

Mack Energy
Medicine Hat State Com # 1N
30-005-64303

Customer: Mack Energy Creation Date: 2/26/2018
Project: Chaves County
Field: Chaves Co North Ref: Grid
Structure: Sec 35-T15 Job Number:
EPSG Proj (North Ame New Mexico Latitude: 32.96593 Longitude: -104.108
Wellhead: Medicine F Ground Level 3577.6 Kelly Bushii 3599.1
Profile: Survey #1 Print Date: 3/5/2018 Vertical Ser 359.91 BHL TVD: 2839.96

Directional Survey does not go
to total depth of 7631.

MD (ft)	Incl. Deg.	Azim. Deg.	Sub-Sea (ft)	TVD (ft)	Local N Cor (ft)	Local E Cor (ft)	Global N Cor (ft)	Global E Cor (ft)	Latitude DD:MM:SS	Longitude DD:MM:SS	Dogleg (°/100ft)	Vertical Ser (ft)	Build (°/100ft)	Turn (°/100ft)	Comment -----
532	0.8	74.5	-3067.101	531.999	0.073	0.262	715214.3	610416.8	32.9659	-104.108	0	0.07	0	0	
691	0.8	69.2	-2908.117	690.983	0.764	2.37	715215	610418.9	32.9659	-104.108	0.047	0.76	0	-3.333	
876	0.2	252	-2723.122	875.978	1.122	3.27	715215.4	610419.8	32.9659	-104.108	0.54	1.12	-0.324	-95.784	
1061	0.2	358.1	-2538.122	1060.978	1.345	2.952	715215.6	610419.5	32.9659	-104.108	0.173	1.34	0	57.351	
1247	0.4	1.9	-2352.125	1246.975	2.319	2.963	715216.6	610419.5	32.9659	-104.108	0.108	2.31	0.108	2.043	
1433	0.4	0.4	-2166.129	1432.971	3.617	2.989	715217.9	610419.5	32.9659	-104.108	0.006	3.61	0	-0.806	
1530	0.3	37.7	-2069.131	1529.969	4.156	3.147	715218.4	610419.6	32.9659	-104.108	0.251	4.15	-0.103	38.454	
1715	0.8	215.9	-1884.136	1714.964	3.493	2.685	715217.8	610419.2	32.9659	-104.108	0.595	3.49	0.27	96.325	
1900	0.8	236.9	-1699.153	1899.947	1.742	0.846	715216	610417.3	32.9659	-104.108	0.158	1.74	0	11.351	
2017	0.2	330.8	-1582.157	2016.943	1.474	0.062	715215.7	610416.6	32.9659	-104.108	0.716	1.47	-0.513	80.257	1st MWD Lateral Survey
2083	1.1	11.3	-1516.162	2082.938	2.196	0.13	715216.5	610416.6	32.9659	-104.108	1.45	2.2	1.364	61.364	
2114	3.8	3.7	-1485.193	2113.907	3.513	0.255	715217.8	610416.8	32.9659	-104.108	8.753	3.51	8.71	-24.516	
2145	6.5	2.3	-1454.321	2144.779	6.292	0.392	715220.6	610416.9	32.9659	-104.108	8.718	6.29	8.71	-4.516	
2175	8.7	4.2	-1424.587	2174.513	10.252	0.626	715224.5	610417.1	32.966	-104.108	7.38	10.25	7.333	6.333	
2206	9.4	3.3	-1393.973	2205.127	15.118	0.943	715229.4	610417.4	32.966	-104.108	2.304	15.12	2.258	-2.903	
2237	9.8	3.6	-1363.407	2235.693	20.278	1.255	715234.5	610417.8	32.966	-104.108	1.3	20.28	1.29	0.968	
2268	10.4	3.3	-1332.887	2266.213	25.704	1.582	715240	610418.1	32.966	-104.108	1.943	25.7	1.935	-0.968	
2299	11.2	3.5	-1302.437	2296.663	31.503	1.926	715245.8	610418.4	32.966	-104.108	2.583	31.5	2.581	0.645	
2329	11.9	2.9	-1273.044	2326.056	37.5	2.261	715251.8	610418.8	32.966	-104.108	2.367	37.5	2.333	-2	
2360	13.7	0.1	-1242.816	2356.284	44.364	2.429	715258.6	610418.9	32.9661	-104.108	6.14	44.36	5.806	-9.032	
2391	16.2	359.2	-1212.867	2386.233	52.36	2.375	715266.6	610418.9	32.9661	-104.108	8.099	52.36	8.065	-2.903	
2422	18.7	357.3	-1183.296	2415.804	61.65	2.08	715275.9	610418.6	32.9661	-104.108	8.27	61.65	8.065	-6.129	
2453	22.2	357.1	-1154.254	2444.846	72.466	1.55	715286.7	610418.1	32.9661	-104.108	11.293	72.46	11.29	-0.645	
2483	25.8	359.1	-1126.852	2472.248	84.658	1.16	715298.9	610417.7	32.9662	-104.108	12.301	84.66	12	6.667	
2514	29.4	0.7	-1099.384	2499.716	99.017	1.147	715313.3	610417.6	32.9662	-104.108	11.856	99.02	11.613	5.161	
2545	33.9	1.8	-1073.001	2526.099	115.275	1.512	715329.5	610418	32.9662	-104.108	14.635	115.27	14.516	3.548	
2576	38.8	2.2	-1048.041	2551.059	133.632	2.157	715347.9	610418.7	32.9663	-104.108	15.825	133.63	15.806	1.29	
2607	42.3	3.1	-1024.489	2574.611	153.76	3.094	715368	610419.6	32.9664	-104.108	11.447	153.75	11.29	2.903	
2638	44.6	3	-1001.986	2597.114	175.048	4.228	715389.3	610420.7	32.9664	-104.108	7.423	175.04	7.419	-0.323	

2668	47.2	2.5	-981.11	2617.99	196.565	5.26	715410.8	610421.8	32.9665	-104.108	8.749	196.56	8.667	-1.667
2700	50.2	1.7	-959.992	2639.108	220.586	6.136	715434.8	610422.6	32.9665	-104.108	9.561	220.58	9.375	-2.5
2731	52	0.6	-940.526	2658.574	244.705	6.618	715459	610423.1	32.9666	-104.108	6.43	244.69	5.806	-3.548
2762	54	0	-921.87	2677.23	269.461	6.746	715483.7	610423.2	32.9667	-104.108	6.634	269.45	6.452	-1.935
2793	56.1	359.4	-904.112	2694.988	294.868	6.611	715509.1	610423.1	32.9667	-104.108	6.957	294.86	6.774	-1.935
2824	57.1	359.4	-887.048	2712.052	320.747	6.34	715535	610422.8	32.9668	-104.108	3.226	320.74	3.226	0
2854	57.6	359.4	-870.863	2728.237	346.005	6.075	715560.3	610422.6	32.9669	-104.108	1.667	346	1.667	0
2885	58.1	359.7	-854.366	2744.734	372.25	5.869	715586.5	610422.4	32.967	-104.108	1.809	372.24	1.613	0.968
2916	58.4	359.8	-838.054	2761.046	398.611	5.754	715612.9	610422.3	32.967	-104.108	1.006	398.6	0.968	0.323
2947	58.9	0	-821.926	2777.174	425.085	5.708	715639.3	610422.2	32.9671	-104.108	1.704	425.08	1.613	0.645
2978	59.2	0.3	-805.983	2793.117	451.671	5.778	715665.9	610422.3	32.9672	-104.108	1.275	451.66	0.968	0.968
3009	59.6	0.4	-790.202	2808.898	478.353	5.941	715692.6	610422.4	32.9672	-104.108	1.32	478.34	1.29	0.323
3039	60.7	0.2	-775.271	2823.829	504.372	6.077	715718.6	610422.6	32.9673	-104.108	3.712	504.36	3.667	-0.667
3070	63.2	359.8	-760.694	2838.406	531.729	6.076	715746	610422.6	32.9674	-104.108	8.145	531.72	8.065	-1.29
3101	65.5	359.7	-747.276	2851.824	559.672	5.954	715773.9	610422.5	32.9675	-104.108	7.425	559.66	7.419	-0.323
3132	67.9	359.4	-735.015	2864.085	588.141	5.73	715802.4	610422.2	32.9675	-104.108	7.793	588.13	7.742	-0.968
3163	70.8	359	-724.084	2875.016	617.143	5.324	715831.4	610421.8	32.9676	-104.108	9.432	617.13	9.355	-1.29
3194	74.1	358.7	-714.737	2884.363	646.69	4.73	715860.9	610421.2	32.9677	-104.108	10.685	646.68	10.645	-0.968
3224	77.2	358.7	-707.303	2891.797	675.743	4.07	715890	610420.6	32.9678	-104.108	10.333	675.74	10.333	0
3255	80.7	358.5	-701.362	2897.738	706.154	3.327	715920.4	610419.8	32.9679	-104.108	11.308	706.15	11.29	-0.645
3286	85.1	359	-697.531	2901.569	736.902	2.657	715951.2	610419.2	32.968	-104.108	14.283	736.9	14.194	1.613
3381	90.6	0.2	-693.969	2905.131	831.794	1.996	716046.1	610418.5	32.9682	-104.108	5.925	831.79	5.789	1.263
3476	93.1	0.2	-697.035	2902.065	926.737	2.327	716141	610418.8	32.9685	-104.108	2.632	926.73	2.632	0
3572	92.3	0	-701.558	2897.542	1022.629	2.495	716236.9	610419	32.9687	-104.108	0.859	1022.62	-0.833	-0.208
3667	90.3	0.3	-703.713	2895.387	1117.599	2.743	716331.9	610419.2	32.969	-104.108	2.129	1117.59	-2.105	0.316
3762	92.4	0.4	-705.951	2893.149	1212.566	3.323	716426.8	610419.8	32.9693	-104.108	2.213	1212.56	2.211	0.105
3857	90.2	359.8	-708.106	2890.994	1307.535	3.489	716521.8	610420	32.9695	-104.108	2.4	1307.53	-2.316	-0.632
3952	91.3	359.5	-709.349	2889.751	1402.524	2.909	716616.8	610419.4	32.9698	-104.108	1.2	1402.52	1.158	-0.316
4048	90	0	-710.439	2888.661	1498.514	2.49	716712.8	610419	32.97	-104.108	1.451	1498.51	-1.354	0.521
4143	91.3	0.5	-711.516	2887.584	1593.505	2.904	716807.8	610419.4	32.9703	-104.108	1.466	1593.5	1.368	0.526
4238	89.6	0.5	-712.262	2886.838	1688.495	3.733	716902.8	610420.2	32.9706	-104.108	1.789	1688.49	-1.789	0
4333	91	0.3	-712.76	2886.34	1783.489	4.397	716997.7	610420.9	32.9708	-104.108	1.489	1783.48	1.474	-0.211
4429	91.2	359.3	-714.603	2884.497	1879.469	4.062	717093.7	610420.6	32.9711	-104.108	1.062	1879.46	0.208	-1.042
4523	92.6	359.2	-717.719	2881.381	1973.407	2.832	717187.7	610419.3	32.9714	-104.108	1.493	1973.4	1.489	-0.106
4616	90.3	358.6	-720.072	2879.028	2066.354	1.047	717280.6	610417.5	32.9716	-104.108	2.556	2066.35	-2.473	-0.645
4708	91.5	359	-721.517	2877.583	2158.32	-0.879	717372.6	610415.6	32.9719	-104.108	1.375	2158.32	1.304	0.435
4803	89.7	359.3	-722.512	2876.588	2253.3	-2.289	717467.6	610414.2	32.9721	-104.108	1.921	2253.3	-1.895	0.316
4897	91.1	0	-723.168	2875.932	2347.294	-2.863	717561.5	610413.6	32.9724	-104.108	1.665	2347.3	1.489	0.745
4990	92.6	0.9	-726.171	2872.929	2440.239	-2.133	717654.5	610414.4	32.9726	-104.108	1.881	2440.24	1.613	0.968
5083	90.9	1	-729.011	2870.089	2533.179	-0.592	717747.4	610415.9	32.9729	-104.108	1.831	2533.18	-1.828	0.108

5177	89.1	1.2	-729.011	2870.089	2627.158	1.213	717841.4	610417.7	32.9731	-104.108	1.927	2627.15	-1.915	0.213
5270	90.3	1.1	-728.524	2870.576	2720.136	3.079	717934.4	610419.6	32.9734	-104.108	1.295	2720.13	1.29	-0.108
5364	89.6	358.4	-728.442	2870.658	2814.126	2.669	718028.4	610419.2	32.9737	-104.108	2.967	2814.12	-0.745	-2.872
5458	91	358	-728.934	2870.166	2908.076	-0.284	718122.3	610416.2	32.9739	-104.108	1.549	2908.07	1.489	-0.426
5551	89.9	359.1	-729.664	2869.436	3001.04	-2.637	718215.3	610413.9	32.9742	-104.108	1.673	3001.04	-1.183	1.183
5646	91.4	359.1	-730.742	2868.358	3096.02	-4.129	718310.3	610412.4	32.9744	-104.108	1.579	3096.02	1.579	0
5740	90.5	359.7	-732.301	2866.799	3190	-5.113	718404.3	610411.4	32.9747	-104.108	1.151	3190	-0.957	0.638
5834	91.8	359.7	-734.187	2864.913	3283.978	-5.605	718498.2	610410.9	32.975	-104.108	1.383	3283.98	1.383	0
5953	90	0.6	-736.056	2863.044	3402.957	-5.293	718617.2	610411.2	32.9753	-104.108	1.691	3402.96	-1.513	0.756
6047	89.7	0.3	-735.81	2863.29	3496.953	-4.555	718711.2	610411.9	32.9755	-104.108	0.451	3496.96	-0.319	-0.319
6140	89.5	0	-735.161	2863.939	3589.95	-4.311	718804.2	610412.2	32.9758	-104.108	0.388	3589.95	-0.215	-0.323
6232	89.1	359	-734.037	2865.063	3681.939	-5.114	718896.2	610411.4	32.976	-104.108	1.171	3681.94	-0.435	-1.087
6324	91.4	358.9	-734.438	2864.662	3773.916	-6.8	718988.2	610409.7	32.9763	-104.108	2.502	3773.92	2.5	-0.109
6417	91.6	358.8	-736.873	2862.227	3866.866	-8.666	719081.1	610407.8	32.9766	-104.108	0.24	3866.87	0.215	-0.108
6511	90.5	359	-738.595	2860.505	3960.831	-10.47	719175.1	610406	32.9768	-104.108	1.189	3960.84	-1.17	0.213
6603	90.3	359.1	-739.238	2859.862	4052.816	-11.995	719267.1	610404.5	32.9771	-104.108	0.243	4052.83	-0.217	0.109
6696	90.2	359.9	-739.643	2859.457	4145.811	-12.807	719360.1	610403.7	32.9773	-104.108	0.867	4145.83	-0.108	0.86
6789	90.8	0	-740.455	2858.645	4238.807	-12.888	719453.1	610403.6	32.9776	-104.108	0.654	4238.82	0.645	0.108
6883	90.6	0.2	-741.603	2857.497	4332.8	-12.724	719547.1	610403.8	32.9778	-104.108	0.301	4332.81	-0.213	0.213
6977	91.5	359.8	-743.326	2855.774	4426.783	-12.724	719641	610403.8	32.9781	-104.108	1.048	4426.8	0.957	-0.426
7072	91.4	359.5	-745.73	2853.37	4521.75	-13.304	719736	610403.2	32.9784	-104.108	0.333	4521.77	-0.105	-0.316
7165	91.6	359.3	-748.164	2850.936	4614.713	-14.278	719829	610402.2	32.9786	-104.108	0.304	4614.73	0.215	-0.215
7261	91.4	359.4	-750.677	2848.423	4710.674	-15.366	719924.9	610401.1	32.9789	-104.108	0.233	4710.69	-0.208	0.104
7354	90.7	359.8	-752.381	2846.719	4803.656	-16.015	720017.9	610400.5	32.9791	-104.108	0.867	4803.67	-0.753	0.43
7446	92	1.6	-754.549	2844.551	4895.617	-14.892	720109.9	610401.6	32.9794	-104.108	2.413	4895.63	1.413	1.957
7539	91.9	1.3	-757.714	2841.386	4988.534	-12.54	720202.8	610404	32.9796	-104.108	0.34	4988.55	-0.108	-0.323
7567	91.9	0.909	-758.642	2840.458	5016.513	-12.001	720230.8	610404.5	32.9797	-104.108	1.395	5016.53	0	-1.395
7582	91.9	0.7	-759.139	2839.961	5031.503	-11.79	720245.8	610404.7	32.9798	-104.108	1.395	5031.52	0	-1.395

Last MWD Survey 7539 MD/2841.39 TVD 4988.53 N -12.54 W N: 720202.7 E: 6
 Cross 40' FNL 7567 MD/2840.46 TVD 5016.51 N -12.0 W N: 720230.7 E: 610404
 PTB 7582 MD/2839.96 TVD 5031.56 N -11.79 W N: 720245.7 E: 610404.7