

Directional Survey



Well Name DIGITAL SUN 17-24-34 001H	Lease Prodigal Sun 17-24-34	Field Name Red Hills North	Business Unit Mid-Continent
Original Elevation (ft) 3,564.00	Original RKB (ft) 3,589.00	Current RKB Elevation 3,589.00, 8/8/2014	Mud Line Elevation (ft) Water Depth (ft)

Wellbore Name Original Hole	Parent Wellbore Original Hole	Kick Off Depth (ftKB) 10,303	Vertical Section Direction (°) 179.49
UTM Northing (Y) (ft)	UTM Easting (X) (ft)	UTM Grid Zone	
Date 8/12/2014	Definitive? N	Description MWD	Planned? N
MD Tie In (ftKB)	TVD Tie In (ftKB)	Inclination Tie In (°)	Azimuth Tie In (°)
		NS Tie In (ft)	EW Tie In (ft)

Survey Data													
MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Method	Survey Company	Build (°/100ft)	Depart (ft)	Turn (°/100ft)	Unuse d date
100	0.60	197.00	100.00	-0.50	-0.15	0.50	0.60	Magn MWD		0.60	0.52	197.00	N
292	1.00	223.00	291.98	-2.69	-1.59	2.67	0.28	Magn MWD		0.21	3.12	13.54	N
472	0.60	225.00	471.96	-4.50	-3.33	4.47	0.22	Magn MWD		-0.22	5.60	1.11	N
651	0.20	210.20	650.96	-5.44	-4.15	5.40	0.23	Magn MWD		-0.22	6.84	-8.27	N
829	0.60	241.20	828.95	-6.15	-5.12	6.11	0.25	Magn MWD		0.22	8.00	17.42	N
1,009	0.70	226.00	1,008.94	-7.37	-6.74	7.31	0.11	Magn MWD		0.06	9.99	-8.44	N
1,187	0.80	228.00	1,186.93	-8.96	-8.44	8.88	0.06	Magn MWD		0.06	12.31	1.12	N
1,300	0.50	207.00	1,299.92	-9.92	-9.25	9.84	0.33	Magn MWD		-0.27	13.57	-18.58	N
1,379	0.30	309.00	1,378.92	-10.10	-9.57	10.02	0.80	Magn MWD		-0.25	13.91	129.11	N
1,558	0.90	321.00	1,557.91	-8.71	-10.82	8.62	0.34	Magn MWD		0.34	13.89	6.70	N
1,647	0.70	359.00	1,646.90	-7.63	-11.27	7.53	0.62	Magn MWD		-0.22	13.61	42.70	N
1,737	0.50	296.00	1,736.89	-6.91	-11.63	6.80	0.72	Magn MWD		-0.22	13.53	-70.00	N
1,916	0.50	300.00	1,915.89	-6.17	-13.01	6.06	0.02	Magn MWD		0.00	14.40	2.23	N
2,095	0.60	312.00	2,094.88	-5.16	-14.38	5.03	0.08	Magn MWD		0.06	15.28	6.70	N
2,273	0.60	335.20	2,272.87	-3.69	-15.47	3.55	0.14	Magn MWD		0.00	15.90	13.03	N
2,453	0.80	328.20	2,452.86	-1.76	-16.52	1.61	0.12	Magn MWD		0.11	16.62	-3.89	N
2,632	0.70	313.20	2,631.84	0.05	-17.98	-0.21	0.12	Magn MWD		-0.06	17.98	-8.38	N
2,811	0.60	326.20	2,810.83	1.58	-19.30	-1.75	0.10	Magn MWD		-0.06	19.36	7.26	N
2,990	1.30	10.20	2,989.81	4.35	-19.46	-4.53	0.54	Magn MWD		0.39	19.94	176.54	N
3,169	1.10	8.20	3,168.77	8.05	-18.85	-8.22	0.11	Magn MWD		-0.11	20.50	-1.12	N
3,348	1.50	40.20	3,347.72	11.54	-17.10	-11.69	0.45	Magn MWD		0.22	20.63	17.88	N
3,527	1.80	54.20	3,526.65	14.98	-13.30	-15.09	0.28	Magn MWD		0.17	20.03	7.82	N
3,706	2.30	86.00	3,705.54	16.87	-7.44	-16.94	0.68	Magn MWD		0.28	18.44	17.77	N
3,796	2.50	105.00	3,795.46	16.49	-3.74	-16.52	0.91	Magn MWD		0.22	16.91	21.11	N
3,885	1.50	120.00	3,884.41	15.40	-0.86	-15.41	1.26	Magn MWD		-1.12	15.43	16.85	N
3,975	1.20	141.00	3,974.38	14.08	0.75	-14.08	0.64	Magn MWD		-0.33	14.10	23.33	N

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4,065	1.10	152.00	4,064.36	12.59	1.75	-12.57	0.27	Magn MWD		-0.11	12.71	12.22	N
4,244	1.40	171.20	4,243.32	8.91	2.89	-8.88	0.29	Magn MWD		0.17	9.37	10.73	N
4,423	2.10	172.20	4,422.24	3.50	3.67	-3.47	0.39	Magn MWD		0.39	5.07	0.56	N
4,602	3.40	157.00	4,601.03	-4.64	6.19	4.69	0.83	Magn MWD		0.73	7.74	-8.49	N
4,736	4.10	150.00	4,734.74	-12.44	10.14	12.53	0.62	Magn MWD		0.52	16.05	-5.22	N
4,781	4.50	147.00	4,779.62	-15.32	11.91	15.42	1.02	Magn MWD		0.89	19.40	-6.67	N
4,870	5.00	135.20	4,868.31	-21.00	16.54	21.14	1.23	Magn MWD		0.56	26.73	-13.26	N
4,960	5.40	133.00	4,957.94	-26.67	22.40	26.87	0.50	Magn MWD		0.44	34.83	-2.44	N
5,005	5.70	134.00	5,002.73	-29.66	25.56	29.89	0.70	Magn MWD		0.67	39.16	2.22	N
5,049	5.30	135.00	5,046.53	-32.62	28.57	32.87	0.93	Magn MWD		-0.91	43.36	2.27	N
5,094	4.40	130.20	5,091.37	-35.20	31.35	35.48	2.19	Magn MWD		-2.00	47.14	-10.67	N
5,210	3.30	132.00	5,207.10	-40.31	37.23	40.64	0.95	Magn MWD		-0.95	54.87	1.55	N
5,503	2.16	155.30	5,499.77	-50.97	45.81	51.37	0.54	Magn MWD		-0.39	68.53	7.95	N
5,682	1.10	126.13	5,678.70	-55.05	48.61	55.48	0.73	Magn MWD		-0.59	73.44	-16.30	N
5,862	0.76	22.18	5,858.69	-54.96	50.45	55.41	0.82	Magn MWD		-0.19	74.61	-57.75	N
6,040	0.78	22.61	6,036.67	-52.75	51.36	53.20	0.01	Magn MWD		0.01	73.63	0.24	N
6,219	2.32	319.96	6,215.61	-48.85	49.50	49.29	1.16	Magn MWD		0.86	69.55	166.12	N
6,577	2.27	317.36	6,573.32	-38.09	40.04	38.44	0.03	Magn MWD		0.00	55.26	0.00	N
6,577	2.27	317.36	6,573.32	-38.09	40.04	38.44	0.03	Magn MWD		-0.01	55.26	-0.73	N
6,755	2.41	318.13	6,751.17	-32.71	35.15	33.02	0.08	Magn MWD		0.00	48.01	0.00	N
6,755	2.41	318.13	6,751.17	-32.71	35.15	33.02	0.08	Magn MWD		0.08	48.01	0.43	N
6,935	2.19	317.08	6,931.03	-27.37	30.28	27.64	0.12	Magn MWD		0.00	40.82	0.00	N
6,935	2.19	317.08	6,931.03	-27.37	30.28	27.64	0.12	Magn MWD		-0.12	40.82	-0.58	N
7,114	2.26	315.30	7,109.89	-22.36	25.47	22.58	0.05	Magn MWD		0.00	33.89	0.00	N
7,114	2.26	315.30	7,109.89	-22.36	25.47	22.58	0.05	Magn MWD		0.04	33.89	-0.99	N
7,293	2.27	309.94	7,288.75	-17.57	20.27	17.75	0.12	Magn MWD		0.00	26.83	0.00	N
7,293	2.27	309.94	7,288.75	-17.57	20.27	17.75	0.12	Magn MWD		0.01	26.83	-2.99	N
7,472	2.11	303.70	7,467.62	-13.47	14.81	13.60	0.16	Magn MWD		0.00	20.02	0.00	N
7,472	2.11	303.70	7,467.62	-13.47	14.81	13.60	0.16	Magn MWD		-0.09	20.02	-3.49	N



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Survey Data													
MD (ft)	Incl (°)	Azm (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Method	Survey Company	Build (°/100ft)	Depart (ft)	Turn (°/100ft)	Unuse d data
7,651	2.20	296.35	7,646.50	-10.11	8.99	10.19	0.16	Magn MWD		0.00	13.53	0.00	N
7,651	2.20	296.35	7,646.50	-10.11	8.99	10.19	0.16	Magn MWD		0.05	13.53	-4.11	N
7,830	2.30	285.58	7,825.36	-7.62	2.45	7.65	0.24	Magn MWD		0.00	8.01	0.00	N
7,830	2.30	285.58	7,825.36	-7.62	2.45	7.65	0.24	Magn MWD		0.06	8.01	-6.02	N
8,009	2.14	282.12	8,004.23	-5.96	-4.27	5.92	0.12	Magn MWD		0.00	7.33	0.00	N
8,009	2.14	282.12	8,004.23	-5.96	-4.27	5.92	0.12	Magn MWD		-0.09	7.33	-1.93	N
8,188	2.07	276.02	8,183.11	-4.92	-10.76	4.82	0.13	Magn MWD		0.00	11.83	0.00	N
8,188	2.07	276.02	8,183.11	-4.92	-10.76	4.82	0.13	Magn MWD		-0.04	11.83	-3.41	N
8,368	2.36	306.18	8,362.98	-2.39	-16.98	2.24	0.66	Magn MWD		0.16	17.15	16.76	N
8,547	1.79	341.46	8,541.87	2.44	-20.84	-2.62	0.77	Magn MWD		-0.32	20.99	19.71	N
8,726	1.78	321.32	8,720.78	7.26	-23.47	-7.47	0.35	Magn MWD		-0.01	24.57	-11.25	N
8,905	2.16	314.24	8,899.68	11.78	-27.63	-12.03	0.25	Magn MWD		0.21	30.03	-3.96	N
9,084	2.38	299.31	9,078.54	15.95	-33.28	-16.25	0.35	Magn MWD		0.12	36.91	-8.34	N
9,263	2.75	286.99	9,257.36	19.03	-40.63	-19.39	0.37	Magn MWD		0.21	44.87	-6.88	N
9,442	2.68	280.14	9,436.16	21.02	-48.86	-21.45	0.19	Magn MWD		-0.04	53.19	-3.83	N
9,621	0.97	311.14	9,615.06	22.75	-54.12	-23.24	1.07	Magn MWD		-0.96	58.71	17.32	N
9,800	0.98	21.78	9,794.04	25.17	-54.69	-25.66	0.63	Magn MWD		0.01	60.21	-	N
10,158	1.60	276.49	10,151.99	28.58	-58.52	-29.10	0.58	Magn MWD		0.17	65.13	71.15	N
10,243	1.63	272.18	10,236.95	28.76	-60.91	-29.30	0.15	Magn MWD		0.04	67.36	-5.07	N
10,334	4.05	207.00	10,327.85	25.95	-63.66	-26.51	4.04	Magn MWD		2.66	68.75	-71.63	N
10,379	9.41	189.69	10,372.53	20.90	-65.00	-21.48	12.60	Magn MWD		11.91	68.28	-38.47	N
10,424	13.58	186.20	10,416.62	12.02	-66.19	-12.61	9.39	Magn MWD		9.27	67.28	-7.76	N
10,468	18.77	178.65	10,458.87	-0.20	-66.59	-0.39	12.70	Magn MWD		11.80	66.59	-17.16	N
10,513	23.51	178.00	10,500.83	-16.42	-66.10	15.83	10.55	Magn MWD		10.53	68.11	-1.44	N
10,557	28.34	181.17	10,540.39	-35.65	-66.01	35.06	11.42	Magn MWD		10.98	75.02	7.20	N
10,602	32.91	180.36	10,579.10	-58.56	-66.30	57.97	10.20	Magn MWD		10.16	88.46	-1.80	N
10,647	38.47	175.00	10,615.64	-84.76	-65.16	84.17	14.17	Magn MWD		12.36	106.91	-11.91	N
10,691	43.34	171.90	10,648.89	-113.36	-61.84	112.81	11.99	Magn MWD		11.07	129.13	-7.05	N
10,736	48.19	172.19	10,680.28	-145.28	-57.38	144.77	10.79	Magn MWD		10.78	156.20	0.64	N



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Survey Data													
MD (ft)	Incl. (°)	Azm (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Method	Survey Company	Build (°/100ft)	Depart (ft)	Turn (°/100ft)	Unused data
10,781	48.78	173.79	10,710.10	-178.72	-53.27	178.24	2.97	Magn MWD		1.31	186.49	3.56	N
10,826	53.80	174.21	10,738.24	-213.63	-49.60	213.18	11.18	Magn MWD		11.16	219.32	0.93	N
10,870	59.89	174.54	10,762.29	-250.28	-46.00	249.86	13.86	Magn MWD		13.84	254.47	0.75	N
10,915	67.50	174.67	10,782.22	-290.41	-42.21	290.02	16.91	Magn MWD		16.91	293.46	0.29	N
10,959	72.67	174.91	10,797.20	-331.59	-38.46	331.24	11.76	Magn MWD		11.75	333.82	0.55	N
11,003	77.30	176.66	10,808.60	-373.96	-35.34	373.63	11.20	Magn MWD		10.52	375.63	3.98	N
11,048	82.49	177.45	10,816.49	-418.19	-33.07	417.88	11.66	Magn MWD		11.53	419.50	1.76	N
11,137	88.57	178.25	10,823.42	-506.82	-29.74	506.53	6.89	Magn MWD		6.83	507.69	0.90	N
11,227	89.38	178.31	10,825.03	-596.76	-27.04	596.50	0.90	Magn MWD		0.90	597.37	0.07	N
11,316	89.41	181.81	10,825.97	-685.74	-27.14	685.47	3.93	Magn MWD		0.03	686.28	3.93	N
11,406	90.25	179.35	10,826.24	-775.73	-28.05	775.45	2.89	Magn MWD		0.93	776.24	-2.73	N
11,495	90.78	179.27	10,825.44	-864.72	-26.97	864.44	0.60	Magn MWD		0.60	865.14	-0.09	N
11,585	91.93	178.97	10,823.31	-954.68	-25.59	954.42	1.32	Magn MWD		1.28	955.02	-0.33	N
11,674	92.04	180.25	10,820.23	-1,043.62	-24.99	1,043.36	1.44	Magn MWD		0.12	1,043.92	1.44	N
11,764	91.73	181.39	10,817.27	-1,133.56	-26.27	1,133.29	1.31	Magn MWD		-0.34	1,133.87	1.27	N
11,853	89.78	181.96	10,816.09	-1,222.51	-28.88	1,222.21	2.28	Magn MWD		-2.19	1,222.85	0.64	N
11,943	90.53	182.23	10,815.85	-1,312.45	-32.17	1,312.11	0.89	Magn MWD		0.83	1,312.85	0.30	N
12,032	89.92	182.15	10,815.50	-1,401.39	-35.57	1,401.01	0.69	Magn MWD		-0.69	1,401.84	-0.09	N
12,122	90.08	182.46	10,815.50	-1,491.31	-39.19	1,490.91	0.39	Magn MWD		0.18	1,491.83	0.34	N
12,300	88.77	179.74	10,817.29	-1,669.25	-42.60	1,668.81	1.70	Magn MWD		-0.74	1,669.79	-1.53	N
12,390	88.80	179.78	10,819.20	-1,759.23	-42.23	1,758.78	0.06	Magn MWD		0.03	1,759.74	0.04	N
12,479	87.73	178.68	10,821.89	-1,848.18	-41.03	1,847.74	1.72	Magn MWD		-1.20	1,848.63	-1.24	N
12,658	89.30	176.34	10,826.53	-2,026.93	-33.26	2,026.55	1.57	Magn MWD		0.88	2,027.20	-1.31	N
12,748	90.22	176.56	10,826.91	-2,116.76	-27.68	2,116.43	1.05	Magn MWD		1.02	2,116.94	0.24	N
12,837	91.06	176.69	10,825.91	-2,205.60	-22.45	2,205.31	0.96	Magn MWD		0.94	2,205.71	0.15	N
12,926	91.76	177.21	10,823.72	-2,294.44	-17.71	2,294.19	0.98	Magn MWD		0.79	2,294.51	0.58	N
13,016	92.21	177.36	10,820.61	-2,384.29	-13.45	2,384.07	0.53	Magn MWD		0.50	2,384.32	0.17	N
13,105	90.90	178.34	10,818.19	-2,473.19	-10.11	2,473.00	1.84	Magn MWD		-1.47	2,473.21	1.10	N
13,195	89.38	179.14	10,817.97	-2,563.16	-8.13	2,562.99	1.91	Magn MWD		-1.69	2,563.18	0.89	N



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13,284	89.47	179.36	10,818.86	-2,652.15	-6.97	2,651.98	0.27	Magn MWD		0.10	2,652. 16	0.25	N
13,373	88.07	180.06	10,820.77	-2,741.13	-6.52	2,740.96	1.76	Magn MWD		-1.57	2,741. 13	0.79	N
13,463	87.85	180.15	10,823.98	-2,831.07	-6.68	2,830.90	0.26	Magn MWD		-0.24	2,831. 08	0.10	N
13,552	88.32	180.35	10,826.95	-2,920.02	-7.07	2,919.84	0.57	Magn MWD		0.53	2,920. 03	0.22	N
13,642	89.10	180.90	10,828.98	-3,009.99	-8.05	3,009.80	1.06	Magn MWD		0.87	3,010. 00	0.61	N
13,731	88.88	179.18	10,830.55	-3,098.97	-8.12	3,098.78	1.95	Magn MWD		-0.25	3,098. 98	-1.93	N
13,820	89.36	179.25	10,831.91	-3,187.95	-6.90	3,187.77	0.55	Magn MWD		0.54	3,187. 96	0.08	N
13,910	88.99	178.25	10,833.21	-3,277.92	-4.93	3,277.75	1.18	Magn MWD		-0.41	3,277. 92	-1.11	N
13,999	87.12	178.37	10,836.23	-3,366.83	-2.31	3,366.67	2.11	Magn MWD		-2.10	3,366. 83	0.13	N
14,089	87.23	179.23	10,840.67	-3,456.70	-0.43	3,456.56	0.96	Magn MWD		0.12	3,456. 70	0.96	N
14,178	87.82	179.43	10,844.51	-3,545.61	0.61	3,545.47	0.70	Magn MWD		0.66	3,545. 61	0.22	N
14,267	88.07	179.47	10,847.70	-3,634.55	1.47	3,634.41	0.28	Magn MWD		0.28	3,634. 55	0.04	N
14,357	88.35	179.46	10,850.51	-3,724.50	2.31	3,724.37	0.31	Magn MWD		0.31	3,724. 50	-0.01	N
14,446	88.52	179.97	10,852.94	-3,813.46	2.75	3,813.34	0.60	Magn MWD		0.19	3,813. 46	0.57	N
14,536	89.61	180.17	10,854.41	-3,903.45	2.64	3,903.32	1.23	Magn MWD		1.21	3,903. 45	0.22	N
14,625	89.13	178.92	10,855.39	-3,992.44	3.34	3,992.31	1.50	Magn MWD		-0.54	3,992. 44	-1.40	N
14,715	88.35	177.82	10,857.37	-4,082.38	5.90	4,082.27	1.50	Magn MWD		-0.87	4,082. 38	-1.22	N
14,804	88.46	177.94	10,859.85	-4,171.28	9.20	4,171.20	0.18	Magn MWD		0.12	4,171. 29	0.13	N
14,893	88.69	177.67	10,862.06	-4,260.19	12.60	4,260.13	0.40	Magn MWD		0.26	4,260. 21	-0.30	N
14,983	89.16	177.84	10,863.75	-4,350.11	16.13	4,350.08	0.56	Magn MWD		0.52	4,350. 14	0.19	N
15,072	89.44	177.49	10,864.84	-4,439.03	19.75	4,439.03	0.50	Magn MWD		0.31	4,439. 07	-0.39	N
15,161	90.17	177.39	10,865.14	-4,527.94	23.73	4,527.97	0.83	Magn MWD		0.82	4,528. 00	-0.11	N