



Directional Survey

HOBBS OGD

MAR 1 8 2015

Well Name MOOSES TOOTH 29-26-33 FED COM 001H	Lease Mooses Tooth 29-26-33 Fed Com	Field Name Bone Spring	Business Unit Mid-Continent	RECEIVED
Ground Elevation (m)	Original RKB (m)	Current RKB Elevation	Mud Line Elevation (m)	Water Depth (m)

Wellbore Name Original Hole	Parent Wellbore Original Hole	Kick Off Depth (mOTH) 2,964	Vertical Section Direction (*) 179.52
UTM Northing (Y) (m)	UTM Easting (X) (m)	UTM Grid Zone	
Date	Definitive? Y	Description MWD	Planned? N
MD Tie In (mOTH)	TVDTie In (mOTH)	Inclination Tie In (*)	Azimuth Tie In (*)
		NSTie In (m)	EWtie In (m)

Survey Data

MD (mOTH)	Incl (*)	Azm (*)	TVD (mOTH)	NS (m)	EW (m)	VS (m)	DLS (°/30m)	Method	Survey Company	Build (°/30m)	Depart (m)	Turn (°/30m)	Unuse d data
35.05	0.80	306.00	35.05	0.14	-0.20	-0.15	0.68	Magn MWD		0.68	0.24	261.90	N
86.56	3.20	293.00	86.53	0.92	-1.81	-0.93	1.41	Magn MWD		1.40	2.03	-7.57	N
114.91	3.20	290.00	114.83	1.50	-3.28	-1.52	0.18	Magn MWD		0.00	3.61	-3.18	N
139.90	3.20	308.00	139.78	2.16	-4.49	-2.20	1.20	Magn MWD		0.00	4.98	21.61	N
167.94	2.30	299.00	167.79	2.92	-5.60	-2.97	1.07	Magn MWD		-0.96	6.31	-9.63	N
195.99	2.50	303.00	195.81	3.53	-6.60	-3.58	0.28	Magn MWD		0.21	7.49	4.28	N
224.33	3.70	305.00	224.12	4.39	-7.87	-4.45	1.27	Magn MWD		1.27	9.01	2.12	N
251.46	3.70	295.00	251.19	5.26	-9.38	-5.34	0.71	Magn MWD		0.00	10.75	-11.06	N
254.51	3.40	297.00	254.23	5.34	-9.55	-5.42	3.19	Magn MWD		-2.95	10.94	19.69	N
313.03	1.90	278.10	312.69	6.27	-12.06	-6.37	0.88	Magn MWD	Phoenix Directional	-0.77	13.59	-9.69	N
367.59	1.10	227.50	367.23	6.04	-13.34	-6.15	0.81	Magn MWD	Phoenix Directional	-0.44	14.64	-27.82	N
422.15	1.10	197.70	421.78	5.19	-13.89	-5.30	0.31	Magn MWD	Phoenix Directional	0.00	14.82	-16.39	N
477.01	1.10	201.60	476.63	4.20	-14.24	-4.31	0.04	Magn MWD	Phoenix Directional	0.00	14.84	2.13	N
531.27	1.40	143.70	530.88	3.18	-14.04	-3.29	0.68	Magn MWD	Phoenix Directional	0.17	14.39	-32.02	N
585.83	1.20	135.50	585.42	2.23	-13.24	-2.34	0.15	Magn MWD	Phoenix Directional	-0.11	13.43	-4.51	N
640.38	0.70	140.10	639.97	1.57	-12.63	-1.68	0.28	Magn MWD	Phoenix Directional	-0.27	12.73	2.53	N
694.94	0.50	149.30	694.53	1.11	-12.29	-1.21	0.12	Magn MWD	Phoenix Directional	-0.11	12.34	5.06	N
749.50	0.50	129.50	749.09	0.75	-11.99	-0.85	0.09	Magn MWD	Phoenix Directional	0.00	12.01	-10.89	N
814.73	0.20	79.80	814.31	0.59	-11.66	-0.69	0.18	Magn MWD	Phoenix Directional	-0.14	11.67	-22.86	N
858.32	0.00	260.30	857.90	0.61	-11.58	-0.70	0.14	Magn MWD	Phoenix Directional	-0.14	11.60	124.24	N
912.88	0.20	220.70	912.46	0.53	-11.64	-0.63	0.11	Magn MWD	Phoenix Directional	0.11	11.66	-21.77	N
967.44	0.50	214.20	967.02	0.26	-11.84	-0.36	0.17	Magn MWD	Phoenix Directional	0.16	11.84	-3.57	N
1,021.99	0.50	241.50	1,021.57	-0.05	-12.18	-0.06	0.13	Magn MWD	Phoenix Directional	0.00	12.18	15.01	N
1,076.55	1.40	104.50	1,076.13	-0.33	-11.75	0.23	0.99	Magn MWD	Phoenix Directional	0.49	11.75	-75.33	N
1,131.11	1.40	69.10	1,130.67	-0.26	-10.48	0.17	0.47	Magn MWD	Phoenix Directional	0.00	10.48	-19.47	N
1,185.67	1.10	30.80	1,185.22	0.43	-9.59	-0.51	0.48	Magn MWD	Phoenix Directional	-0.16	9.60	-21.06	N

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Survey Data

MD (mOTH)	Incl (°)	Azm (°)	TVD (mOTH)	NS (m)	EW (m)	VS (m)	DLS (°/30m)	Method	Survey Company	Build (°/30m)	Depart (m)	Turn (°/30m)	Unuse d data
1,239.93	0.90	21.60	1,239.46	1.28	-9.16	-1.35	0.14	Magn MWD	Phoenix Directional	-0.11	9.25	-5.09	N
1,294.79	1.80	82.00	1,294.31	1.80	-8.15	-1.86	0.86	Magn MWD	Phoenix Directional	0.49	8.35	33.03	N
1,349.35	3.00	98.90	1,348.83	1.69	-5.89	-1.74	0.76	Magn MWD	Phoenix Directional	0.66	6.13	9.29	N
1,403.91	2.50	119.60	1,403.32	0.89	-3.45	-0.91	0.61	Magn MWD	Phoenix Directional	-0.27	3.56	11.38	N
1,454.81	0.70	126.90	1,454.20	0.15	-2.23	-0.17	1.07	Magn MWD	Phoenix Directional	-1.06	2.24	4.30	N
1,503.27	0.39	144.27	1,502.66	-0.16	-1.90	0.15	0.22	Magn MWD	Phoenix Directional	-0.19	1.91	10.75	N
1,560.88	0.30	120.80	1,560.27	-0.40	-1.66	0.38	0.09	Magn MWD	Phoenix Directional	-0.05	1.70	-12.22	N
1,618.49	0.20	92.90	1,617.88	-0.48	-1.43	0.47	0.08	Magn MWD	Phoenix Directional	-0.05	1.51	-14.53	N
1,676.40	0.30	130.40	1,675.79	-0.58	-1.21	0.57	0.10	Magn MWD	Phoenix Directional	0.05	1.34	19.43	N
1,734.01	0.25	96.06	1,733.39	-0.69	-0.97	0.69	0.09	Magn MWD	Phoenix Directional	-0.03	1.19	-17.88	N
1,791.92	0.12	92.02	1,791.31	-0.71	-0.78	0.70	0.07	Magn MWD	Phoenix Directional	-0.07	1.06	-2.09	N
1,846.48	0.15	187.36	1,845.87	-0.78	-0.74	0.78	0.11	Magn MWD	Phoenix Directional	0.02	1.07	52.42	N
1,901.04	1.25	76.95	1,900.42	-0.72	-0.17	0.72	0.72	Magn MWD	Phoenix Directional	0.60	0.74	-60.71	N
1,955.60	1.30	78.04	1,954.97	-0.46	1.02	0.46	0.03	Magn MWD	Phoenix Directional	0.03	1.12	0.60	N
2,010.16	1.08	78.49	2,009.51	-0.23	2.13	0.24	0.12	Magn MWD	Phoenix Directional	-0.12	2.14	0.25	N
2,065.02	1.31	87.15	2,064.37	-0.09	3.26	0.12	0.16	Magn MWD	Phoenix Directional	0.13	3.26	4.74	N
2,119.58	1.18	91.15	2,118.91	-0.07	4.45	0.11	0.09	Magn MWD	Phoenix Directional	-0.07	4.45	2.20	N
2,174.14	0.98	103.02	2,173.46	-0.19	5.46	0.23	0.16	Magn MWD	Phoenix Directional	-0.11	5.47	6.53	N
2,228.39	1.08	108.08	2,227.71	-0.45	6.40	0.50	0.07	Magn MWD	Phoenix Directional	0.06	6.42	2.80	N
2,282.95	1.34	123.24	2,282.25	-0.96	7.42	1.02	0.23	Magn MWD	Phoenix Directional	0.14	7.48	8.34	N
2,337.51	1.45	126.59	2,336.80	-1.72	8.51	1.79	0.08	Magn MWD	Phoenix Directional	0.06	8.68	1.84	N
2,391.77	1.31	98.64	2,391.04	-2.22	9.67	2.30	0.38	Magn MWD	Phoenix Directional	-0.08	9.93	-15.45	N
2,446.32	0.40	169.70	2,445.59	-2.50	10.33	2.59	0.68	Magn MWD	Phoenix Directional	-0.50	10.62	39.07	N
2,501.19	0.52	317.70	2,500.45	-2.51	10.19	2.59	0.48	Magn MWD	Phoenix Directional	0.07	10.50	80.93	N
2,555.44	0.23	284.77	2,554.71	-2.30	9.92	2.38	0.19	Magn MWD	Phoenix Directional	-0.16	10.18	-18.21	N
2,610.00	0.71	314.21	2,609.26	-2.04	9.57	2.12	0.29	Magn MWD	Phoenix Directional	0.26	9.79	16.19	N
2,664.56	0.87	244.34	2,663.82	-1.98	8.96	2.05	0.50	Magn MWD	Phoenix Directional	0.09	9.17	-38.42	N
2,719.12	0.36	256.70	2,718.37	-2.20	8.42	2.27	0.29	Magn MWD	Phoenix Directional	-0.28	8.70	6.80	N
2,773.68	0.65	283.06	2,772.93	-2.17	7.95	2.23	0.20	Magn MWD	Phoenix Directional	0.16	8.24	14.49	N



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Survey Data

MD (mOTH)	Incl (°)	Azm (°)	TVD (mOTH)	NS (m)	EW (m)	VS (m)	DLS (°/30m)	Method	Survey Company	Build (°/30m)	Depart (m)	Turn (°/30m)	Unuse d data
2,828.24	0.69	252.81	2,827.49	-2.19	7.33	2.26	0.19	Magn MWD	Phoenix Directional	0.02	7.65	-16.63	N
2,882.80	1.00	295.89	2,882.04	-2.08	6.59	2.14	0.38	Magn MWD	Phoenix Directional	0.17	6.91	23.69	N
2,937.36	0.98	211.72	2,936.59	-2.27	5.92	2.32	0.73	Magn MWD	Phoenix Directional	-0.01	6.34	-46.28	N
2,964.48	1.48	267.69	2,963.72	-2.48	5.45	2.53	1.37	Magn MWD	Phoenix Directional	0.55	5.99	61.90	N
2,991.61	4.81	185.64	2,990.81	-3.63	4.98	3.67	5.34	Magn MWD	Phoenix Directional	3.68	6.17	-90.74	N
3,005.33	10.22	175.46	3,004.40	-5.42	5.02	5.46	12.14	Magn MWD	Phoenix Directional	11.83	7.39	-22.27	N
3,019.04	13.88	168.59	3,017.81	-8.24	5.45	8.29	8.58	Magn MWD	Phoenix Directional	8.01	9.88	-15.03	N
3,032.46	18.11	170.93	3,030.70	-11.88	6.09	11.93	9.57	Magn MWD	Phoenix Directional	9.46	13.35	5.23	N
3,046.17	22.32	175.40	3,043.57	-16.59	6.64	16.64	9.80	Magn MWD	Phoenix Directional	9.21	17.86	9.78	N
3,059.89	24.54	180.79	3,056.16	-22.03	6.81	22.09	6.74	Magn MWD	Phoenix Directional	4.86	23.06	11.79	N
3,073.30	28.98	183.60	3,068.13	-28.06	6.56	28.12	10.32	Magn MWD	Phoenix Directional	9.93	28.82	6.29	N
3,087.01	34.27	183.52	3,079.80	-35.24	6.12	35.29	11.57	Magn MWD	Phoenix Directional	11.57	35.76	-0.17	N
3,100.73	39.85	181.24	3,090.75	-43.49	5.79	43.54	12.57	Magn MWD	Phoenix Directional	12.20	43.87	-4.99	N
3,114.45	44.90	179.57	3,100.88	-52.73	5.73	52.78	11.32	Magn MWD	Phoenix Directional	11.05	53.04	-3.65	N
3,128.16	48.18	179.31	3,110.31	-62.69	5.83	62.73	7.19	Magn MWD	Phoenix Directional	7.17	62.96	-0.57	N
3,141.57	52.07	179.67	3,118.91	-72.98	5.92	73.02	8.72	Magn MWD	Phoenix Directional	8.70	73.22	0.81	N
3,155.29	56.91	179.08	3,126.87	-84.14	6.04	84.18	10.64	Magn MWD	Phoenix Directional	10.59	84.35	-1.29	N
3,169.01	63.78	178.71	3,133.65	-96.05	6.27	96.10	15.04	Magn MWD	Phoenix Directional	15.03	96.25	-0.81	N
3,182.72	70.89	178.70	3,138.93	-108.69	6.56	108.74	15.55	Magn MWD	Phoenix Directional	15.55	108.89	-0.02	N
3,196.44	73.15	179.62	3,143.17	-121.74	6.75	121.79	5.30	Magn MWD	Phoenix Directional	4.94	121.92	2.01	N
3,210.15	75.86	180.59	3,146.83	-134.95	6.72	135.00	6.27	Magn MWD	Phoenix Directional	5.93	135.12	2.12	N
3,223.56	80.50	180.51	3,149.58	-148.07	6.60	148.12	10.38	Magn MWD	Phoenix Directional	10.38	148.22	-0.18	N
3,237.28	85.34	179.84	3,151.27	-161.68	6.55	161.73	10.69	Magn MWD	Phoenix Directional	10.59	161.81	-1.47	N
3,256.79	91.26	177.13	3,151.85	-181.16	7.07	181.22	10.01	Magn MWD	Phoenix Directional	9.10	181.30	-4.17	N
3,285.44	90.03	178.52	3,151.52	-209.79	8.16	209.85	1.94	Magn MWD	Phoenix Directional	-1.29	209.95	1.46	N
3,314.09	90.42	179.99	3,151.41	-238.44	8.53	238.50	1.59	Magn MWD	Phoenix Directional	0.41	238.59	1.54	N
3,343.05	87.90	180.56	3,151.84	-267.39	8.39	267.45	2.68	Magn MWD	Phoenix Directional	-2.61	267.52	0.59	N
3,371.70	88.54	181.49	3,152.73	-296.02	7.88	296.08	1.18	Magn MWD	Phoenix Directional	0.67	296.13	0.97	N
3,400.35	90.31	180.90	3,153.01	-324.66	7.28	324.71	1.95	Magn MWD	Phoenix Directional	1.85	324.74	-0.62	N



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Survey Data

MD (mOTH)	Incl (°)	Azm (°)	TVD (mOTH)	NS (m)	EW (m)	VS (m)	DLS (°/30m)	Method	Survey Company	Build (°/30m)	Depart (m)	Turn (°/30m)	Unuse d data
3,429.30	90.59	180.87	3,152.79	-353.61	6.83	353.66	0.29	Magn MWD	Phoenix Directional	0.29	353.68	-0.03	N
3,457.96	89.30	178.58	3,152.81	-382.26	6.97	382.31	2.75	Magn MWD	Phoenix Directional	-1.35	382.33	-2.40	N
3,486.91	88.69	178.72	3,153.32	-411.21	7.65	411.26	0.65	Magn MWD	Phoenix Directional	-0.63	411.28	0.15	N
3,515.56	89.02	178.84	3,153.89	-439.85	8.26	439.90	0.37	Magn MWD	Phoenix Directional	0.35	439.92	0.13	N
3,544.52	90.09	179.83	3,154.12	-468.80	8.60	468.85	1.51	Magn MWD	Phoenix Directional	1.11	468.88	1.03	N
3,573.48	90.03	180.97	3,154.09	-497.75	8.40	497.81	1.18	Magn MWD	Phoenix Directional	-0.06	497.82	1.18	N
3,602.13	87.68	179.85	3,154.66	-526.39	8.19	526.45	2.73	Magn MWD	Phoenix Directional	-2.46	526.46	-1.17	N
3,631.08	87.40	180.41	3,155.90	-555.32	8.13	555.37	0.65	Magn MWD	Phoenix Directional	-0.29	555.38	0.58	N
3,660.04	89.75	180.63	3,156.62	-584.27	7.86	584.31	2.45	Magn MWD	Phoenix Directional	2.43	584.32	0.23	N
3,688.99	90.17	181.39	3,156.64	-613.22	7.35	613.26	0.90	Magn MWD	Phoenix Directional	0.44	613.26	0.79	N
3,717.95	90.92	182.28	3,156.37	-642.16	6.43	642.19	1.21	Magn MWD	Phoenix Directional	0.78	642.19	0.92	N
3,746.60	89.55	180.65	3,156.25	-670.80	5.69	670.82	2.23	Magn MWD	Phoenix Directional	-1.43	670.82	-1.71	N
3,775.56	90.25	179.44	3,156.30	-699.75	5.67	699.78	1.45	Magn MWD	Phoenix Directional	0.73	699.78	-1.25	N
3,802.99	90.31	178.04	3,156.17	-727.18	6.28	727.20	1.53	Magn MWD	Phoenix Directional	0.07	727.20	-1.53	N
3,830.12	89.89	178.10	3,156.12	-754.29	7.19	754.32	0.47	Magn MWD	Phoenix Directional	-0.46	754.32	0.07	N
3,857.55	92.13	178.70	3,155.64	-781.70	7.95	781.74	2.54	Magn MWD	Phoenix Directional	2.45	781.75	0.66	N
3,884.68	93.43	178.69	3,154.32	-808.79	8.57	808.84	1.44	Magn MWD	Phoenix Directional	1.44	808.84	-0.01	N
3,912.11	91.88	177.77	3,153.05	-836.18	9.42	836.23	1.97	Magn MWD	Phoenix Directional	-1.70	836.23	-1.01	N
3,939.24	92.97	178.45	3,151.90	-863.27	10.31	863.32	1.42	Magn MWD	Phoenix Directional	1.21	863.33	0.75	N
3,966.67	93.11	177.93	3,150.45	-890.65	11.18	890.71	0.59	Magn MWD	Phoenix Directional	0.15	890.72	-0.57	N
3,993.79	92.52	178.71	3,149.12	-917.73	11.97	917.80	1.08	Magn MWD	Phoenix Directional	-0.65	917.81	0.86	N
4,020.92	93.02	179.35	3,147.81	-944.82	12.43	944.89	0.90	Magn MWD	Phoenix Directional	0.55	944.90	0.71	N
4,048.35	91.96	179.66	3,146.61	-972.23	12.67	972.30	1.21	Magn MWD	Phoenix Directional	-1.16	972.31	0.34	N
4,075.48	90.34	178.80	3,146.07	-999.34	13.03	999.42	2.03	Magn MWD	Phoenix Directional	-1.79	999.43	-0.95	N
4,102.91	89.36	178.66	3,146.14	-1,026.77	13.64	1,026.85	1.08	Magn MWD	Phoenix Directional	-1.07	1,026.86	-0.15	N
4,157.47	91.26	178.94	3,145.85	-1,081.31	14.78	1,081.40	1.06	Magn MWD	Phoenix Directional	1.04	1,081.41	0.15	N
4,184.60	89.78	178.76	3,145.60	-1,108.43	15.33	1,108.52	1.65	Magn MWD	Phoenix Directional	-1.64	1,108.54	-0.20	N
4,193.44	88.77	179.50	3,145.71	-1,117.27	15.46	1,117.36	4.25	Magn MWD	Phoenix Directional	-3.43	1,117.38	2.51	N
4,220.57	87.90	179.37	3,146.50	-1,144.38	15.73	1,144.48	0.97	Magn MWD	Phoenix Directional	-0.96	1,144.49	-0.14	N



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Survey Data

MD (mOTH)	Incl (°)	Azm (°)	TVD (mOTH)	NS (m)	EW (m)	VS (m)	DLS (°/30m)	Method	Survey Company	Build (°/30m)	Depart (m)	Turn (°/30m)	Unuse d data
4,248.00	87.73	179.70	3,147.55	-1,171.80	15.95	1,171.89	0.41	Magn MWD	Phoenix Directional	-0.19	1,171.90	0.36	N
4,275.12	88.43	179.84	3,148.45	-1,198.91	16.06	1,199.00	0.79	Magn MWD	Phoenix Directional	0.77	1,199.01	0.15	N
4,302.56	87.65	179.25	3,149.39	-1,226.32	16.28	1,226.42	1.07	Magn MWD	Phoenix Directional	-0.85	1,226.43	-0.65	N
4,329.99	87.39	179.34	3,150.58	-1,253.73	16.61	1,253.82	0.30	Magn MWD	Phoenix Directional	-0.28	1,253.84	0.10	N
4,357.12	91.09	179.57	3,150.94	-1,280.85	16.87	1,280.94	4.10	Magn MWD	Phoenix Directional	4.09	1,280.96	0.25	N
4,411.98	88.96	179.74	3,150.92	-1,335.70	17.20	1,335.80	1.17	Magn MWD	Phoenix Directional	-1.16	1,335.82	0.09	N
4,439.11	88.51	180.10	3,151.51	-1,362.83	17.24	1,362.92	0.64	Magn MWD	Phoenix Directional	-0.50	1,362.93	0.40	N
4,466.23	87.98	180.27	3,152.35	-1,389.94	17.15	1,390.03	0.62	Magn MWD	Phoenix Directional	-0.59	1,390.05	0.19	N
4,493.67	88.07	179.41	3,153.29	-1,417.36	17.23	1,417.45	0.95	Magn MWD	Phoenix Directional	0.10	1,417.46	-0.94	N
4,520.79	89.44	179.28	3,153.88	-1,444.47	17.54	1,444.57	1.52	Magn MWD	Phoenix Directional	1.52	1,444.58	-0.14	N
4,547.92	89.16	179.38	3,154.21	-1,471.60	17.86	1,471.69	0.33	Magn MWD	Phoenix Directional	-0.31	1,471.71	0.11	N
4,575.35	89.81	179.49	3,154.46	-1,499.03	18.13	1,499.13	0.72	Magn MWD	Phoenix Directional	0.71	1,499.14	0.12	N
4,602.48	88.63	179.87	3,154.83	-1,526.15	18.28	1,526.25	1.37	Magn MWD	Phoenix Directional	-1.30	1,526.26	0.42	N
4,629.91	89.21	179.88	3,155.34	-1,553.58	18.34	1,553.68	0.63	Magn MWD	Phoenix Directional	0.63	1,553.68	0.01	N
4,657.04	92.52	180.77	3,154.93	-1,580.70	18.18	1,580.79	3.79	Magn MWD	Phoenix Directional	3.66	1,580.80	0.98	N
4,711.60	92.80	181.10	3,152.40	-1,635.19	17.30	1,635.28	0.24	Magn MWD	Phoenix Directional	0.15	1,635.28	0.18	N
4,738.73	88.82	179.31	3,152.02	-1,662.31	17.20	1,662.39	4.83	Magn MWD	Phoenix Directional	-4.40	1,662.40	-1.98	N
4,766.16	90.14	179.54	3,152.27	-1,689.74	17.47	1,689.82	1.47	Magn MWD	Phoenix Directional	1.44	1,689.83	0.25	N
4,793.28	88.60	177.56	3,152.57	-1,716.85	18.16	1,716.94	2.77	Magn MWD	Phoenix Directional	-1.70	1,716.95	-2.19	N
4,820.72	94.51	178.09	3,151.82	-1,744.24	19.20	1,744.34	6.49	Magn MWD	Phoenix Directional	6.46	1,744.35	0.58	N
4,847.84	90.89	177.11	3,150.54	-1,771.31	20.34	1,771.42	4.15	Magn MWD	Phoenix Directional	-4.00	1,771.43	-1.08	N
4,875.28	87.48	175.46	3,150.93	-1,798.68	22.11	1,798.80	4.14	Magn MWD	Phoenix Directional	-3.73	1,798.81	-1.80	N
4,902.40	85.58	175.90	3,152.58	-1,825.67	24.15	1,825.81	2.16	Magn MWD	Phoenix Directional	-2.10	1,825.83	0.49	N
4,929.53	85.04	176.11	3,154.79	-1,852.65	26.04	1,852.80	0.64	Magn MWD	Phoenix Directional	-0.60	1,852.83	0.23	N
4,956.96	81.06	175.15	3,158.11	-1,879.79	28.11	1,879.96	4.48	Magn MWD	Phoenix Directional	-4.35	1,880.00	-1.05	N
4,984.09	77.14	174.92	3,163.24	-1,906.32	30.41	1,906.51	4.34	Magn MWD	Phoenix Directional	-4.34	1,906.57	-0.25	N
5,011.52	77.09	175.14	3,169.36	-1,932.96	32.73	1,933.17	0.24	Magn MWD	Phoenix Directional	-0.05	1,933.24	0.24	N



PHOENIX TECHNOLOGY SERVICES

Survey Calculation Sheet

Company **Chevron**
Well **Moose Tooth 29 26 33 Fe**
Field **Lea County, NM**
Rig **Ensign 153**
Phoenix Rep. **Edward LaGarce**

Correction **6.74**
Target TVD **10341**
Target Az. **179.3**
Tgt. Coord.

QDI
CLT

Date	No.	DEPTH	INC.	AZM	C.L.	T.V.D.	V.S.	N/S	E/W	DLS	B./D.	BHA
		0	0.00	0.00	0	0.00	0.00	0.00 N	0.00 E	0.00	0.00	
Tel-Drift	1	115	0.80	306.00	115	115.00	0.48	0.47 N	0.65 W	0.70	0.70	
Tel-Drift	2	284	3.20	293.00	169	283.88	3.08	3.01 N	5.95 W	1.44	1.42	
Tel-Drift	3	377	3.20	290.00	93	376.74	5.03	4.91 N	10.77 W	0.18	0.00	
Tel-Drift	4	459	3.20	308.00	82	458.61	7.27	7.10 N	14.73 W	1.22	0.00	
Tel-Drift	5	551	2.30	299.00	92	550.50	9.79	9.58 N	18.37 W	1.08	0.98	
Tel-Drift	6	643	2.50	303.00	92	642.42	11.82	11.57 N	21.66 W	0.28	0.22	
Tel-Drift	7	736	3.70	305.00	93	735.29	14.69	14.39 N	25.82 W	1.30	1.29	
Tel-Drift	8	825	3.70	295.00	89	824.10	17.61	17.25 N	30.78 W	0.72	0.00	
Tie-In	9	835	3.40	297.00	10	834.08	17.88	17.52 N	31.34 W	3.25	3.00	1
17-Nov	10	1027	1.90	278.10	192	1025.87	21.01	20.56 N	39.56 W	0.89	0.78	
18-Nov	11	1206	1.10	227.50	179	1204.82	20.32	19.81 N	43.76 W	0.82	0.45	
	12	1385	1.10	197.70	179	1383.79	17.54	17.02 N	45.55 W	0.32	0.00	
	13	1565	1.10	201.60	180	1563.75	14.30	13.76 N	46.71 W	0.04	0.00	
	14	1743	1.40	143.70	178	1741.72	10.95	10.42 N	46.06 W	0.70	0.17	
	15	1922	1.20	135.50	179	1920.67	7.82	7.32 N	43.45 W	0.15	0.11	
	16	2101	0.70	140.10	179	2099.65	5.63	5.15 N	41.43 W	0.28	0.28	
	17	2280	0.50	149.30	179	2278.64	4.10	3.64 N	40.33 W	0.12	0.11	
	18	2459	0.50	129.50	179	2457.63	2.92	2.47 N	39.33 W	0.10	0.00	
	19	2637	0.20	79.80	178	2635.63	2.47	2.03 N	38.43 W	0.23	0.17	
	20	2816	0.00	260.30	179	2814.63	2.53	2.09 N	38.12 W	0.11	0.00	
	21	2995	0.20	220.70	179	2993.63	2.29	1.85 N	38.32 W	0.11	0.11	
	22	3174	0.50	214.20	179	3172.62	1.42	0.97 N	38.97 W	0.17	0.17	
19-Nov	23	3353	0.50	241.50	179	3351.62	0.41	0.05 S	40.09 W	0.13	0.00	
	24	3532	1.40	104.50	179	3530.60	0.53	0.97 S	38.66 W	1.00	0.50	
	25	3711	1.40	69.10	179	3709.55	0.34	0.74 S	34.50 W	0.48	0.00	
	26	3890	1.10	30.80	179	3888.51	1.88	1.52 N	31.58 W	0.48	0.17	
	27	4068	0.90	21.60	178	4066.48	4.63	4.28 N	30.19 W	0.14	0.11	
	28	4248	1.80	82.00	180	4246.44	6.30	5.99 N	26.87 W	0.87	0.50	
	29	4427	3.00	98.90	179	4425.28	5.88	5.66 N	19.46 W	0.77	0.67	
	30	4606	2.50	119.60	179	4604.08	3.14	3.01 N	11.43 W	0.62	0.28	
	31	4773	0.70	126.90	167	4771.01	0.68	0.59 N	7.45 W	1.08	1.08	
	32	4932	0.39	144.27	159	4930.00	0.36	0.43 S	6.36 W	0.22	0.19	
23-Nov	33	5121	0.28	120.78	189	5119.00	1.12	1.19 S	5.59 W	0.09	0.06	2
	34	5310	0.23	124.87	189	5307.99	1.58	1.64 S	4.88 W	0.03	0.03	
	35	5500	0.28	130.89	190	5497.99	2.11	2.16 S	4.21 W	0.03	0.03	
	36	5689	0.25	96.06	189	5686.99	2.47	2.51 S	3.46 W	0.09	0.02	

	37	5879	0.12	92.02	190	5876.99	2.53	2.56 S	2.84 W	0.07	0.07	
	38	6058	0.15	187.36	179	6055.99	2.77	2.80 S	2.69 W	0.11	0.02	
	39	6237	1.25	76.95	179	6234.98	2.58	2.59 S	0.81 W	0.73	0.61	
	40	6416	1.30	78.04	179	6413.93	1.76	1.73 S	3.07 E	0.03	0.03	
	41	6595	1.08	78.49	179	6592.89	1.05	0.97 S	6.71 E	0.12	0.12	
	42	6775	1.31	87.15	180	6772.85	0.65	0.53 S	10.43 E	0.16	0.13	
	43	6954	1.18	91.15	179	6951.81	0.63	0.47 S	14.32 E	0.09	0.07	
24-Nov	44	7133	0.98	103.02	179	7130.78	1.05	0.85 S	17.65 E	0.17	0.11	
	45	7311	1.08	108.08	178	7308.75	1.95	1.71 S	20.73 E	0.08	0.06	
	46	7490	1.34	123.24	179	7487.71	3.66	3.38 S	24.08 E	0.23	0.15	
	47	7669	1.45	126.59	179	7666.66	6.20	5.88 S	27.65 E	0.08	0.06	
	48	7847	1.31	98.64	178	7844.61	7.89	7.53 S	31.47 E	0.38	0.08	
	49	8026	0.40	169.70	179	8023.59	8.84	8.45 S	33.61 E	0.69	0.51	
	50	8206	0.52	317.70	180	8203.59	8.84	8.46 S	33.17 E	0.49	0.07	
	51	8384	0.23	284.77	178	8381.58	8.15	7.77 S	32.28 E	0.20	0.16	
	52	8563	0.71	314.21	179	8560.58	7.27	6.91 S	31.14 E	0.29	0.27	
	53	8742	0.87	244.34	179	8739.56	7.06	6.72 S	29.12 E	0.51	0.09	
25-Nov	54	8921	0.36	256.70	179	8918.55	7.76	7.44 S	27.35 E	0.29	0.28	
	55	9100	0.65	283.06	179	9097.55	7.64	7.34 S	25.81 E	0.20	0.16	
	56	9279	0.69	252.81	179	9276.53	7.71	7.43 S	23.79 E	0.20	0.02	
	57	9458	1.00	295.89	179	9455.52	7.31	7.07 S	21.36 E	0.38	0.17	
	58	9637	0.98	211.72	179	9634.50	7.91	7.69 S	19.15 E	0.74	0.01	
	59	9726	1.48	267.69	89	9723.48	8.58	8.38 S	17.60 E	1.39	0.56	
27-Nov	60	9815	4.81	185.64	89	9812.36	12.33	12.14 S	16.08 E	5.43	3.74	3
	61	9860	10.22	175.46	45	9856.96	18.19	18.01 S	16.21 E	12.33	12.02	
	62	9905	13.88	168.59	45	9900.96	27.48	27.28 S	17.60 E	8.72	8.13	
	63	9949	18.11	170.93	44	9943.25	39.44	39.21 S	19.72 E	9.72	9.61	
	64	9994	22.32	175.40	45	9985.47	54.89	54.64 S	21.51 E	9.96	9.36	
	65	10039	24.54	180.79	45	10026.76	72.76	72.51 S	22.06 E	6.85	4.93	
	66	10083	28.98	183.60	44	10066.04	92.53	92.29 S	21.27 E	10.49	10.09	
	67	10128	34.27	183.52	45	10104.35	116.06	115.84 S	19.80 E	11.76	11.76	
	68	10173	39.85	181.24	45	10140.24	143.13	142.92 S	18.71 E	12.77	12.40	
	69	10218	44.90	179.57	45	10173.48	173.44	173.24 S	18.52 E	11.50	11.22	
	70	10263	48.18	179.31	45	10204.43	206.10	205.89 S	18.84 E	7.30	7.29	
	71	10307	52.07	179.67	44	10232.63	239.86	239.65 S	19.14 E	18.86	8.84	
	72	10352	56.91	179.08	45	10258.76	276.48	276.27 S	19.54 E	10.81	10.76	
	73	10397	63.78	178.71	45	10281.01	315.56	315.34 S	20.30 E	15.28	15.27	
	74	10442	70.89	178.70	45	10298.34	357.05	356.83 S	21.24 E	15.80	15.80	
	75	10487	73.15	179.62	45	10312.23	399.85	399.63 S	21.86 E	5.39	5.02	
	76	10532	75.86	180.59	45	10324.25	443.21	442.99 S	21.78 E	6.37	6.02	
	77	10576	80.50	180.51	44	10333.26	486.25	486.04 S	21.37 E	10.55	10.55	
	78	10621	85.34	179.84	45	10338.81	530.89	530.68 S	21.23 E	10.86	10.76	
	79	10685	91.26	177.13	64	10340.71	594.82	594.60 S	22.93 E	10.17	9.25	
29-Nov	80	10779	90.03	178.52	94	10339.65	688.78	688.52 S	26.49 E	1.97	1.31	4
	81	10873	90.42	179.99	94	10339.28	782.78	782.51 S	27.71 E	1.62	0.41	
	82	10968	87.90	180.56	95	10340.67	877.75	877.49 S	27.26 E	2.72	2.65	
	83	11062	88.54	181.49	94	10343.59	971.66	971.43 S	25.58 E	1.20	0.68	
	84	11156	90.31	180.90	94	10344.54	1065.60	1065.40 S	23.62 E	1.98	1.88	
	85	11251	90.59	180.87	95	10343.79	1160.56	1160.38 S	22.15 E	0.30	0.29	
	86	11345	89.30	178.58	94	10343.88	1254.55	1254.37 S	22.60 E	2.80	1.37	
	87	11440	88.69	178.72	95	10345.55	1349.53	1349.33 S	24.84 E	0.66	0.64	
	88	11534	89.02	178.84	94	10347.42	1443.51	1443.29 S	26.84 E	0.37	0.35	

	89	11629	90.09	179.83	95	10348.16	1538.50	1538.28 S	27.94 E	1.53	1.13	
	90	11724	90.03	180.97	95	10348.06	1633.48	1633.28 S	27.28 E	1.20	0.06	
	91	11818	87.68	179.85	94	10349.94	1727.44	1727.25 S	26.61 E	2.77	2.50	
	92	11913	87.40	180.41	95	10354.02	1822.34	1822.16 S	26.39 E	0.66	0.29	
	93	12008	89.75	180.63	95	10356.38	1917.29	1917.12 S	25.53 E	2.48	2.47	
	94	12103	90.17	181.39	95	10356.45	2012.25	2012.10 S	23.86 E	0.91	0.44	
	95	12198	90.92	182.28	95	10355.54	2107.15	2107.05 S	20.81 E	1.23	0.79	
	96	12292	89.55	180.65	94	10355.16	2201.08	2201.01 S	18.41 E	2.27	1.46	
	97	12387	90.25	179.44	95	10355.32	2296.07	2296.01 S	18.34 E	1.47	0.74	
	98	12477	90.31	178.04	90	10354.88	2386.06	2385.98 S	20.32 E	1.56	0.07	
	99	12566	89.89	178.10	89	10354.73	2475.04	2474.93 S	23.31 E	0.48	0.47	
	100	12656	92.13	178.70	90	10353.14	2565.01	2564.88 S	25.82 E	2.58	2.49	
	101	12745	93.53	178.69	89	10348.75	2653.89	2653.74 S	27.85 E	1.57	1.57	
	102	12835	91.88	177.77	90	10344.50	2743.77	2743.60 S	30.63 E	2.10	1.83	
	103	12924	92.97	178.45	89	10340.74	2832.67	2832.47 S	33.56 E	1.44	1.22	
	104	13014	93.11	177.93	90	10335.96	2922.52	2922.30 S	36.40 E	0.60	0.16	
1-Dec	105	13103	92.52	178.71	89	10331.59	3011.40	3011.15 S	39.00 E	1.10	0.66	
	106	13192	93.02	179.35	89	10327.29	3100.29	3100.03 S	40.51 E	0.91	0.56	
	107	13282	91.96	179.66	90	10323.38	3190.21	3189.94 S	41.29 E	1.23	1.18	
	108	13371	90.34	178.80	89	10321.59	3279.18	3278.91 S	42.48 E	2.06	1.82	
	109	13461	89.36	178.66	90	10321.83	3369.18	3368.89 S	44.48 E	1.10	1.09	
	110	13550	90.67	179.03	89	10321.81	3458.17	3457.87 S	46.27 E	1.53	1.47	
2-Dec	111	13640	91.26	178.94	90	10320.29	3548.16	3547.84 S	47.86 E	0.66	0.66	
	112	13729	89.78	178.76	89	10319.48	3637.15	3636.82 S	49.65 E	1.68	1.66	
4-Dec	113	13758	88.77	179.50	29	10319.85	3666.14	3665.81 S	50.09 E	4.32	3.48	5
	114	13847	87.90	179.37	89	10322.44	3755.11	3754.77 S	50.97 E	0.99	0.98	
	115	13937	87.73	179.70	90	10325.87	3845.04	3844.70 S	51.70 E	0.41	0.19	
	116	14026	88.43	179.84	89	10328.85	3933.99	3933.65 S	52.05 E	0.80	0.79	
	117	14116	87.65	179.25	90	10331.93	4023.93	4023.59 S	52.77 E	1.09	0.87	
	118	14206	87.39	179.34	90	10335.82	4113.85	4113.50 S	53.87 E	0.31	0.29	
	119	14295	91.09	179.57	89	10337.00	4202.82	4202.47 S	54.72 E	4.17	4.16	
5-Dec	120	14385	91.12	179.49	90	10335.27	4292.81	4292.45 S	55.46 E	0.09	0.03	
	121	14475	88.96	179.74	90	10335.20	4382.80	4382.45 S	56.06 E	2.42	2.40	
	122	14564	88.51	180.10	89	10337.17	4471.77	4471.42 S	56.19 E	0.65	0.51	
	123	14653	87.98	180.27	89	10339.89	4560.72	4560.38 S	55.90 E	0.63	0.60	
	124	14743	88.07	179.41	90	10343.00	4650.66	4650.33 S	56.15 E	0.96	0.10	
	125	14832	89.44	179.28	89	10344.93	4739.64	4739.30 S	57.17 E	1.55	1.54	
	126	14921	89.16	179.38	89	10346.02	4828.63	4828.28 S	58.21 E	0.33	0.31	
	127	15011	89.81	179.49	90	10346.83	4918.63	4918.28 S	59.10 E	0.73	0.72	
	128	15100	88.63	179.87	89	10348.04	5007.62	5007.26 S	59.59 E	1.39	1.33	
	129	15190	89.21	179.88	90	10349.73	5097.60	5097.25 S	59.79 E	0.64	0.64	
6-Dec	130	15279	92.52	180.77	89	10348.39	5186.56	5186.22 S	59.29 E	3.85	3.72	
	131	15368	93.92	181.52	89	10343.39	5275.37	5275.06 S	57.51 E	1.78	1.57	
	132	15458	92.80	181.10	90	10338.12	5365.17	5364.88 S	55.46 E	1.33	1.24	
	133	15547	88.82	179.31	89	10336.86	5454.12	5453.85 S	55.14 E	4.90	4.47	
	134	15637	90.14	179.54	90	10337.68	5544.12	5543.84 S	56.04 E	1.49	1.47	
	135	15726	88.60	177.56	89	10338.65	5633.10	5632.80 S	58.29 E	2.82	1.73	
	136	15816	94.51	178.09	90	10336.21	5722.99	5722.66 S	61.71 E	6.59	6.57	
	137	15905	90.89	177.11	89	10332.02	5811.84	5811.47 S	65.43 E	4.21	4.07	
	138	15995	87.48	175.46	90	10333.30	5901.68	5901.25 S	71.26 E	4.21	3.79	
	139	16084	85.58	175.90	89	10338.69	5990.34	5989.84 S	77.95 E	2.19	2.13	
	140	16173	85.04	176.11	89	10345.96	6078.89	6078.32 S	84.13 E	0.65	0.61	

