



Weatherford

30-025-42821

Evaluation, Drilling & Intervention

10000 West County Rd. 116

P.O. Box 61028

Midland, TX USA 79711

Tel. (432) 561-8892 Fax (432) 561-8895

Devon Energy
333 W. Sheridan Ave
Oklahoma City, OK, 73102

Date: November 17, 2015

Attention: Ryan Dzurisin

HOBBS

Re: Devon Energy
Well: North Thistle 2 State 2H
Lea County, New Mexico

JAN 05 2018

RECEIVED

Enclosed, please find the original survey performed on the referenced well by Precision Energy Services, Inc. (P-5 No. 676004), a Weatherford company. Other information required by your office is as follows:

Name & Title Of Surveyor	Well Number	Surveyed Depths	Dates Performed	Type of Survey
Andrew Schmidt	2H	5067 MD	11/5/2015	Measurement
MWD Supervisor		15399 MD	11/13/2015	While Drilling

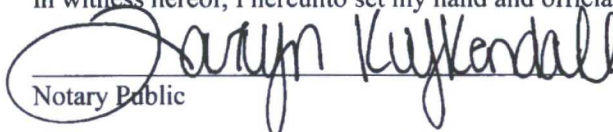
A notarized plan vs. actual is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

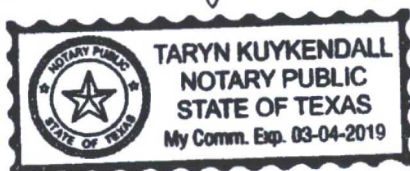


Jonathan Leger
MWD Ops Coordinator

On this, the 19th day of November, 2015, before me a notary public, the undersigned officer, personally appeared Jonathan Leger, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same for the purposes therein contained.

In witness hereof, I hereunto set my hand and official seal.


Notary Public



CONFIDENTIAL

**5D Survey Report**

Devon Energy

Field Name: *Lea Co, NM Nad 83 NMEZ*
Site Name: *North Thistle 2 State 2H, 1H*
Well Name: *North Thistle 2 State 2H*
Survey: *Definitive survey*

16 November 2015





North Thistle 2 State 2H

Field Name:	Map Units: US ft		Company Name: Devon Energy	
Lea Co, NM Nad 83 NMEZ	Vertical Reference Datum (VRD): Mean Sea Level			
	Projected Coordinate System: NAD83 / New Mexico East (ftUS)			
	Comment:			
	Units: US ft	North Reference: Grid	Convergence Angle: 0.42	
Site:				
North Thistle 2 State 2H, 1H	Elevation above MSL: 3515.00 US ft			
	Comment:			
Slot:				
North Thistle 2 State 2H	Slot TVD Reference: Ground Elevation			
	Elevation above MSL: 3515.00US ft			
	Comment:			
Well:	Type: Main well	UWI:		
North Thistle 2 State 2H	File Number:	Comment:		
	Closure Distance: 4443.39US ft	Closure Azimuth: 183.03°		
	Vertical Section: Position of Origin (Relative to Slot centre)			
	+N/-S: -0.00US ft	+E/-W: 0.00US ft	Az: 186.83°	
Drill floor: Survey Name: Definitive Survey				
Rig Height (Kelly Bushing): 25.00us ft	Elevation above MSL: 3540.00us ft	Inclination: 0.00°	Azimuth: 0.00°	
Survey Name: Definitive Survey				
Date: 24/Sep/2015	Survey Tool: See Survey Tool Ranges below.	Comment:	Company:	
Magnetic Model:				
Model Name: bggm2015	Date: 30/Oct/2015	Field Strength: 48280.7nT	Declination: 7.21°	Dip: 60.25°
Tie Point:				
MD: 0.00 US ft	Inclination: 0.00°	Azimuth: 0.00°	TVD: 0.00 US ft	North Offset: -0.00 US ft
				East Offset: 0.00 US ft
Survey Tool Ranges:				
Name	Start MD(USft)	End MD(USft)	Source Survey	
MWD	0.00	4956.00	Extreme MWD Svys	
MWD	4956.00	15474.00	Wft MWD Svy	
Wellpath created using minimum curvature.				

5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Kelly Bushing)										
PD (US ft)	Incl (°)	At (%)	TVD (US ft)	N Offset (US ft)	E Offset (US ft)	Wc (US ft)	Dist 1000US ft	Northng (US ft)	Eastng (US ft)	Comment
0.00	0.00	0.00	0.00	-0.00	0.00	-0.00	0.00	488169.46	786040.51	
170.00	0.88	47.18	169.99	0.89	0.96	-0.99	0.52	488170.35	786041.47	
319.00	1.32	46.20	318.97	2.85	3.04	-3.19	0.30	488172.31	786043.55	
510.00	1.10	46.10	509.92	5.65	5.94	-6.31	0.12	488175.11	786046.45	
608.00	1.20	12.90	607.90	7.30	6.85	-8.06	0.68	488176.76	786047.36	
793.00	1.20	357.10	792.86	11.12	7.19	-11.90	0.18	488180.58	786047.70	
888.00	1.40	353.80	887.84	13.27	7.01	-14.01	0.22	488182.73	786047.52	
983.00	1.40	349.90	982.81	15.57	6.68	-16.25	0.10	488185.03	786047.19	
1068.00	1.19	343.19	1067.79	17.43	6.24	-18.05	0.30	488186.89	786046.75	
1252.00	1.41	358.48	1251.74	21.53	5.63	-22.04	0.22	488190.99	786046.14	
1445.00	1.01	2.31	1444.70	25.60	5.64	-26.09	0.21	488195.06	786046.15	
1639.00	1.01	9.80	1638.67	28.99	6.00	-29.50	0.07	488198.45	786046.51	
1826.00	0.88	32.67	1825.64	31.82	7.05	-32.44	0.21	488201.28	786047.56	
2017.00	1.41	50.78	2016.61	34.55	9.66	-35.45	0.33	488204.01	786050.17	
2210.00	2.20	54.47	2209.51	38.20	14.52	-39.66	0.41	488207.66	786055.03	
2396.00	2.90	57.28	2395.32	42.82	21.38	-45.06	0.38	488212.28	786061.89	
2588.00	3.50	59.40	2587.02	48.43	30.51	-51.71	0.32	488217.89	786071.02	
2781.00	3.90	56.98	2779.62	55.00	41.09	-59.50	0.22	488224.46	786081.60	
2972.00	4.70	65.19	2970.08	61.82	53.64	-67.77	0.53	488231.28	786094.15	
3164.00	5.41	66.29	3161.34	68.77	69.07	-76.49	0.37	488238.23	786109.58	
3355.00	5.01	65.68	3351.55	75.82	84.91	-85.38	0.21	488245.28	786125.42	
3546.00	5.71	68.09	3541.71	82.80	101.32	-94.26	0.38	488252.26	786141.83	
3641.00	6.58	71.39	3636.16	86.30	110.87	-98.87	0.99	488255.76	786151.38	
3737.00	7.21	68.40	3731.47	90.27	121.68	-104.10	0.76	488259.73	786162.19	
3832.00	7.38	68.97	3825.70	94.66	132.92	-109.79	0.19	488264.12	786173.43	
3928.00	7.29	70.29	3920.91	98.93	144.41	-115.40	0.20	488268.39	786184.92	
4024.00	7.59	71.30	4016.11	103.01	156.15	-120.85	0.34	488272.47	786196.66	
4118.00	7.29	69.81	4109.31	107.06	167.63	-126.24	0.38	488276.52	786208.14	
4215.00	6.11	67.30	4205.65	111.18	178.16	-131.58	1.25	488280.64	786218.67	
4311.00	5.58	69.39	4301.15	114.79	187.25	-136.25	0.59	488284.25	786227.76	
4406.00	4.92	67.08	4395.75	118.00	195.32	-140.40	0.73	488287.46	786235.83	
4593.00	5.19	66.29	4582.03	124.53	210.45	-148.67	0.15	488293.99	786250.96	
4688.00	5.58	59.70	4676.61	128.59	218.37	-153.64	0.77	488298.05	786258.88	
4788.00	5.10	53.81	4776.17	133.66	226.16	-159.61	0.73	488303.12	786266.67	
4884.00	4.70	51.88	4871.82	138.61	232.70	-165.30	0.45	488308.07	786273.21	
4956.00	4.61	49.77	4943.58	142.30	237.23	-169.50	0.27	488311.76	786277.74	Tie-on Extreme
5067.00	4.18	45.25	5054.26	148.03	243.50	-175.94	0.50	488317.49	786284.01	First Wft Svy
5163.00	4.07	44.31	5150.01	152.93	248.37	-181.38	0.13	488322.39	786288.88	
5258.00	4.04	42.17	5244.77	157.82	252.97	-186.79	0.16	488327.28	786293.48	
5354.00	4.29	39.01	5340.52	163.12	257.50	-192.59	0.35	488332.58	786298.01	
5449.00	3.82	36.08	5435.28	168.44	261.60	-198.35	0.54	488337.90	786302.11	
5546.00	3.99	30.73	5532.06	173.95	265.23	-204.26	0.41	488343.41	786305.74	
5641.00	3.37	32.47	5626.86	179.15	268.42	-209.80	0.66	488348.61	786308.93	
5737.00	3.36	29.81	5722.69	183.97	271.33	-214.93	0.16	488353.43	786311.84	
5832.00	2.25	42.39	5817.58	187.76	273.97	-219.01	1.33	488357.22	786314.48	
5927.00	1.90	49.38	5912.52	190.16	276.42	-221.69	0.45	488359.62	786316.93	
6023.00	1.93	48.59	6008.46	192.27	278.84	-224.07	0.04	488361.73	786319.35	
6118.00	1.85	44.72	6103.41	194.42	281.12	-226.47	0.16	488363.88	786321.63	
6214.00	1.98	46.50	6199.36	196.66	283.42	-228.97	0.15	488366.12	786323.93	
6309.00	1.38	54.68	6294.32	198.45	285.54	-231.00	0.68	488367.91	786326.05	
6500.00	0.98	38.77	6485.28	201.05	288.44	-233.93	0.27	488370.51	786328.95	
6691.00	1.16	30.15	6676.24	204.00	290.43	-237.09	0.13	488373.46	786330.94	
6882.00	1.26	21.00	6867.20	207.63	292.16	-240.90	0.11	488377.09	786332.67	
7073.00	1.09	30.00	7058.16	211.17	293.82	-244.61	0.13	488380.63	786334.33	
7264.00	0.77	40.31	7249.14	213.72	295.56	-247.35	0.19	488383.18	786336.07	
7455.00	0.63	41.56	7440.12	215.48	297.08	-249.28	0.07	488384.94	786337.59	
7646.00	0.63	38.74	7631.11	217.09	298.44	-251.04	0.02	488386.55	786338.95	

SD Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Kelly Bushing)											Comment
TDB (US ft)	Inc (%)	Age (yr)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	VS (US ft)	Dip (1000s ft)	Northing (US ft)	Easting (US ft)		
7837.00	0.53	55.15	7822.10	218.41	299.82	-252.52	0.10	488387.87	786340.33		
8028.00	0.21	97.01	8013.10	218.87	300.89	-253.10	0.21	488388.33	786341.40		
8219.00	0.22	101.21	8204.09	218.76	301.60	-253.07	0.01	488388.22	786342.11		
8410.00	0.22	134.09	8395.09	218.43	302.22	-252.82	0.07	488387.89	786342.73		
8601.00	0.07	176.17	8586.09	218.06	302.49	-252.49	0.09	488387.52	786343.00		
8792.00	0.28	88.53	8777.09	217.96	302.97	-252.44	0.15	488387.42	786343.48		
8983.00	0.16	38.48	8968.09	218.18	303.60	-252.73	0.11	488387.64	786344.11		
9175.00	0.80	356.14	9160.08	219.72	303.68	-254.28	0.36	488389.18	786344.19		
9366.00	0.94	347.23	9351.06	222.58	303.24	-257.07	0.10	488392.04	786343.75		
9557.00	0.45	256.77	9542.05	223.94	302.16	-258.28	0.55	488393.40	786342.67		
9748.00	0.30	19.13	9733.05	224.24	301.60	-258.52	0.35	488393.70	786342.11		
9940.00	1.61	325.71	9925.02	226.94	300.24	-261.04	0.76	488396.40	786340.75		
10130.00	2.39	301.78	10114.91	231.24	295.37	-264.72	0.59	488400.70	786335.88		
10226.00	1.88	292.47	10210.84	232.89	292.21	-265.99	0.64	488402.35	786332.72		
10322.00	2.22	286.46	10306.78	234.02	288.98	-266.73	0.42	488403.48	786329.49		
10417.00	2.54	291.17	10401.70	235.30	285.25	-267.55	0.39	488404.76	786325.76		
10457.00	2.16	298.25	10441.66	235.98	283.76	-268.05	1.19	488405.44	786324.27		
10553.00	7.43	186.78	10537.40	230.66	281.43	-262.49	8.81	488400.12	786321.94		
10585.00	13.16	185.34	10568.87	224.98	280.84	-256.78	17.92	488394.44	786321.35		
10617.00	18.72	186.56	10599.63	216.24	279.92	-247.99	17.41	488385.70	786320.43		
10648.00	23.96	187.26	10628.49	205.05	278.55	-236.72	16.92	488374.51	786319.06		
10680.00	28.32	188.25	10657.21	191.08	276.64	-222.63	13.69	488360.54	786317.15		
10712.00	31.26	188.80	10684.98	175.36	274.28	-206.74	9.23	488344.82	786314.79		
10744.00	34.03	190.53	10711.92	158.35	271.37	-189.50	9.13	488327.81	786311.88		
10792.00	38.40	192.42	10750.64	130.57	265.71	-161.24	9.40	488300.03	786306.22		
10839.00	41.60	193.07	10786.64	101.11	259.04	-131.20	6.87	488270.57	786299.55		
10887.00	45.02	193.75	10821.56	69.09	251.40	-98.50	7.19	488238.55	786291.91		
10935.00	48.65	193.52	10854.40	35.07	243.15	-63.74	7.57	488204.53	786283.66		
10982.00	52.06	190.24	10884.38	-0.34	235.73	-27.70	9.03	488169.12	786276.24		
11030.00	56.85	187.70	10912.28	-38.90	229.67	11.31	10.87	488130.56	786270.18		
11078.00	62.62	186.98	10936.47	-80.00	224.38	52.75	12.09	488089.46	786264.89		
11126.00	67.05	187.40	10956.87	-123.09	218.94	96.18	9.26	488046.37	786259.45		
11173.00	71.13	187.20	10973.64	-166.63	213.36	140.08	8.69	488002.83	786253.87		
11221.00	75.07	186.41	10987.59	-212.23	207.93	185.99	8.36	487957.23	786248.44		
11278.00	79.87	185.26	10999.96	-267.57	202.28	241.61	8.65	487901.89	786242.79		
11326.00	82.56	184.84	11007.29	-314.81	198.10	289.02	5.67	487854.65	786238.61		
11374.00	83.90	184.56	11012.94	-362.32	194.20	336.65	2.85	487807.14	786234.71		
11422.00	85.59	184.72	11017.34	-409.96	190.33	384.41	3.54	487759.50	786230.84		
11517.00	89.00	183.80	11021.82	-504.57	183.28	479.20	3.72	487664.89	786223.79		
11612.00	88.88	183.09	11023.58	-599.39	177.58	574.01	0.76	487570.07	786218.09		
11708.00	88.32	183.08	11025.93	-695.22	172.41	669.78	0.58	487474.24	786212.92		
11803.00	88.46	183.72	11028.60	-790.01	166.78	764.57	0.69	487379.45	786207.29		
11899.00	88.25	183.13	11031.35	-885.80	161.05	860.36	0.65	487283.66	786201.56		
11994.00	88.81	183.98	11033.79	-980.59	155.16	955.18	1.07	487188.87	786195.67		
12090.00	89.58	185.48	11035.14	-1076.25	147.24	1051.10	1.76	487093.21	786187.75		
12185.00	89.09	183.00	11036.24	-1170.97	140.22	1145.99	2.66	486998.49	786180.73		
12281.00	88.53	186.06	11038.23	-1266.64	132.64	1241.88	3.24	486902.82	786173.15		
12376.00	88.81	187.31	11040.44	-1360.97	121.58	1336.85	1.35	486808.49	786162.09		
12472.00	89.51	188.20	11041.85	-1456.08	108.63	1432.82	1.18	486713.38	786149.14		
12567.00	90.77	188.53	11041.61	-1550.06	94.81	1527.79	1.37	486619.40	786135.32		
12663.00	91.12	188.81	11040.03	-1644.95	80.34	1623.73	0.47	486524.51	786120.85		
12758.00	91.19	188.20	11038.12	-1738.89	66.30	1718.67	0.65	486430.57	786106.81		
12854.00	90.84	187.55	11036.42	-1833.97	53.14	1814.63	0.77	486335.49	786093.65		
12949.00	90.35	187.17	11035.43	-1928.18	40.98	1909.62	0.65	486241.28	786081.49		
13045.00	90.70	185.10	11034.55	-2023.62	30.72	2005.61	2.19	486145.84	786071.23		
13141.00	90.70	184.44	11033.38	-2119.28	22.73	2101.54	0.69	486050.18	786063.24		
13236.00	89.86	185.30	11032.91	-2213.94	14.67	2196.48	1.27	485955.52	786055.18		
13332.00	90.35	187.04	11032.74	-2309.37	4.35	2292.47	1.88	485860.09	786044.86		
13427.00	90.35	187.24	11032.16	-2403.64	-7.46	2387.47	0.21	485765.82	786033.05		

5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Kelly Bushing)										
HD (US ft)	Incl (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	VS (US ft)	DLS (° 100US ft)	Northing (US ft)	Easting (US ft)	Comment
13522.00	92.17	187.66	11030.07	-2497.81	-19.77	2482.43	1.97	485671.65	786020.74	
13618.00	92.17	187.15	11026.43	-2592.94	-32.13	2578.36	0.53	485576.52	786008.38	
13714.00	92.38	186.93	11022.62	-2688.14	-43.89	2674.28	0.32	485481.32	785996.62	
13809.00	91.26	185.64	11019.60	-2782.52	-54.28	2769.23	1.80	485386.94	785986.23	
13904.00	90.42	185.53	11018.21	-2877.06	-63.53	2864.19	0.89	485292.40	785976.98	
14000.00	90.98	184.97	11017.04	-2972.64	-72.31	2960.15	0.82	485196.82	785968.20	
14096.00	91.05	183.74	11015.34	-3068.35	-79.60	3056.04	1.28	485101.11	785960.91	
14191.00	91.61	186.33	11013.13	-3162.95	-87.94	3150.96	2.79	485006.51	785952.57	
14287.00	91.19	186.30	11010.79	-3258.34	-98.49	3246.93	0.44	484911.12	785942.02	
14382.00	91.96	187.35	11008.18	-3352.63	-109.78	3341.89	1.37	484816.83	785930.73	
14478.00	91.26	186.54	11005.48	-3447.88	-121.38	3437.85	1.11	484721.58	785919.13	
14574.00	91.19	188.08	11003.43	-3543.08	-133.59	3533.82	1.61	484626.38	785906.92	
14669.00	90.84	187.49	11001.74	-3637.19	-146.46	3628.79	0.72	484532.27	785894.05	
14765.00	90.35	187.12	11000.75	-3732.40	-158.66	3724.79	0.64	484437.06	785881.85	
14867.00	89.93	186.43	11000.50	-3833.69	-170.70	3826.78	0.79	484335.77	785869.81	
14956.00	90.77	187.33	10999.95	-3922.05	-181.36	3915.78	1.38	484247.41	785859.15	
15052.00	91.12	186.74	10998.37	-4017.31	-193.11	4011.77	0.71	484152.15	785847.40	
15147.00	90.56	186.36	10996.98	-4111.68	-203.95	4106.75	0.71	484057.78	785836.56	
15243.00	90.21	185.85	10996.33	-4207.13	-214.16	4202.74	0.64	483962.33	785826.35	
15338.00	89.86	185.07	10996.27	-4301.70	-223.20	4297.72	0.90	483867.76	785817.31	
15399.00	89.37	185.05	10996.68	-4362.46	-228.58	4358.69	0.80	483807.00	785811.93	Last Wft Svy
15473.74	89.37	185.05	10997.51	-4436.91	-235.16	4433.39	0.00	483732.55	785805.35	Cross Prod Box
15474.00	89.37	185.05	10997.51	-4437.17	-235.18	4433.64	0.00	483732.29	785805.33	Proj to Bit