



Job Number: MD-130716
 Company: Devon Energy Corporation
 Lease/Well: Josey Wales 16 State Com 3H
 Location: Eddy Co., NM
 Rig Name: Scandril Texas
 RKB: 26
 G.L. or M.S.L.: 3206

State/Country: NM
 Declination: 7.62
 Grid: 7.55
 File name: C:\USERS\LEAM\DESKTOP\JOSEYW-1\SURVEYS\130716
 Date/Time: 05-Jul-13 / 08:22
 Curve Name: As Drilled

LEAM Drilling Systems

WINSERVE SURVEY CALCULATIONS
 Minimum Curvature Method
 Vertical Section Plane .16
 Vertical Section Referenced to Wellhead
 Rectangular Coordinates Referenced to Wellhead

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE Distance FT	Direction Deg	Dogleg Severity Deg/100
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
The following are VES gyro surveys.									
101.00	.61	28.91	101.00	.47	.26	.47	.54	28.91	.60
201.00	1.21	44.67	200.99	1.69	1.26	1.69	2.11	36.74	.64
301.00	1.84	67.41	300.95	3.06	3.48	3.06	4.63	48.75	.86
401.00	2.22	80.35	400.89	4.00	6.88	4.02	7.95	59.83	.59
501.00	2.63	89.15	500.80	4.36	11.08	4.39	11.90	68.54	.55
601.00	2.91	95.50	600.68	4.15	15.90	4.19	16.43	75.39	.42
701.00	2.76	93.72	700.56	3.75	20.83	3.80	21.16	79.80	.17
801.00	2.36	97.99	800.46	3.30	25.27	3.37	25.49	82.55	.44
901.00	2.47	103.25	900.37	2.52	29.41	2.61	29.52	85.09	.25
1001.00	2.37	103.05	1000.28	1.56	33.52	1.66	33.56	87.33	.10
1101.00	2.41	111.58	1100.19	.32	37.49	.43	37.49	89.51	.36
1201.00	2.63	110.20	1200.10	-1.24	41.60	-1.13	41.62	91.71	.23
1301.00	2.67	108.21	1299.99	-2.76	45.96	-2.63	46.05	93.44	.10
1401.00	3.23	116.04	1399.86	-4.73	50.71	-4.59	50.93	95.33	.69
1501.00	3.79	108.46	1499.67	-7.01	56.37	-6.85	56.81	97.09	.73
1601.00	4.01	108.78	1599.44	-9.18	62.82	-9.01	63.49	98.32	.22
1701.00	3.92	111.57	1699.20	-11.56	69.31	-11.37	70.27	99.47	.21
1801.00	3.87	121.18	1798.97	-14.57	75.37	-14.36	76.77	100.94	.65
1901.00	3.56	125.57	1898.76	-18.12	80.79	-17.90	82.79	102.64	.42
2001.00	3.49	129.90	1998.57	-21.88	85.65	-21.64	88.40	104.33	.28
2101.00	2.77	133.71	2098.42	-25.50	89.73	-25.25	93.28	105.87	.75
2201.00	2.60	131.99	2198.31	-28.69	93.16	-28.43	97.48	107.12	.19
2301.00	2.12	134.97	2298.23	-31.51	96.15	-31.25	101.19	108.15	.50
2401.00	2.11	135.49	2398.16	-34.13	98.75	-33.86	104.49	109.07	.02

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
2501.00	2.27	133.03	2498.09	-36.80	101.49	-36.51	107.96	109.93	.19
2601.00	1.98	134.00	2598.02	-39.35	104.18	-39.06	111.37	110.69	.29
2701.00	1.85	134.42	2697.96	-41.68	106.58	-41.38	114.44	111.36	.13
2801.00	1.80	136.26	2797.91	-43.94	108.82	-43.64	117.35	111.99	.08
2901.00	1.84	138.65	2897.86	-46.28	110.96	-45.97	120.23	112.64	.09
3001.00	1.73	140.50	2997.81	-48.65	112.98	-48.34	123.01	113.30	.12
3101.00	1.60	138.58	3097.77	-50.87	114.87	-50.54	125.63	113.88	.14
3201.00	1.50	144.78	3197.73	-52.98	116.55	-52.66	128.02	114.45	.20
3301.00	1.54	141.37	3297.70	-55.10	118.14	-54.77	130.36	115.00	.10
3401.00	1.52	140.88	3397.66	-57.18	119.82	-56.84	132.76	115.51	.02
3501.00	1.52	142.06	3497.63	-59.25	121.47	-58.91	135.15	116.00	.03
3601.00	1.31	142.79	3597.60	-61.21	122.97	-60.87	137.37	116.46	.21
3701.00	1.38	145.70	3697.57	-63.12	124.34	-62.77	139.45	116.91	.10
3801.00	1.49	135.26	3797.54	-65.03	125.94	-64.68	141.74	117.31	.28
3901.00	1.27	147.42	3897.51	-66.89	127.45	-66.54	143.94	117.69	.37
4001.00	1.30	154.10	3997.48	-68.85	128.54	-68.49	145.82	118.17	.15
4101.00	1.30	146.23	4097.46	-70.81	129.67	-70.45	147.74	118.64	.18
4201.00	1.46	153.85	4197.43	-72.90	130.86	-72.53	149.79	119.12	.24
4301.00	1.26	149.46	4297.40	-74.99	131.98	-74.62	151.79	119.60	.23
4401.00	1.45	150.11	4397.37	-77.03	133.17	-76.66	153.84	120.05	.19
4501.00	1.17	154.88	4497.35	-79.05	134.23	-78.68	155.78	120.49	.30
4601.00	.95	170.34	4597.33	-80.79	134.81	-80.42	157.16	120.94	.36
4701.00	1.18	158.61	4697.31	-82.57	135.32	-82.19	158.52	121.39	.32
4801.00	1.07	149.90	4797.29	-84.34	136.16	-83.95	160.17	121.77	.20
4901.00	.97	152.51	4897.28	-85.89	137.02	-85.51	161.72	122.08	.11
5001.00	.88	145.94	4997.26	-87.28	137.84	-86.90	163.15	122.34	.14
5101.00	.91	164.18	5097.25	-88.68	138.49	-88.29	164.45	122.63	.29
5201.00	.87	164.97	5197.24	-90.18	138.90	-89.79	165.61	122.99	.04
5301.00	.76	161.08	5297.23	-91.54	139.32	-91.15	166.70	123.31	.12
5401.00	.76	156.15	5397.22	-92.77	139.80	-92.38	167.78	123.57	.07
5501.00	1.05	162.72	5497.21	-94.25	140.34	-93.86	169.05	123.89	.31
5601.00	.85	151.44	5597.19	-95.78	140.97	-95.39	170.43	124.19	.27
5701.00	1.12	163.08	5697.18	-97.37	141.61	-96.97	171.85	124.51	.33
5801.00	1.20	165.25	5797.16	-99.32	142.16	-98.92	173.41	124.94	.09
5901.00	.94	160.05	5897.14	-101.10	142.70	-100.70	174.89	125.32	.28
6001.00	1.09	157.24	5997.13	-102.75	143.35	-102.35	176.37	125.63	.16
6101.00	1.00	163.52	6097.11	-104.46	143.97	-104.06	177.87	125.96	.15
The following are LEAM MWD surveys. ST01 departs original wellbore at 6118'MD.									
6178.00	4.84	357.88	6174.03	-101.86	144.04	-101.45	176.41	125.27	7.55
6210.00	5.10	357.71	6205.91	-99.09	143.93	-98.68	174.74	124.54	.81
6304.00	5.63	356.30	6299.50	-90.31	143.47	-89.91	169.52	122.19	.58
6399.00	3.61	355.25	6394.19	-82.68	142.92	-82.28	165.11	120.05	2.13
6493.00	3.52	349.09	6488.00	-76.90	142.13	-76.50	161.59	118.42	.42
6577.00	5.19	359.82	6571.76	-70.56	141.63	-70.17	158.23	116.48	2.20
6672.00	5.63	357.88	6666.34	-61.61	141.44	-61.22	154.28	113.54	.50
6767.00	5.54	355.77	6760.89	-52.38	140.93	-51.99	150.35	110.39	.24

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
6861.00	4.84	352.61	6854.50	-43.92	140.08	-43.53	146.81	107.41	.80
6955.00	4.13	345.05	6948.21	-36.72	138.70	-36.33	143.48	104.83	.98
7018.00	5.01	349.97	7011.01	-31.82	137.64	-31.43	141.27	103.02	1.53
7050.00	8.44	358.28	7042.79	-28.09	137.32	-27.71	140.17	101.56	11.11
7081.00	12.84	1.57	7073.25	-22.37	137.35	-21.99	139.16	99.25	14.32
7112.00	17.85	2.63	7103.13	-14.18	137.66	-13.80	138.39	95.88	16.19
7144.00	22.34	3.51	7133.18	-3.20	138.26	-2.82	138.30	91.33	14.06
7176.00	25.32	4.21	7162.45	9.69	139.13	10.08	139.47	86.01	9.35
7207.00	28.23	4.74	7190.12	23.61	140.23	24.00	142.20	80.44	9.42
7238.00	31.13	4.21	7217.05	38.91	141.42	39.31	146.68	74.61	9.39
7270.00	34.73	2.45	7243.90	56.28	142.42	56.67	153.13	68.44	11.64
7301.00	38.51	1.05	7268.78	74.76	142.97	75.16	161.34	62.40	12.49
7333.00	41.86	359.46	7293.23	95.40	143.05	95.80	171.95	56.30	10.95
7364.00	45.64	358.76	7315.61	116.83	142.72	117.23	184.44	50.70	12.29
7395.00	49.15	359.82	7336.60	139.64	142.44	140.04	199.47	45.57	11.60
7427.00	52.76	.34	7356.75	164.49	142.48	164.89	217.62	40.90	11.35
7459.00	56.89	.52	7375.18	190.64	142.68	191.04	238.12	36.81	12.91
7491.00	60.76	.17	7391.74	218.01	142.84	218.41	260.64	33.23	12.13
7522.00	64.54	359.11	7405.98	245.54	142.66	245.94	283.98	30.16	12.57
7554.00	68.68	358.59	7418.68	274.90	142.07	275.30	309.44	27.33	13.02
7585.00	73.16	358.06	7428.82	304.18	141.21	304.57	335.36	24.90	14.54
7616.00	77.82	357.71	7436.58	334.16	140.10	334.55	362.34	22.75	15.07
7647.00	82.31	357.18	7441.93	364.66	138.74	365.04	390.16	20.83	14.58
7712.00	87.67	357.00	7447.60	429.30	135.46	429.68	450.16	17.51	8.25
7807.00	87.85	357.53	7451.32	524.12	130.93	524.48	540.22	14.03	.59
7901.00	89.52	357.53	7453.47	618.00	126.88	618.36	630.89	11.60	1.78
7995.00	89.69	357.35	7454.12	711.91	122.68	712.25	722.40	9.78	.26
8089.00	90.31	357.53	7454.12	805.81	118.48	806.14	814.48	8.36	.69
8183.00	90.75	357.35	7453.25	899.72	114.28	900.03	906.94	7.24	.51
8277.00	91.01	357.18	7451.81	993.60	109.80	993.90	999.65	6.31	.33
8371.00	91.28	357.53	7449.93	1087.48	105.46	1087.77	1092.58	5.54	.47
8465.00	91.36	357.53	7447.76	1181.37	101.41	1181.64	1185.71	4.91	.09
8559.00	90.92	357.18	7445.89	1275.25	97.07	1275.51	1278.94	4.35	.60
8654.00	90.92	357.00	7444.37	1370.11	92.25	1370.36	1373.21	3.85	.19
8748.00	89.16	357.90	7444.30	1464.01	88.07	1464.25	1466.66	3.44	2.10
8842.00	89.25	358.06	7445.61	1557.95	84.75	1558.18	1560.25	3.11	.20
8936.00	89.52	357.71	7446.62	1651.88	81.29	1652.10	1653.88	2.82	.47
9031.00	89.69	357.53	7447.27	1746.79	77.34	1747.00	1748.50	2.54	.26
9125.00	89.69	357.88	7447.78	1840.72	73.58	1840.91	1842.19	2.29	.37
9219.00	89.52	357.53	7448.43	1934.64	69.81	1934.83	1935.90	2.07	.41
9314.00	89.87	357.88	7448.93	2029.56	66.01	2029.74	2030.63	1.86	.52
9408.00	89.78	357.71	7449.22	2123.49	62.39	2123.66	2124.41	1.68	.20
9502.00	89.78	357.18	7449.58	2217.40	58.20	2217.55	2218.16	1.50	.56
9596.00	90.22	357.53	7449.58	2311.30	53.86	2311.44	2311.92	1.34	.60
9690.00	90.48	358.76	7449.01	2405.24	50.82	2405.37	2405.78	1.21	1.34

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
9785.00	90.57	358.41	7448.14	2500.21	48.48	2500.33	2500.68	1.11	.38
9879.00	91.01	358.23	7446.84	2594.16	45.72	2594.28	2594.56	1.01	.51
9973.00	89.87	359.64	7446.12	2688.14	43.97	2688.25	2688.50	.94	1.93
10067.00	90.04	359.11	7446.19	2782.13	42.95	2782.24	2782.46	.88	.59
10162.00	90.31	358.76	7445.90	2877.11	41.18	2877.22	2877.41	.82	.47
10256.00	90.48	358.41	7445.25	2971.08	38.86	2971.18	2971.34	.75	.41
10351.00	90.75	358.06	7444.23	3066.03	35.93	3066.12	3066.24	.67	.47
10445.00	89.78	359.11	7443.80	3160.00	33.61	3160.08	3160.18	.61	1.52
10482.00	90.04	358.76	7443.86	3196.99	32.93	3197.07	3197.16	.59	1.18
10545.00	90.48	358.41	7443.57	3259.97	31.37	3260.05	3260.12	.55	.89
10640.00	89.78	359.82	7443.36	3354.96	29.90	3355.03	3355.09	.51	1.66
10734.00	89.87	359.64	7443.64	3448.96	29.46	3449.03	3449.08	.49	.21
10829.00	89.69	359.64	7444.01	3543.95	28.86	3544.02	3544.07	.47	.19
10923.00	89.78	359.64	7444.44	3637.95	28.27	3638.02	3638.06	.45	.10
11017.00	89.69	359.29	7444.88	3731.95	27.39	3732.01	3732.05	.42	.38
11111.00	89.43	358.76	7445.60	3825.93	25.80	3825.99	3826.02	.39	.63
11205.00	89.69	358.94	7446.32	3919.91	23.91	3919.96	3919.98	.35	.34
11299.00	90.31	359.11	7446.32	4013.89	22.31	4013.94	4013.96	.32	.68
11394.00	90.40	359.11	7445.73	4108.88	20.83	4108.92	4108.93	.29	.09
11489.00	90.75	359.29	7444.78	4203.87	19.51	4203.90	4203.91	.27	.41
11583.00	90.92	359.46	7443.41	4297.85	18.48	4297.88	4297.89	.25	.26
11677.00	91.10	359.29	7441.75	4391.83	17.46	4391.86	4391.86	.23	.26
11771.00	91.45	359.29	7439.66	4485.80	16.29	4485.83	4485.83	.21	.37
11866.00	91.45	359.11	7437.26	4580.76	14.97	4580.78	4580.78	.19	.19
11960.00	91.28	359.11	7435.02	4674.72	13.51	4674.74	4674.74	.17	.18
12042.00	91.36	359.11	7433.13	4756.69	12.23	4756.71	4756.71	.15	.10
Straight line projection to bit depth at TD.									
12094.00	91.36	359.11	7431.89	4808.67	11.43	4808.68	4808.68	.14	.00