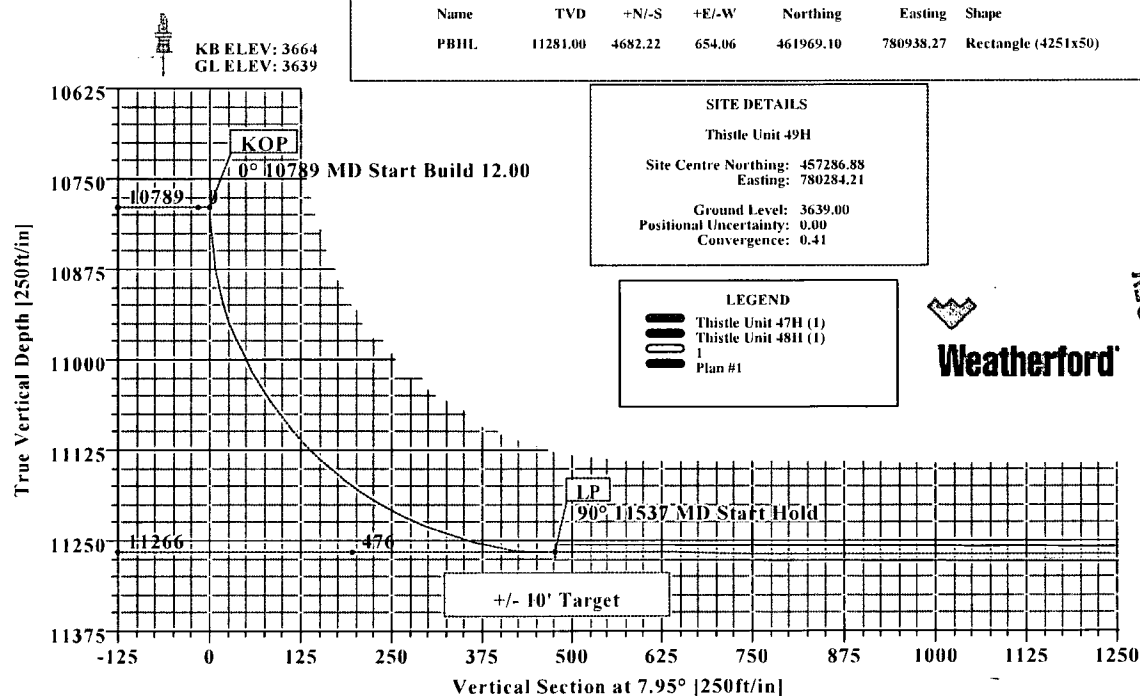
LEGEND	
	Thistle Unit 47H (1)
	Thistle Unit 48H (1)
	Plan #1



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Plan: Plan #1 (Thistle Unit 49H/1)

Created By: Russell W. Joyner

Date: 6/27/2013



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Wft Plan Report X Y's.

**Weatherford**

Company: Devon Energy
Field: Lea County, New Mexico (NAD 83)
Site: Thistle Unit 49H
Well: Thistle Unit 49H
Wellpath: 1

Date: 6/27/2013 Time: 07:30:16 Page: 1
Co-ordinate(NE) Reference: Well: Thistle Unit 49H, Grid North
Vertical (TVD) Reference: SITE 3664.0
Section (VS) Reference: Well (0.00N,0.00E,7.95Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Plan: Plan #1 Date Composed: 6/26/2013
Version: 1
Principal: Yes Tied-to: From Surface

Site: Thistle Unit 49H

Site Position: Northing: 457286.88 ft Latitude: 32 15 17.243 N
From: Map Easting: 780284.21 ft Longitude: 103 33 37.360 W
Position Uncertainty: 0.00 ft North Reference: Grid
Ground Level: 3639.00 ft Grid Convergence: 0.41 deg

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Well: Thistle Unit 49H Slot Name:
Well Position: +N/-S 0.00 ft Northing: 457286.88 ft Latitude: 32 15 17.243 N
+E/-W 0.00 ft Easting: 780284.21 ft Longitude: 103 33 37.360 W
Position Uncertainty: 0.00 ft

Wellpath: 1
Current Datum: SITE Height 3664.00 ft
Magnetic Data: 2/15/2014
Field Strength: 48394 nT
Vertical Section: Depth From (TVD) +N/-S
ft ft
0.00 0.00 0.00 7.95

Plan Section Information

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	7.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
10788.54	0.00	7.95	10788.54	0.00	0.00	0.00	0.00	0.00	0.00	
11536.86	89.80	7.95	11266.00	471.21	65.82	12.00	12.00	0.00	7.95	
15788.78	89.80	7.95	11281.00	4682.22	654.06	0.00	0.00	0.00	0.00	PBHL

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comments
10700.00	0.00	7.95	10700.00	0.00	0.00	0.00	0.00	457286.88	780284.21	
10788.54	0.00	7.95	10788.54	0.00	0.00	0.00	0.00	457286.88	780284.21	KOP
10800.00	1.38	7.95	10800.00	0.14	0.02	0.14	12.00	457287.02	780284.23	
10900.00	13.38	7.95	10898.99	12.83	1.79	12.95	12.00	457299.71	780286.00	
11000.00	25.38	7.95	10993.15	45.62	6.37	46.07	12.00	457332.50	780290.58	
11100.00	37.38	7.95	11078.38	97.09	13.56	98.03	12.00	457383.97	780297.77	
11200.00	49.38	7.95	11150.93	164.98	23.05	166.59	12.00	457451.86	780307.26	
11300.00	61.38	7.95	11207.65	246.33	34.41	248.72	12.00	457533.21	780318.62	
11400.00	73.38	7.95	11246.05	337.58	47.16	340.86	12.00	457624.46	780331.37	
11500.00	85.38	7.95	11264.45	434.75	60.73	438.97	12.00	457721.63	780344.94	
11536.86	89.80	7.95	11266.00	471.21	65.82	475.78	12.00	457758.09	780350.03	LP
11600.00	89.80	7.95	11266.22	533.74	74.56	538.92	0.00	457820.62	780358.77	
11700.00	89.80	7.95	11266.58	632.78	88.39	638.92	0.00	457919.66	780372.60	
11800.00	89.80	7.95	11266.93	731.82	102.23	738.92	0.00	458018.70	780386.44	
11900.00	89.80	7.95	11267.28	830.86	116.06	838.92	0.00	458117.74	780400.27	
12000.00	89.80	7.95	11267.64	929.89	129.90	938.92	0.00	458216.77	780414.11	
12100.00	89.80	7.95	11267.99	1028.93	143.73	1038.92	0.00	458315.81	780427.94	
12200.00	89.80	7.95	11268.34	1127.97	157.57	1138.92	0.00	458414.85	780441.78	
12300.00	89.80	7.95	11268.69	1227.01	171.40	1238.92	0.00	458513.89	780455.61	
12400.00	89.80	7.95	11269.05	1326.04	185.24	1338.92	0.00	458612.92	780469.45	
12500.00	89.80	7.95	11269.40	1425.08	199.07	1438.92	0.00	458711.96	780483.28	
12600.00	89.80	7.95	11269.75	1524.12	212.90	1538.92	0.00	458811.00	780497.11	
12700.00	89.80	7.95	11270.10	1623.16	226.74	1638.92	0.00	458910.04	780510.95	

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Wft Plan Report X Y's.



Weatherford

Company: Devon Energy
 Field: Lea County, New Mexico (NAD 83)
 Site: Thistle Unit 49H
 Well: Thistle Unit 49H
 Wellpath: 1

Date: 6/27/2013 Time: 07:30:16 Page: 2
 Co-ordinate(NE) Reference: Well: Thistle Unit 49H, Grid North
 Vertical (TVD) Reference: SITE 3664.0
 Section (VS) Reference: Well (0.00N,0.00E,7.95Azi)
 Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
12800.00	89.80	7.95	11270.46	1722.20	240.57	1738.92	0.00	459009.08	780524.78	
12900.00	89.80	7.95	11270.81	1821.23	254.41	1838.92	0.00	459108.11	780538.62	
13000.00	89.80	7.95	11271.16	1920.27	268.24	1938.92	0.00	459207.15	780552.45	
13100.00	89.80	7.95	11271.52	2019.31	282.08	2038.92	0.00	459306.19	780566.29	
13200.00	89.80	7.95	11271.87	2118.35	295.91	2138.91	0.00	459405.23	780580.12	
13300.00	89.80	7.95	11272.22	2217.38	309.75	2238.91	0.00	459504.26	780593.96	
13400.00	89.80	7.95	11272.57	2316.42	323.58	2338.91	0.00	459603.30	780607.79	
13500.00	89.80	7.95	11272.93	2415.46	337.42	2438.91	0.00	459702.34	780621.63	
13600.00	89.80	7.95	11273.28	2514.50	351.25	2538.91	0.00	459801.38	780635.46	
13700.00	89.80	7.95	11273.63	2613.54	365.09	2638.91	0.00	459900.42	780649.30	
13800.00	89.80	7.95	11273.98	2712.57	378.92	2738.91	0.00	459999.45	780663.13	
13900.00	89.80	7.95	11274.34	2811.61	392.75	2838.91	0.00	460098.49	780676.96	
14000.00	89.80	7.95	11274.69	2910.65	406.59	2938.91	0.00	460197.53	780690.80	
14100.00	89.80	7.95	11275.04	3009.69	420.42	3038.91	0.00	460296.57	780704.63	
14200.00	89.80	7.95	11275.40	3108.72	434.26	3138.91	0.00	460395.60	780718.47	
14300.00	89.80	7.95	11275.75	3207.76	448.09	3238.91	0.00	460494.64	780732.30	
14400.00	89.80	7.95	11276.10	3306.80	461.93	3338.91	0.00	460593.68	780746.14	
14500.00	89.80	7.95	11276.45	3405.84	475.76	3438.91	0.00	460692.72	780759.97	
14600.00	89.80	7.95	11276.81	3504.88	489.60	3538.91	0.00	460791.76	780773.81	
14700.00	89.80	7.95	11277.16	3603.91	503.43	3638.91	0.00	460890.79	780787.64	
14800.00	89.80	7.95	11277.51	3702.95	517.27	3738.90	0.00	460989.83	780801.48	
14900.00	89.80	7.95	11277.86	3801.99	531.10	3838.90	0.00	461088.87	780815.31	
15000.00	89.80	7.95	11278.22	3901.03	544.93	3938.90	0.00	461187.91	780829.14	
15100.00	89.80	7.95	11278.57	4000.06	558.77	4038.90	0.00	461286.94	780842.98	
15200.00	89.80	7.95	11278.92	4099.10	572.60	4138.90	0.00	461385.98	780856.81	
15300.00	89.80	7.95	11279.28	4198.14	586.44	4238.90	0.00	461485.02	780870.65	
15400.00	89.80	7.95	11279.63	4297.18	600.27	4338.90	0.00	461584.06	780884.48	
15500.00	89.80	7.95	11279.98	4396.21	614.11	4438.90	0.00	461683.09	780898.32	
15600.00	89.80	7.95	11280.33	4495.25	627.94	4538.90	0.00	461782.13	780912.15	
15700.00	89.80	7.95	11280.69	4594.29	641.78	4638.90	0.00	461881.17	780925.99	
15788.78	89.80	7.95	11281.00	4682.22	654.06	4727.68	0.00	461969.10	780938.27	PBHL

Targets

Name	Description Dip.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<--- Latitude --->			<--- Longitude --->		
PBHL		11281.00	4682.22	654.06	461969.10	780938.27	32	16	3.527 N	103	33	29.350 W

Casing Points

MD	TVD	Diameter	Hole Size	Name

Formations

MD	TVD	Formations	Lithology	Dip Angle	Dip Direction



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Wft Plan Report X Y's.



Weatherford

Company: Devon Energy
Field: Lea County, New Mexico (NAD 83)
Site: Thistle Unit 49H
Well: Thistle Unit 49H
Wellpath: 1

Date: 6/27/2013 Time: 07:30:16 Page: 3
Co-ordinate(NE) Reference: Well: Thistle Unit 49H, Grid North
Vertical (TVD) Reference: SITE 3664.0
Section (VS) Reference: Well (0.00N,0.00E,7.95Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Annotation

MD ft	TVD ft	
10788.54	10788.54	KOP
11536.86	11266.00	LP
15788.78	11281.00	PBHL

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Weatherford Anticollision Report



Company: Devon Energy Date: 6/27/2013 Time: 07:29:22 Page: 1
Field: Lea County, New Mexico (NAD 83)
Reference Site: Thistle Unit 49H Co-ordinate(NE) Reference: Well: Thistle Unit 49H, Grid North
Reference Well: Thistle Unit 49H Vertical (TVD) Reference: SITE 3664.0
Reference Wellpath: Db: Sybase

NO GLOBAL SCAN: Using user defined selection & scan criteria Reference: Plan: Plan #1
Interpolation Method: MD + Stations Interval: 100.00 ft Error Model: ISCWSA Ellipse
Depth Range: 0.00 to 15788.78 ft Scan Method: Closest Approach 3D
Maximum Radius: 10000.00 ft Error Surface: Ellipse

Plan: Plan #1 Date Composed: 6/26/2013
Principal: Yes Version: 1
Tied-to: From Surface

Summary

Site	Offset Wellpath Well	Wellpath	Reference MD ft	Offset MD ft	Ctr-Ctr Edge Distance ft	Separation Distance ft	Factor	Warning
Thistle Unit 47H	Thistle Unit 47H	1 V0 Plan: Plan #1 V1	10800.00	10801.03	100.07	51.80	2.07	
Thistle Unit 48H	Thistle Unit 48H	1 V0 Plan: Plan #1 V1	5600.00	5590.77	50.17	25.29	2.02	

Site: Thistle Unit 47H
Well: Thistle Unit 47H
Wellpath: 1 V0 Plan: Plan #1 V1

Inter-Site Error: 0.00 ft

Reference MD ft	TVD ft	Offset MD ft	TVD ft	Semi-Major Axis Ref ft	Offset ft	TFO-HS deg	Offset Location North ft	East ft	Ctr-Ctr Edge Distance ft	Separation Distance ft	Factor	Warning
0.00	0.00	2.00	2.00	0.00	0.00	269.64	-0.63	-99.98	99.98	99.98	59310.26	
100.00	100.00	102.00	102.00	0.08	0.09	269.64	-0.63	-99.98	99.98	99.81	577.70	
200.00	200.00	202.00	202.00	0.31	0.31	269.64	-0.63	-99.98	99.98	99.36	160.59	
300.00	300.00	302.00	302.00	0.53	0.54	269.64	-0.63	-99.98	99.98	98.91	93.26	
400.00	400.00	402.00	402.00	0.76	0.76	269.64	-0.63	-99.98	99.98	98.46	65.71	
500.00	500.00	502.00	502.00	0.98	0.99	269.64	-0.63	-99.98	99.98	98.01	50.72	
600.00	600.00	602.00	602.00	1.21	1.21	269.64	-0.63	-99.98	99.98	97.56	41.30	
700.00	700.00	702.00	702.00	1.43	1.44	269.64	-0.63	-99.98	99.98	97.11	34.83	
800.00	800.00	802.00	802.00	1.66	1.66	269.64	-0.63	-99.98	99.98	96.66	30.12	
900.00	900.00	902.00	902.00	1.88	1.89	269.64	-0.63	-99.98	99.98	96.21	26.53	
1000.00	1000.00	1002.00	1002.00	2.11	2.11	269.64	-0.63	-99.98	99.98	95.76	23.70	
1100.00	1100.00	1102.00	1102.00	2.33	2.34	269.64	-0.63	-99.98	99.98	95.31	21.42	
1200.00	1200.00	1202.00	1202.00	2.56	2.56	269.64	-0.63	-99.98	99.98	94.86	19.54	
1300.00	1300.00	1302.00	1302.00	2.78	2.79	269.64	-0.63	-99.98	99.98	94.41	17.96	
1400.00	1400.00	1402.00	1402.00	3.01	3.01	269.64	-0.63	-99.98	99.98	93.96	16.62	
1500.00	1500.00	1502.00	1502.00	3.23	3.24	269.64	-0.63	-99.98	99.98	93.52	15.46	
1600.00	1600.00	1602.00	1602.00	3.46	3.46	269.64	-0.63	-99.98	99.98	93.07	14.46	
1700.00	1700.00	1702.00	1702.00	3.68	3.69	269.64	-0.63	-99.98	99.98	92.62	13.57	
1800.00	1800.00	1802.00	1802.00	3.91	3.91	269.64	-0.63	-99.98	99.98	92.17	12.79	
1900.00	1900.00	1902.00	1902.00	4.13	4.13	269.64	-0.63	-99.98	99.98	91.72	12.10	
2000.00	2000.00	2002.00	2002.00	4.35	4.36	269.64	-0.63	-99.98	99.98	91.27	11.47	
2100.00	2100.00	2102.00	2102.00	4.58	4.58	269.64	-0.63	-99.98	99.98	90.82	10.91	
2200.00	2200.00	2202.00	2202.00	4.80	4.81	269.64	-0.63	-99.98	99.98	90.37	10.40	
2300.00	2300.00	2302.00	2302.00	5.03	5.03	269.64	-0.63	-99.98	99.98	89.92	9.94	
2400.00	2400.00	2402.00	2402.00	5.25	5.26	269.64	-0.63	-99.98	99.98	89.47	9.51	
2500.00	2500.00	2502.00	2502.00	5.48	5.48	269.64	-0.63	-99.98	99.98	89.02	9.12	
2600.00	2600.00	2602.00	2602.00	5.70	5.71	269.64	-0.63	-99.98	99.98	88.57	8.76	
2700.00	2700.00	2702.00	2702.00	5.93	5.93	269.64	-0.63	-99.98	99.98	88.12	8.43	
2800.00	2800.00	2802.00	2802.00	6.15	6.16	269.64	-0.63	-99.98	99.98	87.67	8.12	
2900.00	2900.00	2902.00	2902.00	6.38	6.38	269.64	-0.63	-99.98	99.98	87.22	7.84	
3000.00	3000.00	3002.00	3002.00	6.60	6.61	269.64	-0.63	-99.98	99.98	86.77	7.57	
3100.00	3100.00	3102.00	3102.00	6.83	6.83	269.64	-0.63	-99.98	99.98	86.32	7.32	
3200.00	3200.00	3202.00	3202.00	7.05	7.06	269.64	-0.63	-99.98	99.98	85.87	7.09	
3300.00	3300.00	3302.00	3302.00	7.28	7.28	269.64	-0.63	-99.98	99.98	85.42	6.87	
3400.00	3400.00	3402.00	3402.00	7.50	7.51	269.64	-0.63	-99.98	99.98	84.97	6.66	
3500.00	3500.00	3502.00	3502.00	7.73	7.73	269.64	-0.63	-99.98	99.98	84.52	6.47	

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Weatherford Anticollision Report

**Weatherford**

Company: Devon Energy
Field: Lea County, New Mexico (NAD 83)
Reference Site: Thistle Unit 49H
Reference Well: Thistle Unit 49H
Reference Wellpath:

Date: 6/27/2013 Time: 07:29:22
Co-ordinate(N/E) Reference: Well: Thistle Unit 49H, Grid North
Vertical (TVD) Reference: SITE 3664.0

Page: 2

Db: Sybase

Site: Thistle Unit 47H
Well: Thistle Unit 47H
Wellpath: 1 VO Plan: Plan #1 V1

Inter-Site Error: 0.00 ft

Reference MD ft	TVD ft	Offset MD ft	TVD ft	Semi-Major Axis Ref ft	Offset ft	TFO-HS deg	Offset Location North ft	East ft	Ctr-Ctr Edge Distance ft	Separation Distance ft	Factor	Warning
3600.00	3600.00	3602.00	3602.00	7.95	7.96	269.64	-0.63	-99.98	99.98	84.08	6.29	
3700.00	3700.00	3702.00	3702.00	8.18	8.18	269.64	-0.63	-99.98	99.98	83.63	6.11	
3800.00	3800.00	3802.00	3802.00	8.40	8.41	269.64	-0.63	-99.98	99.98	83.18	5.95	
3900.00	3900.00	3902.00	3902.00	8.63	8.63	269.64	-0.63	-99.98	99.98	82.73	5.79	
4000.00	4000.00	4002.00	4002.00	8.85	8.85	269.64	-0.63	-99.98	99.98	82.28	5.65	
4100.00	4100.00	4102.00	4102.00	9.07	9.08	269.64	-0.63	-99.98	99.98	81.83	5.51	
4200.00	4200.00	4202.00	4202.00	9.30	9.30	269.64	-0.63	-99.98	99.98	81.38	5.37	
4300.00	4300.00	4302.00	4302.00	9.52	9.53	269.64	-0.63	-99.98	99.98	80.93	5.25	
4400.00	4400.00	4402.00	4402.00	9.75	9.75	269.64	-0.63	-99.98	99.98	80.48	5.13	
4500.00	4500.00	4502.00	4502.00	9.97	9.98	269.64	-0.63	-99.98	99.98	80.03	5.01	
4600.00	4600.00	4602.00	4602.00	10.20	10.20	269.64	-0.63	-99.98	99.98	79.58	4.90	
4700.00	4700.00	4702.00	4702.00	10.42	10.43	269.64	-0.63	-99.98	99.98	79.13	4.79	
4800.00	4800.00	4802.00	4802.00	10.65	10.65	269.64	-0.63	-99.98	99.98	78.68	4.69	
4900.00	4900.00	4902.00	4902.00	10.87	10.88	269.64	-0.63	-99.98	99.98	78.23	4.60	
5000.00	5000.00	5002.00	5002.00	11.10	11.10	269.64	-0.63	-99.98	99.98	77.78	4.50	
5100.00	5100.00	5102.00	5102.00	11.32	11.33	269.64	-0.63	-99.98	99.98	77.33	4.41	
5200.00	5200.00	5202.00	5202.00	11.55	11.55	269.64	-0.63	-99.98	99.98	76.88	4.33	
5300.00	5300.00	5302.00	5302.00	11.77	11.78	269.64	-0.63	-99.98	99.98	76.43	4.25	
5400.00	5400.00	5402.00	5402.00	12.00	12.00	269.64	-0.63	-99.98	99.98	75.98	4.17	
5500.00	5500.00	5502.00	5502.00	12.22	12.23	269.64	-0.63	-99.98	99.98	75.53	4.09	
5600.00	5600.00	5602.00	5602.00	12.45	12.45	269.64	-0.63	-99.98	99.98	75.08	4.02	
5700.00	5700.00	5702.00	5702.00	12.67	12.68	269.64	-0.63	-99.98	99.98	74.64	3.94	
5800.00	5800.00	5802.00	5802.00	12.90	12.90	269.64	-0.63	-99.98	99.98	74.19	3.88	
5900.00	5900.00	5902.00	5902.00	13.12	13.13	269.64	-0.63	-99.98	99.98	73.74	3.81	
6000.00	6000.00	6002.00	6002.00	13.35	13.35	269.64	-0.63	-99.98	99.98	73.29	3.75	
6100.00	6100.00	6102.00	6102.00	13.57	13.57	269.64	-0.63	-99.98	99.98	72.84	3.68	
6200.00	6200.00	6202.00	6202.00	13.80	13.80	269.64	-0.63	-99.98	99.98	72.39	3.62	
6300.00	6300.00	6302.00	6302.00	14.02	14.02	269.64	-0.63	-99.98	99.98	71.94	3.57	
6400.00	6400.00	6402.00	6402.00	14.24	14.25	269.64	-0.63	-99.98	99.98	71.49	3.51	
6500.00	6500.00	6502.00	6502.00	14.47	14.47	269.64	-0.63	-99.98	99.98	71.04	3.45	
6600.00	6600.00	6602.00	6602.00	14.69	14.70	269.64	-0.63	-99.98	99.98	70.59	3.40	
6700.00	6700.00	6702.00	6702.00	14.92	14.92	269.64	-0.63	-99.98	99.98	70.14	3.35	
6800.00	6800.00	6802.00	6802.00	15.14	15.15	269.64	-0.63	-99.98	99.98	69.69	3.30	
6900.00	6900.00	6902.00	6902.00	15.37	15.37	269.64	-0.63	-99.98	99.98	69.24	3.25	
7000.00	7000.00	7002.00	7002.00	15.59	15.60	269.64	-0.63	-99.98	99.98	68.79	3.21	
7100.00	7100.00	7102.00	7102.00	15.82	15.82	269.64	-0.63	-99.98	99.98	68.34	3.16	
7200.00	7200.00	7202.00	7202.00	16.04	16.05	269.64	-0.63	-99.98	99.98	67.89	3.12	
7300.00	7300.00	7302.00	7302.00	16.27	16.27	269.64	-0.63	-99.98	99.98	67.44	3.07	
7400.00	7400.00	7402.00	7402.00	16.49	16.50	269.64	-0.63	-99.98	99.98	66.99	3.03	
7500.00	7500.00	7502.00	7502.00	16.72	16.72	269.64	-0.63	-99.98	99.98	66.54	2.99	
7600.00	7600.00	7602.00	7602.00	16.94	16.95	269.64	-0.63	-99.98	99.98	66.09	2.95	
7700.00	7700.00	7702.00	7702.00	17.17	17.17	269.64	-0.63	-99.98	99.98	65.64	2.91	
7800.00	7800.00	7802.00	7802.00	17.39	17.40	269.64	-0.63	-99.98	99.98	65.19	2.87	
7900.00	7900.00	7902.00	7902.00	17.62	17.62	269.64	-0.63	-99.98	99.98	64.75	2.84	
8000.00	8000.00	8002.00	8002.00	17.84	17.85	269.64	-0.63	-99.98	99.98	64.30	2.80	
8100.00	8100.00	8102.00	8102.00	18.07	18.07	269.64	-0.63	-99.98	99.98	63.85	2.77	
8200.00	8200.00	8202.00	8202.00	18.29	18.29	269.64	-0.63	-99.98	99.98	63.40	2.73	
8300.00	8300.00	8302.00	8302.00	18.52	18.52	269.64	-0.63	-99.98	99.98	62.95	2.70	
8400.00	8400.00	8402.00	8402.00	18.74	18.74	269.64	-0.63	-99.98	99.98	62.50	2.67	
8500.00	8500.00	8502.00	8502.00	18.96	18.97	269.64	-0.63	-99.98	99.98	62.05	2.64	
8600.00	8600.00	8602.00	8602.00	19.19	19.19	269.64	-0.63	-99.98	99.98	61.60	2.60	

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Weatherford

Anticollision Report

**Weatherford®**

Company: Devon Energy
Field: Lea County, New Mexico (NAD 83)
Reference Site: Thistle Unit 49H
Reference Well: Thistle Unit 49H
Reference Wellpath:

Date: 6/27/2013

Time: 07:29:22

Page: 3

Co-ordinate(NE) Reference: Well: Thistle Unit 49H, Grid North
Vertical (TVD) Reference: SITE 3664.0

Db: Sybase

Site: Thistle Unit 47H
Well: Thistle Unit 47H
Wellpath: 1 V0 Plan: Plan #1 V1

Inter-Site Error: 0.00 ft

Reference		Offset		Semi-Major Axis			Offset Location		Ctr-Ctr Edge		Separation		Warning
MD	TVD	MD	TVD	Ref	Offset	TFO-HS	North	East	Distance	Distance	Factor		
ft	ft	ft	ft	ft	ft	deg	ft	ft	ft	ft			
8700.00	8700.00	8702.00	8702.00	19.41	19.42	269.64	-0.63	-99.98	99.98	61.15	2.57		
8800.00	8800.00	8802.00	8802.00	19.64	19.64	269.64	-0.63	-99.98	99.98	60.70	2.55		
8900.00	8900.00	8902.00	8902.00	19.86	19.87	269.64	-0.63	-99.98	99.98	60.25	2.52		
9000.00	9000.00	9002.00	9002.00	20.09	20.09	269.64	-0.63	-99.98	99.98	59.80	2.49		
9100.00	9100.00	9102.00	9102.00	20.31	20.32	269.64	-0.63	-99.98	99.98	59.35	2.46		
9200.00	9200.00	9202.00	9202.00	20.54	20.54	269.64	-0.63	-99.98	99.98	58.90	2.43		
9300.00	9300.00	9302.00	9302.00	20.76	20.77	269.64	-0.63	-99.98	99.98	58.45	2.41		
9400.00	9400.00	9402.00	9402.00	20.99	20.99	269.64	-0.63	-99.98	99.98	58.00	2.38		
9500.00	9500.00	9502.00	9502.00	21.21	21.22	269.64	-0.63	-99.98	99.98	57.55	2.36		
9600.00	9600.00	9602.00	9602.00	21.44	21.44	269.64	-0.63	-99.98	99.98	57.10	2.33		
9700.00	9700.00	9702.00	9702.00	21.66	21.67	269.64	-0.63	-99.98	99.98	56.65	2.31		
9800.00	9800.00	9802.00	9802.00	21.89	21.89	269.64	-0.63	-99.98	99.98	56.20	2.28		
9900.00	9900.00	9902.00	9902.00	22.11	22.12	269.64	-0.63	-99.98	99.98	55.75	2.26		
10000.00	10000.00	10002.00	10002.00	22.34	22.34	269.64	-0.63	-99.98	99.98	55.31	2.24		
10100.00	10100.00	10102.00	10102.00	22.56	22.57	269.64	-0.63	-99.98	99.98	54.86	2.22		
10200.00	10200.00	10202.00	10202.00	22.79	22.79	269.64	-0.63	-99.98	99.98	54.41	2.19		
10300.00	10300.00	10302.00	10302.00	23.01	23.01	269.64	-0.63	-99.98	99.98	53.96	2.17		
10400.00	10400.00	10402.00	10402.00	23.24	23.24	269.64	-0.63	-99.98	99.98	53.51	2.15		
10500.00	10500.00	10502.00	10502.00	23.46	23.46	269.64	-0.63	-99.98	99.98	53.06	2.13		
10600.00	10600.00	10602.00	10602.00	23.68	23.69	269.64	-0.63	-99.98	99.98	52.61	2.11		
10700.00	10700.00	10702.00	10702.00	23.91	23.91	269.64	-0.63	-99.98	99.98	52.16	2.09		
10788.54	10788.54	10790.40	10790.40	24.11	24.11	269.64	-0.63	-99.98	99.98	51.76	2.07		
10800.00	10800.00	10801.03	10801.03	24.13	24.14	261.71	-0.48	-100.04	100.07	51.80	2.07		
10825.00	10824.96	10824.23	10824.19	24.19	24.19	261.75	0.61	-100.48	100.71	52.34	2.08		
10850.00	10849.83	10847.39	10847.24	24.24	24.24	261.78	2.73	-101.34	101.99	53.53	2.10		
10875.00	10874.53	10870.50	10870.09	24.30	24.29	261.80	5.88	-102.61	103.90	55.35	2.14		
10900.00	10898.99	10893.53	10892.69	24.35	24.34	261.82	10.03	-104.29	106.44	57.80	2.19		
10925.00	10923.15	10916.48	10914.96	24.40	24.39	261.84	15.17	-106.36	109.59	60.87	2.25		
10950.00	10946.94	10939.33	10936.83	24.46	24.43	261.86	21.26	-108.83	113.35	64.55	2.32		
10975.00	10970.30	10962.06	10958.26	24.51	24.48	261.91	28.28	-111.66	117.70	68.83	2.41		
11000.00	10993.15	10984.65	10979.19	24.56	24.53	261.97	36.19	-114.86	122.64	73.69	2.51		
11025.00	11015.45	11007.11	10999.56	24.61	24.58	262.07	44.95	-118.40	128.14	79.11	2.61		
11050.00	11037.13	11029.42	11019.33	24.66	24.62	262.19	54.52	-122.26	134.20	85.09	2.73		
11075.00	11058.12	11051.57	11038.46	24.72	24.67	262.35	64.86	-126.44	140.79	91.59	2.86		
11100.00	11078.38	11073.56	11056.93	24.77	24.72	262.56	75.93	-130.91	147.89	98.60	3.00		
11125.00	11097.84	11095.38	11074.69	24.83	24.77	262.81	87.68	-135.66	155.48	106.10	3.15		
11150.00	11116.45	11117.05	11091.74	24.89	24.82	263.10	100.08	-140.67	163.55	114.06	3.30		
11175.00	11134.16	11138.55	11108.03	24.95	24.88	263.43	113.08	-145.92	172.07	122.46	3.47		
11200.00	11150.93	11159.90	11123.57	25.02	24.93	263.82	126.65	-151.41	181.01	131.28	3.64		
11225.00	11166.70	11181.09	11138.34	25.09	24.99	264.24	140.75	-157.10	190.36	140.49	3.82		
11250.00	11181.44	11202.14	11152.32	25.16	25.05	264.71	155.34	-163.00	200.08	150.07	4.00		
11275.00	11195.10	11223.07	11165.52	25.24	25.12	265.22	170.39	-169.08	210.17	159.99	4.19		
11300.00	11207.65	11243.87	11177.93	25.32	25.19	265.77	185.87	-175.33	220.58	170.23	4.38		
11325.00	11219.04	11264.57	11189.53	25.41	25.26	266.36	201.76	-181.75	231.29	180.77	4.58		
11350.00	11229.26	11285.17	11200.34	25.51	25.34	266.98	218.02	-188.32	242.28	191.57	4.78		
11375.00	11238.27	11305.71	11210.35	25.60	25.42	267.63	234.64	-195.04	253.53	202.62	4.98		
11400.00	11246.05	11326.19	11219.56	25.71	25.50	268.31	251.61	-201.89	265.01	213.88	5.18		
11425.00	11252.57	11346.64	11227.96	25.82	25.59	269.02	268.89	-208.87	276.68	225.34	5.39		
11450.00	11257.82	11367.08	11235.55	25.93	25.69	269.74	286.48	-215.98	288.54	236.96	5.59		
11475.00	11261.78	11387.53	11242.32	26.06	25.79	270.48	304.37	-223.21	300.54	248.73	5.80		
11500.00	11264.45	11408.02	11248.28	26.18	25.90	271.24	322.55	-230.56	312.67	260.62	6.01		

HOBBS OCD

JUL 05 2013

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Weatherford Anticollision Report

**Weatherford**

Company: Devon Energy
Field: Lea County, New Mexico (NAD 83)
Reference Site: Thistle Unit 49H
Reference Well: Thistle Unit 49H
Reference Wellpath:

Date: 6/27/2013 Time: 07:29:22
Co-ordinate(NE) Reference: Well: Thistle Unit 49H, Grid North
Vertical (TVD) Reference: SITE 3664.0

Page: 4
Db: Sybase

Site: Thistle Unit 47H
Well: Thistle Unit 47H
Wellpath: 1 V0 Plan: Plan #1 V1

Inter-Site Error: 0.00 ft

Reference MD ft	TVD ft	Offset MD ft	TVD ft	Semi-Major Axis Ref ft	Offset ft	TFO-HS deg	Offset Location North ft	East ft	Ctr-Ctr Edge Distance ft	Separation Distance ft	Factor	Warning
11525.00	11265.81	11428.58	11253.40	26.31	26.01	272.00	341.01	-238.01	324.90	272.60	6.21	
11536.86	11266.00	11438.36	11255.53	26.38	26.07	272.37	349.87	-241.59	330.73	278.31	6.31	
11600.00	11266.22	11491.52	11263.69	26.74	26.39	270.71	398.55	-261.26	362.04	308.91	6.81	HOE33 OGD
11700.00	11266.58	11577.80	11266.14	27.40	26.99	270.28	478.47	-293.55	411.94	357.55	7.57	
11800.00	11266.93	11664.45	11266.42	28.17	27.70	270.24	558.81	-326.01	461.87	406.01	8.27	
11900.00	11267.28	11751.09	11266.71	29.03	28.49	270.22	639.14	-358.47	511.80	454.28	8.90	
12000.00	11267.64	11837.74	11266.99	29.97	29.37	270.19	719.48	-390.92	561.73	502.39	9.47	JUL 05 2013
12100.00	11267.99	11924.38	11267.28	30.99	30.33	270.18	799.81	-423.38	611.65	550.33	9.97	
12200.00	11268.34	12011.03	11267.56	32.07	31.37	270.16	880.15	-455.84	661.58	598.14	10.43	RECEIVED
12300.00	11268.69	12097.67	11267.85	33.23	32.47	270.15	960.48	-488.30	711.51	645.81	10.83	
12400.00	11269.05	12184.31	11268.13	34.43	33.64	270.14	1040.81	-520.75	761.44	693.36	11.19	
12500.00	11269.40	12270.96	11268.42	35.69	34.86	270.13	1121.15	-553.21	811.36	740.81	11.50	
12600.00	11269.75	12357.60	11268.70	37.00	36.13	270.12	1201.48	-585.67	861.29	788.16	11.78	
12700.00	11270.10	12444.25	11268.99	38.34	37.45	270.11	1281.82	-618.13	911.22	835.43	12.02	
12800.00	11270.46	12530.89	11269.27	39.72	38.80	270.10	1362.15	-650.58	961.15	882.63	12.24	
12900.00	11270.81	12617.54	11269.56	41.14	40.18	270.10	1442.49	-683.04	1011.07	929.76	12.43	
13000.00	11271.16	12704.18	11269.84	42.58	41.60	270.09	1522.82	-715.50	1061.00	976.82	12.60	
13100.00	11271.52	12790.82	11270.13	44.05	43.05	270.09	1603.16	-747.96	1110.93	1023.83	12.75	
13200.00	11271.87	12877.47	11270.41	45.55	44.52	270.08	1683.49	-780.41	1160.86	1070.79	12.89	
13300.00	11272.22	12964.11	11270.70	47.07	46.02	270.08	1763.83	-812.87	1210.78	1117.70	13.01	
13400.00	11272.57	13050.76	11270.98	48.60	47.54	270.07	1844.16	-845.33	1260.71	1164.57	13.11	
13500.00	11272.93	13137.40	11271.27	50.16	49.08	270.07	1924.50	-877.79	1310.64	1211.41	13.21	
13600.00	11273.28	13224.04	11271.55	51.73	50.63	270.06	2004.83	-910.24	1360.57	1258.21	13.29	
13700.00	11273.63	13310.69	11271.84	53.32	52.20	270.06	2085.16	-942.70	1410.49	1304.98	13.37	
13800.00	11273.98	13397.33	11272.12	54.92	53.78	270.06	2165.50	-975.16	1460.42	1351.72	13.44	
13900.00	11274.34	13483.98	11272.41	56.53	55.38	270.06	2245.83	-1007.62	1510.35	1398.44	13.50	
14000.00	11274.69	13570.62	11272.69	58.16	56.99	270.05	2326.17	-1040.07	1560.28	1445.13	13.55	
14100.00	11275.04	13657.27	11272.98	59.79	58.62	270.05	2406.50	-1072.53	1610.21	1491.80	13.60	
14200.00	11275.40	13743.91	11273.26	61.44	60.25	270.05	2486.84	-1104.99	1660.13	1538.45	13.64	
14300.00	11275.75	13830.55	11273.55	63.09	61.89	270.05	2567.17	-1137.45	1710.06	1585.08	13.68	
14400.00	11276.10	13917.20	11273.83	64.75	63.54	270.04	2647.51	-1169.90	1759.99	1631.70	13.72	
14500.00	11276.45	14003.84	11274.12	66.42	65.20	270.04	2727.84	-1202.36	1809.92	1678.30	13.75	
14600.00	11276.81	14090.49	11274.40	68.10	66.86	270.04	2808.18	-1234.82	1859.84	1724.88	13.78	
14700.00	11277.16	14177.13	11274.69	69.78	68.54	270.04	2888.51	-1267.28	1909.77	1771.45	13.81	
14800.00	11277.51	14263.78	11274.97	71.47	70.22	270.04	2968.85	-1299.73	1959.70	1818.01	13.83	
14900.00	11277.86	14350.42	11275.26	73.17	71.90	270.04	3049.18	-1332.19	2009.63	1864.56	13.85	
15000.00	11278.22	14437.06	11275.54	74.87	73.59	270.03	3129.52	-1364.65	2059.55	1911.10	13.87	
15100.00	11278.57	14523.71	11275.83	76.57	75.29	270.03	3209.85	-1397.11	2109.48	1957.62	13.89	
15200.00	11278.92	14610.35	11276.11	78.28	76.99	270.03	3290.18	-1429.56	2159.41	2004.14	13.91	
15300.00	11279.28	14697.00	11276.40	80.00	78.69	270.03	3370.52	-1462.02	2209.34	2050.65	13.92	
15400.00	11279.63	14783.64	11276.68	81.71	80.40	270.03	3450.85	-1494.48	2259.26	2097.15	13.94	
15500.00	11279.98	14870.29	11276.97	83.44	82.11	270.03	3531.19	-1526.94	2309.19	2143.64	13.95	
15600.00	11280.33	14956.93	11277.25	85.16	83.83	270.03	3611.52	-1559.39	2359.12	2190.13	13.96	
15700.00	11280.69	15043.57	11277.54	86.89	85.55	270.02	3691.86	-1591.85	2409.05	2236.61	13.97	
15788.78	11281.00	15120.50	11277.79	88.43	87.08	270.02	3763.18	-1620.67	2453.38	2277.87	13.98	



Weatherford Anticollision Report

**Weatherford**

Company: Devon Energy
Field: Lea County, New Mexico (NAD 83)
Reference Site: Thistle Unit 49H
Reference Well: Thistle Unit 49H
Reference Wellpath:

Date: 6/27/2013 Time: 07:29:22
Co-ordinate(NE) Reference: Well: Thistle Unit 49H, Grid North
Vertical (TVD) Reference: SITE 3664.0

Page: 5
Db: Sybase

Site: Thistle Unit 48H
Well: Thistle Unit 48H
Wellpath: 1 VO Plan: Plan #1 V1

Inter-Site Error: 0.00 ft

Reference		Offset		Semi-Major Axis			Offset Location		Ctr-Ctr Edge		Separation	Warning
MD	TVD	MD	TVD	Ref	Offset	TFO-HS	North	East	Distance	Distance	Factor	
ft	ft	ft	ft	ft	ft	deg	ft	ft	ft	ft		
0.00	0.00	9.00	-9.00	0.00	0.01	269.61	-0.34	-49.93	49.93	49.92	5807.77	
100.00	100.00	91.00	91.00	0.08	0.09	269.61	-0.34	-49.93	49.93	49.76	291.63	
200.00	200.00	191.00	191.00	0.31	0.30	269.61	-0.34	-49.93	49.93	49.32	81.97	
300.00	300.00	291.00	291.00	0.53	0.52	269.61	-0.34	-49.93	49.93	48.87	47.17	
400.00	400.00	391.00	391.00	0.76	0.75	269.61	-0.34	-49.93	49.93	48.42	33.11	
500.00	500.00	491.00	491.00	0.98	0.97	269.61	-0.34	-49.93	49.93	47.97	25.50	
600.00	600.00	591.00	591.00	1.21	1.20	269.61	-0.34	-49.93	49.93	47.52	20.74	
700.00	700.00	691.00	691.00	1.43	1.42	269.61	-0.34	-49.93	49.93	47.07	17.48	
800.00	800.00	791.00	791.00	1.66	1.65	269.61	-0.34	-49.93	49.93	46.62	15.10	
900.00	900.00	891.00	891.00	1.88	1.87	269.61	-0.34	-49.93	49.93	46.18	13.29	
1000.00	1000.00	991.00	991.00	2.11	2.10	269.61	-0.34	-49.93	49.93	45.73	11.87	
1100.00	1100.00	1091.00	1091.00	2.33	2.32	269.61	-0.34	-49.93	49.93	45.28	10.73	
1200.00	1200.00	1191.00	1191.00	2.56	2.55	269.61	-0.34	-49.93	49.93	44.83	9.78	
1300.00	1300.00	1291.00	1291.00	2.78	2.77	269.61	-0.34	-49.93	49.93	44.38	8.99	
1400.00	1400.00	1391.00	1391.00	3.01	3.00	269.61	-0.34	-49.93	49.93	43.93	8.32	
1500.00	1500.00	1491.00	1491.00	3.23	3.22	269.61	-0.34	-49.93	49.93	43.48	7.74	
1600.00	1600.00	1591.00	1591.00	3.46	3.45	269.61	-0.34	-49.93	49.93	43.03	7.23	
1700.00	1700.00	1691.00	1691.00	3.68	3.67	269.61	-0.34	-49.93	49.93	42.58	6.79	
1800.00	1800.00	1791.00	1791.00	3.91	3.90	269.61	-0.34	-49.93	49.93	42.13	6.40	
1900.00	1900.00	1891.00	1891.00	4.13	4.12	269.61	-0.34	-49.93	49.93	41.68	6.05	
2000.00	2000.00	1991.00	1991.00	4.35	4.35	269.61	-0.34	-49.93	49.93	41.23	5.74	
2100.00	2100.00	2091.00	2091.00	4.58	4.57	269.61	-0.34	-49.93	49.93	40.78	5.46	
2200.00	2200.00	2191.00	2191.00	4.80	4.80	269.61	-0.34	-49.93	49.93	40.33	5.20	
2300.00	2300.00	2291.00	2291.00	5.03	5.02	269.61	-0.34	-49.93	49.93	39.88	4.97	
2400.00	2400.00	2391.00	2391.00	5.25	5.24	269.61	-0.34	-49.93	49.93	39.43	4.76	
2500.00	2500.00	2491.00	2491.00	5.48	5.47	269.61	-0.34	-49.93	49.93	38.98	4.56	
2600.00	2600.00	2591.00	2591.00	5.70	5.69	269.61	-0.34	-49.93	49.93	38.53	4.38	
2700.00	2700.00	2691.00	2691.00	5.93	5.92	269.61	-0.34	-49.93	49.93	38.08	4.21	
2800.00	2800.00	2791.00	2791.00	6.15	6.14	269.61	-0.34	-49.93	49.93	37.63	4.06	
2900.00	2900.00	2891.00	2891.00	6.38	6.37	269.61	-0.34	-49.93	49.93	37.18	3.92	
3000.00	3000.00	2991.00	2991.00	6.60	6.59	269.61	-0.34	-49.93	49.93	36.74	3.78	
3100.00	3100.00	3091.00	3091.00	6.83	6.82	269.61	-0.34	-49.93	49.93	36.29	3.66	
3200.00	3200.00	3191.00	3191.00	7.05	7.04	269.61	-0.34	-49.93	49.93	35.84	3.54	
3300.00	3300.00	3291.00	3291.00	7.28	7.27	269.61	-0.34	-49.93	49.93	35.39	3.43	
3400.00	3400.00	3391.00	3391.00	7.50	7.49	269.61	-0.34	-49.93	49.93	34.94	3.33	
3500.00	3500.00	3491.00	3491.00	7.73	7.72	269.61	-0.34	-49.93	49.93	34.49	3.23	
3600.00	3600.00	3591.00	3591.00	7.95	7.94	269.61	-0.34	-49.93	49.93	34.04	3.14	
3700.00	3700.00	3691.00	3691.00	8.18	8.17	269.61	-0.34	-49.93	49.93	33.59	3.06	
3800.00	3800.00	3791.00	3791.00	8.40	8.39	269.61	-0.34	-49.93	49.93	33.14	2.97	
3900.00	3900.00	3891.00	3891.00	8.63	8.62	269.61	-0.34	-49.93	49.93	32.69	2.90	
4000.00	4000.00	3991.00	3991.00	8.85	8.84	269.61	-0.34	-49.93	49.93	32.24	2.82	
4100.00	4100.00	4091.00	4091.00	9.07	9.07	269.61	-0.34	-49.93	49.93	31.79	2.75	
4200.00	4200.00	4191.00	4191.00	9.30	9.29	269.61	-0.34	-49.93	49.93	31.34	2.69	
4300.00	4300.00	4291.00	4291.00	9.52	9.52	269.61	-0.34	-49.93	49.93	30.89	2.62	
4400.00	4400.00	4391.00	4391.00	9.75	9.74	269.61	-0.34	-49.93	49.93	30.44	2.56	
4500.00	4500.00	4491.00	4491.00	9.97	9.97	269.61	-0.34	-49.93	49.93	29.99	2.50	
4600.00	4600.00	4591.00	4591.00	10.20	10.19	269.61	-0.34	-49.93	49.93	29.54	2.45	
4700.00	4700.00	4691.00	4691.00	10.42	10.41	269.61	-0.34	-49.93	49.93	29.09	2.40	
4800.00	4800.00	4791.00	4791.00	10.65	10.64	269.61	-0.34	-49.93	49.93	28.64	2.35	
4900.00	4900.00	4891.00	4891.00	10.87	10.86	269.61	-0.34	-49.93	49.93	28.19	2.30	
5000.00	5000.00	4991.00	4991.00	11.10	11.09	269.61	-0.34	-49.93	49.93	27.74	2.25	

HOESS CO

JUL 05 2013

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Weatherford Anticollision Report



Company: Devon Energy
Field: Lea County, New Mexico (NAD 83)
Reference Site: Thistle Unit 49H
Reference Well: Thistle Unit 49H
Reference Wellpath:

Date: 6/27/2013 Time: 07:29:22 Page: 6
Co-ordinate(N/E) Reference: Well: Thistle Unit 49H, Grid North
Vertical (TVD) Reference: SITE 3664.0

Db: Sybase

Site: Thistle Unit 48H
Well: Thistle Unit 48H
Wellpath: 1 V0 Plan: Plan #1 V1

Inter-Site Error: 0.00 ft

Reference MD ft	TVD ft	Offset MD ft	TVD ft	Semi-Major Axis Ref ft	Offset ft	TFO-HS deg	Offset Location North ft	East ft	Ctr-Ctr Edge Distance ft	Separation Distance ft	Factor	Warning
5100.00	5100.00	5091.00	5091.00	11.32	11.31	269.61	-0.34	-49.93	49.93	27.29	2.21	HOEBS OCD JUL 05 2013 RECEIVED
5200.00	5200.00	5191.00	5191.00	11.55	11.54	269.61	-0.34	-49.93	49.93	26.85	2.16	
5300.00	5300.00	5291.00	5291.00	11.77	11.76	269.61	-0.34	-49.93	49.93	26.40	2.12	
5400.00	5400.00	5391.00	5391.00	12.00	11.99	269.61	-0.34	-49.93	49.93	25.95	2.08	
5500.00	5500.00	5491.00	5491.00	12.22	12.21	270.11	0.10	-49.93	49.93	25.50	2.04	JUL 05 2013 RECEIVED
5600.00	5600.00	5590.77	5590.64	12.45	12.43	275.54	4.85	-49.93	50.17	25.29	2.02	
5700.00	5700.00	5689.83	5689.20	12.67	12.65	286.39	14.69	-49.93	52.08	26.76	2.06	
5800.00	5800.00	5789.08	5787.71	12.90	12.87	298.21	26.78	-49.93	56.76	31.00	2.20	
5900.00	5900.00	5888.33	5886.23	13.12	13.10	307.91	38.88	-49.93	63.46	37.27	2.42	JUL 05 2013 RECEIVED
6000.00	6000.00	5987.59	5984.74	13.35	13.33	315.59	50.98	-49.93	71.63	45.00	2.69	
6100.00	6100.00	6086.84	6083.26	13.57	13.56	321.63	63.07	-49.93	80.81	53.74	2.98	
6200.00	6200.00	6186.10	6181.77	13.80	13.79	326.41	75.17	-49.93	90.71	63.19	3.30	
6300.00	6300.00	6285.35	6280.29	14.02	14.03	330.22	87.26	-49.93	101.11	73.14	3.62	JUL 05 2013 RECEIVED
6400.00	6400.00	6384.61	6378.80	14.24	14.27	333.32	99.36	-49.93	111.87	83.45	3.94	
6500.00	6500.00	6483.86	6477.31	14.47	14.51	335.87	111.46	-49.93	122.89	94.03	4.26	
6600.00	6600.00	6583.12	6575.83	14.69	14.76	338.00	123.55	-49.93	134.12	104.80	4.58	
6700.00	6700.00	6682.37	6674.34	14.92	15.00	339.79	135.65	-49.93	145.50	115.74	4.89	JUL 05 2013 RECEIVED
6800.00	6800.00	6785.59	6776.95	15.14	15.21	341.22	146.87	-49.93	155.76	125.56	5.16	
6900.00	6900.00	6889.38	6880.38	15.37	15.41	342.18	155.35	-49.93	163.52	132.90	5.34	
7000.00	7000.00	6993.55	6984.40	15.59	15.60	342.77	161.03	-49.93	168.73	137.69	5.44	
7100.00	7100.00	7097.96	7088.77	15.82	15.79	343.06	163.88	-49.93	171.33	139.89	5.45	JUL 05 2013 RECEIVED
7200.00	7200.00	7200.19	7191.00	16.04	15.98	343.09	164.24	-49.93	171.66	139.79	5.39	
7300.00	7300.00	7300.19	7291.00	16.27	16.20	343.09	164.24	-49.93	171.66	139.34	5.31	
7400.00	7400.00	7400.19	7391.00	16.49	16.42	343.09	164.24	-49.93	171.66	138.89	5.24	
7500.00	7500.00	7500.19	7491.00	16.72	16.64	343.09	164.24	-49.93	171.66	138.45	5.17	JUL 05 2013 RECEIVED
7600.00	7600.00	7600.19	7591.00	16.94	16.86	343.09	164.24	-49.93	171.66	138.00	5.10	
7700.00	7700.00	7700.19	7691.00	17.17	17.08	343.09	164.24	-49.93	171.66	137.55	5.03	
7800.00	7800.00	7800.19	7791.00	17.39	17.30	343.09	164.24	-49.93	171.66	137.10	4.97	
7900.00	7900.00	7900.19	7891.00	17.62	17.52	343.09	164.24	-49.93	171.66	136.65	4.90	JUL 05 2013 RECEIVED
8000.00	8000.00	8000.19	7991.00	17.84	17.75	343.09	164.24	-49.93	171.66	136.20	4.84	
8100.00	8100.00	8100.19	8091.00	18.07	17.97	343.09	164.24	-49.93	171.66	135.76	4.78	
8200.00	8200.00	8200.19	8191.00	18.29	18.19	343.09	164.24	-49.93	171.66	135.31	4.72	
8300.00	8300.00	8300.19	8291.00	18.52	18.41	343.09	164.24	-49.93	171.66	134.86	4.66	JUL 05 2013 RECEIVED
8400.00	8400.00	8400.19	8391.00	18.74	18.63	343.09	164.24	-49.93	171.66	134.41	4.61	
8500.00	8500.00	8500.19	8491.00	18.96	18.85	343.09	164.24	-49.93	171.66	133.96	4.55	
8600.00	8600.00	8600.19	8591.00	19.19	19.08	343.09	164.24	-49.93	171.66	133.51	4.50	
8700.00	8700.00	8700.19	8691.00	19.41	19.30	343.09	164.24	-49.93	171.66	133.07	4.45	JUL 05 2013 RECEIVED
8800.00	8800.00	8800.19	8791.00	19.64	19.52	343.09	164.24	-49.93	171.66	132.62	4.40	
8900.00	8900.00	8900.19	8891.00	19.86	19.74	343.09	164.24	-49.93	171.66	132.17	4.35	
9000.00	9000.00	9000.19	8991.00	20.09	19.96	343.09	164.24	-49.93	171.66	131.72	4.30	
9100.00	9100.00	9100.19	9091.00	20.31	20.19	343.09	164.24	-49.93	171.66	131.27	4.25	JUL 05 2013 RECEIVED
9200.00	9200.00	9200.19	9191.00	20.54	20.41	343.09	164.24	-49.93	171.66	130.82	4.20	
9300.00	9300.00	9300.19	9291.00	20.76	20.63	343.09	164.24	-49.93	171.66	130.37	4.16	
9400.00	9400.00	9400.19	9391.00	20.99	20.85	343.09	164.24	-49.93	171.66	129.93	4.11	
9500.00	9500.00	9500.19	9491.00	21.21	21.08	343.09	164.24	-49.93	171.66	129.48	4.07	JUL 05 2013 RECEIVED
9600.00	9600.00	9600.19	9591.00	21.44	21.30	343.09	164.24	-49.93	171.66	129.03	4.03	
9700.00	9700.00	9700.19	9691.00	21.66	21.52	343.09	164.24	-49.93	171.66	128.58	3.98	
9800.00	9800.00	9800.19	9791.00	21.89	21.74	343.09	164.24	-49.93	171.66	128.13	3.94	
9900.00	9900.00	9900.19	9891.00	22.11	21.97	343.09	164.24	-49.93	171.66	127.68	3.90	JUL 05 2013 RECEIVED
10000.00	10000.00	10000.19	9991.00	22.34	22.19	343.09	164.24	-49.93	171.66	127.23	3.86	
10100.00	10100.00	10100.19	10091.00	22.56	22.41	343.09	164.24	-49.93	171.66	126.78	3.83	



Weatherford Anticollision Report

**Weatherford**

Company: Devon Energy
Field: Lea County, New Mexico (NAD 83)
Reference Site: Thistle Unit 49H
Reference Well: Thistle Unit 49H
Reference Wellpath:

Date: 6/27/2013 Time: 07:29:22
Co-ordinate(N.E) Reference: Well: Thistle Unit 49H, Grid North
Vertical (TVD) Reference: SITE 3664.0

Page: 7
Db: Sybase

Site: Thistle Unit 48H
Well: Thistle Unit 48H
Wellpath: 1 V0 Plan: Plan #1 V1

Inter-Site Error: 0.00 ft

Reference		Offset		Semi-Major Axis			Offset Location		Ctr-Ctr Edge		Separation	Warning
MD	TVD	MD	TVD	Ref	Offset	TFO-HS	North	East	Distance	Distance	Factor	
ft	ft	ft	ft	ft	ft	deg	ft	ft	ft	ft		
10200.00	10200.00	10200.19	10191.00	22.79	22.63	343.09	164.24	-49.93	171.66	126.34	3.79	
10300.00	10300.00	10300.19	10291.00	23.01	22.86	343.09	164.24	-49.93	171.66	125.89	3.75	
10400.00	10400.00	10400.19	10391.00	23.24	23.08	343.09	164.24	-49.93	171.66	125.44	3.71	
10500.00	10500.00	10500.19	10491.00	23.46	23.30	343.09	164.24	-49.93	171.66	124.99	3.68	HOESS OCD
10600.00	10600.00	10600.19	10591.00	23.68	23.53	343.09	164.24	-49.93	171.66	124.54	3.64	
10700.00	10700.00	10700.19	10691.00	23.91	23.75	343.09	164.24	-49.93	171.66	124.09	3.61	
10788.54	10788.54	10788.73	10779.54	24.11	23.95	343.09	164.24	-49.93	171.66	123.69	3.58	
10800.00	10800.00	10799.75	10790.56	24.13	23.97	335.11	164.24	-49.93	171.54	123.53	3.57	JUL 05 2013
10825.00	10824.96	10818.20	10809.00	24.19	24.01	334.97	164.64	-49.99	170.94	122.88	3.56	
10850.00	10849.83	10836.67	10827.43	24.24	24.05	334.72	165.75	-50.14	170.11	122.03	3.54	
10875.00	10874.53	10855.15	10845.82	24.30	24.10	334.36	167.56	-50.38	169.06	121.01	3.52	RECEIVED
10900.00	10898.99	10873.64	10864.14	24.35	24.14	333.88	170.08	-50.73	167.80	119.81	3.50	
10925.00	10923.15	10892.15	10882.36	24.40	24.19	333.27	173.31	-51.17	166.33	118.45	3.47	
10950.00	10946.94	10910.68	10900.46	24.46	24.24	332.55	177.23	-51.71	164.67	116.94	3.45	
10975.00	10970.30	10929.24	10918.42	24.51	24.29	331.69	181.86	-52.34	162.83	115.28	3.42	
11000.00	10993.15	10947.82	10936.20	24.56	24.34	330.70	187.18	-53.07	160.85	113.50	3.40	
11025.00	11015.45	10966.43	10953.79	24.61	24.39	329.57	193.19	-53.89	158.73	111.61	3.37	
11050.00	11037.13	10985.07	10971.17	24.66	24.44	328.29	199.90	-54.80	156.51	109.63	3.34	
11075.00	11058.12	11003.75	10988.30	24.72	24.49	326.86	207.28	-55.81	154.22	107.58	3.31	
11100.00	11078.38	11022.48	11005.16	24.77	24.55	325.27	215.34	-56.92	151.90	105.48	3.27	
11125.00	11097.84	11041.25	11021.73	24.83	24.61	323.52	224.07	-58.11	149.58	103.37	3.24	
11150.00	11116.45	11060.07	11037.99	24.89	24.67	321.61	233.47	-59.39	147.32	101.26	3.20	
11175.00	11134.16	11078.96	11053.91	24.95	24.73	319.53	243.53	-60.77	145.15	99.21	3.16	
11200.00	11150.93	11097.91	11069.48	25.02	24.79	317.29	254.24	-62.23	143.14	97.24	3.12	
11225.00	11166.70	11116.94	11084.66	25.09	24.86	314.89	265.60	-63.79	141.34	95.40	3.08	
11250.00	11181.44	11136.05	11099.43	25.16	24.93	312.33	277.61	-65.43	139.82	93.74	3.03	
11275.00	11195.10	11155.25	11113.77	25.24	25.00	309.64	290.25	-67.16	138.62	92.32	2.99	
11300.00	11207.65	11174.55	11127.67	25.32	25.08	306.83	303.53	-68.97	137.83	91.20	2.96	
11325.00	11219.04	11193.96	11141.08	25.41	25.16	303.91	317.43	-70.87	137.50	90.44	2.92	
11350.00	11229.26	11213.51	11154.00	25.51	25.24	300.93	331.96	-72.86	137.68	90.11	2.89	
11375.00	11238.27	11233.19	11166.39	25.60	25.33	297.90	347.11	-74.93	138.42	90.28	2.88	
11400.00	11246.05	11253.02	11178.23	25.71	25.42	294.85	362.88	-77.08	139.77	91.01	2.87	
11425.00	11252.57	11273.03	11189.49	25.82	25.52	291.83	379.26	-79.32	141.75	92.35	2.87	
11450.00	11257.82	11293.22	11200.14	25.93	25.62	288.85	396.26	-81.65	144.39	94.34	2.88	
11475.00	11261.78	11313.62	11210.16	26.06	25.73	285.95	413.86	-84.05	147.68	97.00	2.91	
11500.00	11264.45	11334.25	11219.50	26.18	25.84	283.14	432.08	-86.54	151.62	100.36	2.96	
11525.00	11265.81	11355.13	11228.15	26.31	25.96	280.46	450.91	-89.12	156.19	104.39	3.02	
11536.86	11266.00	11365.13	11231.99	26.38	26.02	279.23	460.06	-90.37	158.57	106.54	3.05	
11600.00	11266.22	11420.79	11249.79	26.74	26.36	272.49	512.28	-97.51	173.56	120.48	3.27	
11700.00	11266.58	11515.95	11265.66	27.40	27.02	267.54	605.08	-110.19	200.67	146.27	3.69	
11800.00	11266.93	11612.75	11267.00	28.17	27.78	267.57	700.96	-123.30	227.81	171.88	4.07	
11900.00	11267.28	11709.00	11267.33	29.03	28.62	267.83	796.32	-136.33	254.91	197.28	4.42	
12000.00	11267.64	11805.25	11267.67	29.97	29.55	268.04	891.69	-149.37	282.01	222.51	4.74	
12100.00	11267.99	11901.50	11268.01	30.99	30.56	268.21	987.05	-162.40	309.12	247.59	5.02	
12200.00	11268.34	11997.76	11268.34	32.07	31.65	268.35	1082.42	-175.44	336.23	272.52	5.28	
12300.00	11268.69	12094.01	11268.68	33.23	32.79	268.47	1177.78	-188.48	363.34	297.33	5.50	
12400.00	11269.05	12190.26	11269.01	34.43	34.00	268.58	1273.15	-201.51	390.45	322.03	5.71	
12500.00	11269.40	12286.51	11269.35	35.69	35.26	268.67	1368.51	-214.55	417.57	346.62	5.89	
12600.00	11269.75	12382.77	11269.69	37.00	36.57	268.75	1463.88	-227.58	444.68	371.13	6.05	
12700.00	11270.10	12479.02	11270.02	38.34	37.91	268.82	1559.24	-240.62	471.79	395.55	6.19	
12800.00	11270.46	12575.27	11270.36	39.72	39.30	268.88	1654.61	-253.66	498.91	419.90	6.31	



Weatherford Anticollision Report



Weatherford

Company: Devon Energy Date: 6/27/2013 Time: 07:29:22 Page: 8
Field: Lea County, New Mexico (NAD 83)
Reference Site: Thistle Unit 49H Co-ordinate(NE) Reference: Well: Thistle Unit 49H, Grid North
Reference Well: Thistle Unit 49H Vertical (TVD) Reference: SITE 3664.0
Reference Wellpath: Db: Sybase

Site: Thistle Unit 48H
Well: Thistle Unit 48H
Wellpath: 1 V0 Plan: Plan #1 V1

Inter-Site Error: 0.00 ft

Reference MD ft	TVD ft	Offset MD ft	TVD ft	Semi-Major Axis Ref ft	Offset ft	TFO-HS deg	Offset Location North ft	East ft	Ctr-Ctr Edge Distance ft	Separation Distance ft	Factor	Warning
12900.00	11270.81	12671.52	11270.69	41.14	40.72	268.94	1749.97	-266.69	526.03	444.18	6.43	
13000.00	11271.16	12767.77	11271.03	42.58	42.17	268.99	1845.33	-279.73	553.14	468.40	6.53	
13100.00	11271.52	12864.03	11271.37	44.05	43.64	269.04	1940.70	-292.76	580.26	492.57	6.62	
13200.00	11271.87	12960.28	11271.70	45.55	45.14	269.08	2036.06	-305.80	607.38	516.69	6.70	
13300.00	11272.22	13056.53	11272.04	47.07	46.67	269.12	2131.43	-318.84	634.49	540.77	6.77	
13400.00	11272.57	13152.78	11272.37	48.60	48.21	269.15	2226.79	-331.87	661.61	564.80	6.83	
13500.00	11272.93	13249.04	11272.71	50.16	49.77	269.18	2322.16	-344.91	688.73	588.80	6.89	HOESS OCE
13600.00	11273.28	13345.29	11273.05	51.73	51.35	269.21	2417.52	-357.94	715.85	612.77	6.94	
13700.00	11273.63	13441.54	11273.38	53.32	52.95	269.24	2512.89	-370.98	742.97	636.71	6.99	JUL 05 2013
13800.00	11273.98	13537.79	11273.72	54.92	54.56	269.27	2608.25	-384.02	770.08	660.61	7.03	
13900.00	11274.34	13634.04	11274.05	56.53	56.18	269.29	2703.62	-397.05	797.20	684.50	7.07	
14000.00	11274.69	13730.30	11274.39	58.16	57.81	269.31	2798.98	-410.09	824.32	708.36	7.11	RECEIVED
14100.00	11275.04	13826.55	11274.73	59.79	59.45	269.34	2894.35	-423.12	851.44	732.20	7.14	
14200.00	11275.40	13922.80	11275.06	61.44	61.10	269.36	2989.71	-436.16	878.56	756.02	7.17	
14300.00	11275.75	14019.05	11275.40	63.09	62.77	269.37	3085.08	-449.19	905.68	779.83	7.20	
14400.00	11276.10	14115.30	11275.73	64.75	64.44	269.39	3180.44	-462.23	932.80	803.61	7.22	
14500.00	11276.45	14211.56	11276.07	66.42	66.11	269.41	3275.81	-475.27	959.92	827.38	7.24	
14600.00	11276.81	14307.81	11276.41	68.10	67.80	269.42	3371.17	-488.30	987.03	851.14	7.26	
14700.00	11277.16	14404.06	11276.74	69.78	69.49	269.44	3466.54	-501.34	1014.15	874.89	7.28	
14800.00	11277.51	14500.31	11277.08	71.47	71.19	269.45	3561.90	-514.37	1041.27	898.62	7.30	
14900.00	11277.86	14596.57	11277.41	73.17	72.89	269.47	3657.27	-527.41	1068.39	922.34	7.32	
15000.00	11278.22	14692.82	11277.75	74.87	74.60	269.48	3752.63	-540.45	1095.51	946.05	7.33	
15100.00	11278.57	14789.07	11278.09	76.57	76.31	269.49	3847.99	-553.48	1122.63	969.75	7.34	
15200.00	11278.92	14885.32	11278.42	78.28	78.03	269.50	3943.36	-566.52	1149.75	993.44	7.36	
15300.00	11279.28	14981.57	11278.76	80.00	79.76	269.51	4038.72	-579.55	1176.87	1017.12	7.37	
15400.00	11279.63	15077.83	11279.09	81.71	81.48	269.52	4134.09	-592.59	1203.99	1040.80	7.38	
15500.00	11279.98	15174.08	11279.43	83.44	83.21	269.53	4229.45	-605.63	1231.11	1064.46	7.39	
15600.00	11280.33	15270.33	11279.77	85.16	84.95	269.54	4324.82	-618.66	1258.23	1088.12	7.40	
15700.00	11280.69	15366.58	11280.10	86.89	86.68	269.55	4420.18	-631.70	1285.35	1111.78	7.41	
15788.78	11281.00	15452.04	11280.40	88.43	88.23	269.56	4504.85	-643.27	1309.43	1132.77	7.41	

**Weatherford®****Weatherford Drilling Services**

GeoDec v5.03

Report Date: June 26, 2013

Job Number: _____

Customer: Devon Energy

Well Name: Thistle Unit 49H

API Number: _____

Rig Name: _____

Location: Lea County, NM

Block: _____

Engineer: RWJ

HOESS OCD

JUL 05 2013

US State Plane 1983

System: New Mexico Eastern Zone

Projection: Transverse Mercator/Gauss Kruger

Datum: North American Datum 1983

Ellipsoid: GRS 1980

North/South 457286.880 USFT

East/West 780284.210 USFT

Grid Convergence: .41°

Total Correction: +6.96°

Geodetic Latitude / Longitude

System: Latitude / Longitude

Projection: Geodetic Latitude and Longitude

Datum: North American Datum 1983

Ellipsoid: GRS 1980

Latitude 32.2547922 DEG

Longitude -103.5603728 DEG

RECEIVED

Geodetic Location WGS84

Elevation = 0.0 Meters

Latitude = 32.25479° N 32° 15 min 17.252 sec

Longitude = 103.56037° W 103° 33 min 37.342 sec

Magnetic Declination = 7.37° [True North Offset]

Local Gravity = .9988 g

Local Field Strength = 48377 nT

Magnetic Dip = 60.14°

Magnetic Model = bggm2013

Spud Date = Feb 15, 2014

Checksum = 6638

Magnetic Vector X = 23889 nT

Magnetic Vector Y = 3088 nT

Magnetic Vector Z = 41953 nT

Magnetic Vector H = 24088 nT

Signed: _____

Date: _____