



Directional Survey

Well Name SALADO DRAW WE 14 FED P7 003H		Lease	Field Name JENNINGS	Business Unit Mid-Continent	
Ground Elevation (ft) 3,165.00	Original RKB (ft) 3,197.60	Current RKB Elevation 3,197.60, 3/28/2016		Mud Line Elevation (ft)	Water Depth (ft)

Wellbore Name Original Hole		Parent Wellbore Original Hole	Min Kick Off Depth (ftKB) 8,556.0	Vertical Section Direction (°) 356.27	
Northing (Y) (ft)		Easting (X) (ft)		UTM Grid Zone	

Date 4/16/2016	Definitive? Y	Description MWD		Planned? N	
MD Tie In (ftKB)	TVD Tie In (ftKB)	Inclination Tie In (°)	Azimuth Tie In (°)	NSTie 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 data
136	0.60	319.17	136.00	0.54	-0.47	0.57	0.44	Magn MWD		0.44	0.71	234.68	N
316	0.70	8.70	315.99	2.34	-0.92	2.39	0.31	Magn MWD		0.06	2.51	- 172.48	N
436	0.40	326.70	435.98	3.41	-1.03	3.47	0.40	Magn MWD		-0.25	3.57	265.00	N
532	0.30	321.70	531.98	3.89	-1.37	3.97	0.11	Magn MWD		-0.10	4.13	-5.21	N
625	0.40	271.70	624.98	4.09	-1.85	4.20	0.33	Magn MWD		0.11	4.49	-53.76	N
717	0.80	292.70	716.97	4.35	-2.76	4.52	0.49	Magn MWD		0.43	5.15	22.83	N
810	1.00	302.70	809.96	5.04	-4.05	5.29	0.27	Magn MWD		0.22	6.46	10.75	N
813	0.90	299.70	812.96	5.06	-4.09	5.32	3.72	Magn MWD		-3.33	6.51	- 100.00	N
838	0.90	299.70	837.96	5.26	-4.43	5.54	0.00	Extrap.		0.00	6.87	0.00	N
948	1.10	315.40	947.94	6.44	-5.92	6.81	0.31	Magn MWD		0.18	8.75	14.27	N
1,126	1.90	273.70	1,125.88	7.85	-10.06	8.48	0.73	Magn MWD		0.45	12.76	-23.43	N
1,303	4.80	264.00	1,302.56	7.26	-20.36	8.57	1.66	Magn MWD		1.64	21.62	-5.48	N
1,480	6.50	265.40	1,478.70	5.68	-37.71	8.12	0.96	Magn MWD		0.96	38.14	0.79	N
1,658	6.60	266.00	1,655.54	4.16	-57.96	7.92	0.07	Magn MWD		0.06	58.11	0.34	N
1,836	6.00	264.40	1,832.46	2.54	-77.42	7.57	0.35	Magn MWD		-0.34	77.46	-0.90	N
2,013	6.20	265.40	2,008.46	0.87	-96.16	7.12	0.13	Magn MWD		0.11	96.16	0.56	N
2,190	6.70	263.40	2,184.34	-1.08	-115.94	6.46	0.31	Magn MWD		0.28	115.95	-1.13	N
2,368	4.80	261.60	2,361.43	-3.36	-133.63	5.34	1.07	Magn MWD		-1.07	133.67	-1.01	N
2,546	4.90	260.60	2,538.80	-5.69	-148.49	3.98	0.07	Magn MWD		0.06	148.60	-0.56	N
2,723	5.20	263.00	2,715.11	-7.91	-163.91	2.77	0.21	Magn MWD		0.17	164.10	1.36	N
2,900	5.20	265.40	2,891.38	-9.53	-179.87	2.19	0.12	Magn MWD		0.00	180.12	1.36	N
3,078	5.30	264.50	3,068.63	-10.96	-196.09	1.82	0.07	Magn MWD		0.06	196.40	-0.51	N
3,254	4.50	272.70	3,243.99	-11.42	-211.08	2.34	0.60	Magn MWD		-0.45	211.39	4.66	N
3,431	4.30	280.90	3,420.47	-9.83	-224.53	4.79	0.37	Magn MWD		-0.11	224.75	4.63	N
3,609	3.80	283.50	3,598.03	-7.20	-236.82	8.23	0.30	Magn MWD		-0.28	236.93	1.46	N
3,786	3.90	280.10	3,774.63	-4.77	-248.45	11.40	0.14	Magn MWD		0.06	248.50	-1.92	N
3,964	2.90	277.60	3,952.31	-3.11	-258.87	13.73	0.57	Magn MWD		-0.56	258.89	-1.40	N



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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 data
4,141	2.20	274.70	4,129.14	-2.24	-266.70	15.11	0.40	Magn MWD		-0.40	266.71	-1.64	N
4,319	1.50	242.20	4,307.05	-3.05	-272.16	14.66	0.69	Magn MWD		-0.39	272.18	-18.26	N
4,496	1.40	208.50	4,483.99	-6.03	-275.24	11.89	0.48	Magn MWD		-0.06	275.31	-19.04	N
4,522	1.40	207.50	4,509.99	-6.59	-275.54	11.35	0.09	Magn MWD		0.00	275.62	-3.85	N
4,580	1.40	207.50	4,567.97	-7.85	-276.20	10.14	0.00	Magn MWD		0.00	276.31	0.00	N
4,685	1.70	202.30	4,672.93	-10.43	-277.38	7.64	0.32	Magn MWD		0.29	277.58	-4.95	N
4,862	1.20	310.10	4,849.90	-11.66	-279.79	6.56	1.33	Magn MWD		-0.28	280.04	60.90	N
5,040	1.60	313.70	5,027.84	-8.74	-283.02	9.69	0.23	Magn MWD		0.22	283.15	2.02	N
5,217	1.90	316.60	5,204.76	-4.91	-286.82	13.76	0.18	Magn MWD		0.17	286.86	1.64	N
5,395	0.90	308.00	5,382.71	-1.90	-289.95	16.97	0.57	Magn MWD		-0.56	289.95	-4.83	N
5,573	0.80	305.80	5,560.69	-0.31	-292.06	18.69	0.06	Magn MWD		-0.06	292.06	-1.24	N
5,751	1.10	297.20	5,738.66	1.19	-294.58	20.36	0.19	Magn MWD		0.17	294.59	-4.83	N
5,929	1.10	295.10	5,916.63	2.70	-297.65	22.06	0.02	Magn MWD		0.00	297.66	-1.18	N
6,106	1.50	297.60	6,093.58	4.49	-301.24	24.08	0.23	Magn MWD		0.23	301.28	1.41	N
6,283	1.10	320.30	6,270.54	6.88	-304.38	26.66	0.36	Magn MWD		-0.23	304.46	12.82	N
6,461	0.80	319.30	6,448.51	9.13	-306.28	29.04	0.17	Magn MWD		-0.17	306.42	-0.56	N
6,638	0.60	294.90	6,625.50	10.46	-307.93	30.47	0.20	Magn MWD		-0.11	308.11	-13.79	N
6,816	1.00	261.80	6,803.48	10.63	-310.31	30.79	0.33	Magn MWD		0.22	310.49	-18.60	N
7,170	0.40	146.00	7,157.47	9.16	-312.68	29.49	0.35	Magn MWD		-0.17	312.81	-32.71	N
7,347	0.10	97.80	7,334.46	8.63	-312.18	28.92	0.19	Magn MWD		-0.17	312.30	-27.23	N
7,525	0.20	333.50	7,512.46	8.89	-312.17	29.18	0.15	Magn MWD		0.06	312.29	132.42	N
7,702	0.90	114.50	7,689.46	8.59	-311.04	28.80	0.60	Magn MWD		0.40	311.16	-	N
7,879	0.80	133.80	7,866.44	7.16	-308.88	27.24	0.17	Magn MWD		-0.06	308.96	10.90	N
8,056	1.00	156.50	8,043.42	4.88	-307.37	24.87	0.23	Magn MWD		0.11	307.41	12.82	N
8,234	0.70	111.00	8,221.40	3.07	-305.74	22.95	0.40	Magn MWD		-0.17	305.75	-25.56	N
8,411	0.60	137.30	8,398.39	2.00	-304.10	21.78	0.18	Magn MWD		-0.06	304.11	14.86	N
8,499	0.50	160.10	8,486.38	1.30	-303.66	21.05	0.27	Magn MWD		-0.11	303.66	25.91	N
8,556	0.50	160.10	8,543.38	0.83	-303.49	20.58	0.00	Magn MWD		0.00	303.49	0.00	N
8,559	0.28	182.51	8,546.38	0.82	-303.48	20.56	8.79	Magn MWD		-7.33	303.49	747.00	N
8,647	11.04	359.83	8,633.85	9.05	-303.52	28.78	12.86	Magn MWD		12.23	303.65	201.50	N



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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)	Unused data
8,736	23.18	359.44	8,718.75	35.19	-303.72	54.87	13.64	Magn MWD		13.64	305.75	-0.44	N
8,825	33.67	349.63	8,796.96	77.11	-308.34	97.01	12.87	Magn MWD		11.79	317.84	-11.02	N
8,913	40.35	348.69	8,867.19	129.10	-318.33	149.54	7.62	Magn MWD		7.59	343.52	-1.07	N
9,002	45.43	358.12	8,932.44	189.14	-325.04	209.88	9.19	Magn MWD		5.71	376.06	10.60	N
9,090	53.75	1.78	8,989.45	256.06	-324.96	276.66	9.97	Magn MWD		9.45	413.73	-	N
9,179	66.20	0.83	9,033.90	332.95	-323.25	353.27	14.02	Magn MWD		13.99	464.05	-1.07	N
9,267	80.60	359.75	9,058.97	417.06	-322.85	437.18	16.41	Magn MWD		16.36	527.42	407.86	N
9,356	91.88	3.58	9,064.80	505.67	-320.26	525.43	13.38	Magn MWD		12.67	598.55	-	N
9,533	92.00	6.58	9,058.81	681.85	-304.60	700.22	1.70	Magn MWD		0.07	746.79	1.69	N
9,621	91.88	5.60	9,055.83	769.30	-295.27	786.88	1.12	Magn MWD		-0.14	824.02	-1.11	N
9,710	92.00	3.07	9,052.81	857.99	-288.54	874.94	2.84	Magn MWD		0.13	905.21	-2.84	N
9,799	92.00	3.44	9,049.71	946.79	-283.49	963.23	0.42	Magn MWD		0.00	988.32	0.42	N
9,888	92.09	2.52	9,046.53	1,035.62	-278.87	1,051.56	1.04	Magn MWD		0.10	1,072.51	-1.03	N
9,977	92.03	359.20	9,043.33	1,124.54	-277.53	1,140.21	3.73	Magn MWD		-0.07	1,158.28	400.76	N
10,065	91.91	356.86	9,040.31	1,212.43	-280.56	1,228.11	2.66	Magn MWD		-0.14	1,244.46	-2.66	N
10,154	91.54	356.42	9,037.63	1,301.23	-285.77	1,317.07	0.65	Magn MWD		-0.42	1,332.24	-0.49	N
10,243	89.85	357.10	9,036.55	1,390.08	-290.80	1,406.05	2.05	Magn MWD		-1.90	1,420.17	0.76	N
10,332	89.85	358.22	9,036.78	1,479.00	-294.44	1,495.02	1.26	Magn MWD		0.00	1,508.03	1.26	N
10,420	89.88	0.33	9,036.99	1,566.99	-295.55	1,582.90	2.40	Magn MWD		0.03	1,594.62	-	N
10,509	89.85	359.35	9,037.20	1,655.99	-295.80	1,671.72	1.10	Magn MWD		-0.03	1,682.20	403.39	N
10,598	89.88	359.79	9,037.41	1,744.99	-296.46	1,760.58	0.50	Magn MWD		0.03	1,769.99	0.49	N
10,687	89.78	1.84	9,037.67	1,833.97	-295.20	1,849.29	2.31	Magn MWD		-0.11	1,857.58	-	N
10,776	89.82	3.04	9,037.98	1,922.89	-291.41	1,937.77	1.35	Magn MWD		0.04	1,944.85	1.35	N
10,864	90.12	0.92	9,038.03	2,010.83	-288.37	2,025.33	2.43	Magn MWD		0.34	2,031.40	-2.41	N
10,953	90.12	359.31	9,037.84	2,099.83	-288.19	2,114.13	1.81	Magn MWD		0.00	2,119.51	402.69	N
11,041	90.00	0.22	9,037.75	2,187.83	-288.55	2,201.96	1.04	Magn MWD		-0.14	2,206.77	-	N
11,130	90.25	0.20	9,037.56	2,276.83	-288.23	2,290.75	0.28	Magn MWD		0.28	2,295.00	-0.02	N
11,219	90.06	0.42	9,037.31	2,365.82	-287.74	2,379.53	0.33	Magn MWD		-0.21	2,383.26	0.25	N
11,308	90.12	359.86	9,037.17	2,454.82	-287.53	2,468.33	0.63	Magn MWD		0.07	2,471.60	403.87	N
11,397	90.15	358.54	9,036.97	2,543.81	-288.77	2,557.21	1.48	Magn MWD		0.03	2,560.15	-1.48	N



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Survey Data

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11,575	90.03	356.36	9,036.69	2,721.62	-296.69	2,735.16	1.23	Magn MWD		-0.07	2,737. 75	-1.22	N
11,663	90.12	357.87	9,036.57	2,809.51	-301.12	2,823.15	1.72	Magn MWD		0.10	2,825. 60	1.72	N
11,753	90.15	359.04	9,036.36	2,899.48	-303.54	2,913.08	1.30	Magn MWD		0.03	2,915. 32	1.30	N
11,841	89.75	0.94	9,036.43	2,987.47	-303.56	3,000.89	2.21	Magn MWD		-0.45	3,002. 85	- 406.93	N
11,930	89.78	358.92	9,036.80	3,076.47	-303.67	3,089.70	2.27	Magn MWD		0.03	3,091. 42	402.22	N
12,019	89.69	358.99	9,037.21	3,165.45	-305.29	3,178.61	0.13	Magn MWD		-0.10	3,180. 14	0.08	N
12,107	89.78	357.90	9,037.62	3,253.42	-307.68	3,266.54	1.24	Magn MWD		0.10	3,267. 93	-1.24	N
12,196	89.66	358.52	9,038.05	3,342.37	-310.46	3,355.49	0.71	Magn MWD		-0.13	3,356. 76	0.70	N
12,285	89.82	1.62	9,038.46	3,431.36	-310.35	3,444.28	3.49	Magn MWD		0.18	3,445. 37	- 401.01	N
12,373	89.54	3.53	9,038.95	3,519.26	-306.40	3,531.74	2.19	Magn MWD		-0.32	3,532. 58	2.17	N
12,462	89.82	2.32	9,039.45	3,608.15	-301.86	3,620.14	1.40	Magn MWD		0.31	3,620. 75	-1.36	N
12,550	89.94	359.91	9,039.63	3,696.12	-300.14	3,707.82	2.74	Magn MWD		0.14	3,708. 29	406.35	N
12,639	89.88	359.44	9,039.77	3,785.12	-300.65	3,796.66	0.53	Magn MWD		-0.07	3,797. 04	-0.53	N
12,727	89.85	2.55	9,039.98	3,873.10	-299.12	3,884.35	3.53	Magn MWD		-0.03	3,884. 63	- 405.56	N
12,817	90.03	0.82	9,040.07	3,963.05	-296.47	3,973.95	1.93	Magn MWD		0.20	3,974. 13	-1.92	N
12,905	90.31	3.02	9,039.81	4,051.00	-293.53	4,061.51	2.52	Magn MWD		0.32	4,061. 62	2.50	N
12,994	90.25	1.53	9,039.38	4,139.92	-289.99	4,150.02	1.68	Magn MWD		-0.07	4,150. 07	-1.67	N
13,083	90.31	359.17	9,038.94	4,228.92	-289.45	4,238.79	2.65	Magn MWD		0.07	4,238. 81	401.84	N
13,172	90.22	358.66	9,038.53	4,317.90	-291.13	4,327.69	0.58	Magn MWD		-0.10	4,327. 70	-0.57	N
13,261	90.31	358.21	9,038.12	4,406.86	-293.57	4,416.63	0.52	Magn MWD		0.10	4,416. 63	-0.51	N
13,349	90.28	358.91	9,037.66	4,494.83	-295.78	4,504.56	0.80	Magn MWD		-0.03	4,504. 56	0.80	N
13,438	90.25	356.24	9,037.25	4,583.75	-299.54	4,593.52	3.00	Magn MWD		-0.03	4,593. 52	-3.00	N
13,526	90.25	354.85	9,036.87	4,671.48	-306.38	4,681.51	1.58	Magn MWD		0.00	4,681. 51	-1.58	N
13,615	90.30	356.90	9,036.44	4,760.24	-312.78	4,770.51	2.30	Magn MWD		0.06	4,770. 51	2.30	N
13,704	90.30	357.80	9,035.98	4,849.14	-316.89	4,859.49	1.01	Magn MWD		0.00	4,859. 49	1.01	N
13,778	90.20	358.90	9,035.65	4,923.11	-319.02	4,933.44	1.49	Magn MWD		-0.14	4,933. 44	1.49	N
13,803	90.20	358.90	9,035.57	4,948.11	-319.50	4,958.41	0.00	Extrap.		0.00	4,958. 41	0.00	N