

DIRECTIONAL SURVEY REPORT

gyrodata

Report Date: 11/14/2018	Job Start Date: 9/29/2018	Time Zone: GMT -06:00	North Reference: GridNorth
Operator: Chisholm Energy	Map System: US State Plane 1983	Reference Datum: RotaryTable	Vertical Section Az (deg): 180
Well Name: Diamondback 24 Federal 185 3H	Map Grid: GRS 1980	Survey Calc. Method: Minimum Curvature	Magnetic Model: HDGM
Rig: JDC 7	Map Datum: North American Datum 1983	Ground Elevation (ft): 3620	Calc. Date: 9/24/2018
Job Number: FD0918DRPM188	Map Zone: New Mexico Eastern Zone	RCD Above MSL (ft): 31	Field Strength (nT): 48272.8
State: NM	Well Latitude: 32° 39' 10.044" N	Non Mag Above (ft): 0	Dip Angle (deg): 60.62
County: Lea County	Well Longitude: 103° 42' 48.24" W	Non Mag Below (ft): 0	Mag. Declination (deg): 6.88
Field: Lea Co, NM	Well Northings:		Grid Convergence (deg): 0.33
Survey Correction Co.: Gyrodata Inc.	Well Eastings:		Total Correction (deg): 6.55

								Accelerometer (g)			Magnetometer (nT)			Corrected Survey QC		Raw Survey QC								
Depth (ft.)	Inclination (°)	Azimuth (°)	DLS (°/100)	TVD (ft.)	N/S (+/-) (ft.)	E/W (+/-) (ft.)	Vertical Section (ft.)	Ax	Ay	Az	Mx	My	Mz	Magnetic Dip Angle (°)	Mag Field (nT)	Magnetic Dip Angle (°)	Mag Field (nT)	Gravity Total (g)	Temp (°F)	Mud Type	Survey Type	Survey #	Run #	Date & Time
0.00	0.00	0.00		0.00	0.00	0.00																		
175.00	0.44	327.12	0.25	175.00	0.56	-0.36	-0.56	0.007570	-0.000733	1.000000	19286	13205	48919	60.69	48242	64.13	54216	0.99981	69.80	Water	MWD+HRGM+AX	1	1	9/29/18 12:22
294.00	0.58	301.54	0.22	293.99	1.26	-1.13	-1.26	0.003175	-0.009524	1.000000	23278	-2289	47784	60.74	48216	63.68	53202	0.99983	75.20	Water	MWD+HRGM+AX	2	1	9/29/18 13:55
414.00	0.49	269.77	0.25	413.99	1.58	-2.16	-1.58	-0.001221	-0.008547	1.000000	23901	-202	47784	60.44	48358	63.49	53428	0.99982	80.60	Water	MWD+HRGM+AX	3	1	9/29/18 15:01
473.00	0.62	238.34	0.55	472.99	1.41	-2.68	-1.41	-0.002686	0.010501	1.000000	-14121	-19029	47381	60.90	48139	63.82	52976	0.99984	82.40	Water	MWD+HRGM+AX	4	1	9/29/18 15:37
631.00	0.66	231.57	0.05	630.98	0.40	-4.12	-0.40	0.003663	-0.010989	1.000000	10385	21520	47857	60.76	48206	63.94	53491	0.99985	86.00	Water	MWD+HRGM+AX	5	1	9/29/18 17:20
726.00	0.83	187.25	0.61	725.97	-0.63	-4.64	0.63	0.010989	-0.009524	1.000000	-18553	-15696	47308	60.61	48278	63.64	53185	0.99989	89.60	Water	MWD+HRGM+AX	6	1	9/29/18 18:04
820.00	0.46	180.88	0.40	819.96	-1.68	-4.73	1.68	0.000244	-0.008059	1.000000	-3059	23791	47234	60.65	48257	63.54	52976	0.99981	91.40	Water	MWD+HRGM+AX	7	1	9/29/18 18:55
915.00	0.71	141.50	0.48	914.96	-2.52	-4.37	2.52	0.006593	-0.010501	1.000000	5073	-23755	47711	60.38	48391	63.52	53538	0.99986	95.00	Water	MWD+HRGM+AX	8	1	9/29/18 20:36
1009.00	0.70	179.47	0.49	1008.95	-3.55	-4.00	3.55	0.010012	-0.007082	1.000000	-21154	11410	47308	60.78	48194	63.76	53063	0.99986	98.60	Water	MWD+HRGM+AX	9	1	9/29/18 21:53
1104.00	0.81	174.74	0.13	1103.94	-4.80	-3.93	4.80	0.013919	-0.002198	1.000000	-22876	-8553	46795	60.45	48354	63.23	52785	0.99988	100.40	Water	MWD+HRGM+AX	10	1	9/29/18 23:05
1152.00	0.70	186.00	0.38	1151.94	-5.43	-3.93	5.43	0.007570	-0.009524	1.000000	-15330	18919	47491	60.46	48352	63.55	53370	0.99985	100.40	Water	MWD+HRGM+AX	11	1	9/29/18 23:45
1331.00	0.61	189.89	0.06	1330.93	-7.46	-4.21	7.46	0.010501	-0.01221	1.000000	-23791	4158	42839	60.59	48286	61.19	49178	0.99984	91.40	Water	MWD+HRGM+AX	12	2	10/3/18 2:42
1426.00	1.52	105.02	1.67	1425.91	-8.28	-3.08	8.28	0.025153	-0.008547	1.000000	-11996	-20897	42802	60.39	48384	60.88	49119	1.00013	93.20	Water	MWD+HRGM+AX	13	2	10/3/18 4:12
1520.00	2.45	102.19	0.99	1519.86	-9.03	0.09	9.03	-0.042735	-0.002198	1.000000	2912	23828	42949	60.54	48312	61.13	49202	1.00070	95.00	Water	MWD+HRGM+AX	14	2	10/3/18 5:05
1615.00	2.95	105.18	0.55	1614.75	-10.10	4.43	10.10	-0.047131	-0.020757	0.999512	-4194	23681	42802	60.67	48247	61.24	49096	1.00062	96.80	Water	MWD+HRGM+AX	15	2	10/3/18 5:46
1709.00	3.24	106.18	0.31	1708.61	-11.47	9.32	11.47	0.010989	-0.055433	0.999512	-24158	1667	42656	60.60	48285	61.11	49050	1.00089	98.60	Water	MWD+HRGM+AX	16	2	10/3/18 6:32
1804.00	2.62	112.05	0.72	1803.49	-13.03	13.91	13.03	0.011966	-0.044200	1.000000	-24231	1996	42582	60.57	48297	61.07	49034	1.00083	100.40	Water	MWD+HRGM+AX	17	2	10/3/18 7:37
1898.00	2.53	113.09	0.11	1897.39	-14.65	17.81	14.65	0.041758	-0.014408	1.000000	-15476	-18590	42546	60.71	48230	61.19	48941	1.00076	102.20	Water	MWD+HRGM+AX	18	2	10/3/18 8:41
1993.00	2.29	105.71	0.41	1992.31	-15.99	21.56	15.99	-0.037851	-0.012943	1.000000	-2399	23828	42619	60.68	48244	61.11	48887	1.00058	102.20	Water	MWD+HRGM+AX	19	2	10/3/18 9:41
2088.00	2.58	102.75	0.33	2087.22	-16.98	25.48	16.98	0.039805	-0.021245	1.000000	7161	-22876	42802	60.61	48277	61.13	49057	1.00080	105.80	Water	MWD+HRGM+AX	20	2	10/3/18 10:42
2182.00	2.91	97.00	0.46	2181.12	-17.73	29.91	17.73	0.050550	-0.004660	1.000000	-4487	-23498	42802	60.49	48336	60.95	49034	1.00107	105.80	Water	MWD+HRGM+AX	21	2	10/3/18 11:36
2276.00	2.40	90.94	0.62	2275.02	-18.06	34.24	18.06	0.014408	-0.039316	1.000000	22363	-7601	42912	60.57	48294	61.02	48983	1.00066	104.00	Water	MWD+HRGM+AX	22	2	10/3/18 14:12
2371.00	2.31	81.52	0.42	2369.94	-17.81	38.13	17.81	-0.001221	-0.040293	1.000000	22656	5110	43132	60.70	48237	61.18	48987	1.00059	109.40	Water	MWD+HRGM+AX	23	2	10/3/18 15:12
2465.00	1.76	82.01	0.59	2463.88	-17.33	41.43	17.33	-0.014408	-0.027106	1.000000	18004	14817	43132	60.70	48237	61.21	49031	1.00025	109.40	Water	MWD+HRGM+AX	24	2	10/3/18 16:21
2560.00	1.06	85.48	0.74	2558.85	-17.06	43.75	17.06	0.016850	-0.007570	1.000000	-6099	-22802	42985	60.56	48301	61.04	49040	0.99995	111.20	Water	MWD+HRGM+AX	25	2	10/3/18 17:07
2654.00	1.66	75.61	0.68	2652.82	-16.65	45.94	16.65	0.005128	-0.028571	1.000000	22985	3205	43095	60.69	48241	61.14	48947	1.00020	111.20	Water	MWD+HRGM+AX	26	2	10/3/18 17:57
2749.00	2.16	73.11	0.53	2747.77	-15.79	48.98	15.79	0.031502	-0.020757	1.000000	18480	-13828	43315	60.64	48266	61.15	49081	1.00049	86.00	Water	MWD+HRGM+AX	27	2	10/4/18 21:02
2844.00	1.64	94.45	0.92	2842.72	-15.37	52.05	15.37	0.020757	-0.019780	1.000000	-16575	-16905	42949	60.61	48276	61.12	49042	1.00019	96.80	Water	MWD+HRGM+AX	28	2	10/4/18 22:34
2938.00	0.81	149.16	1.43	2936.70	-16.05	53.73	16.05	-0.004640	-0.013431	1.000000	-7234	22985	42842	61.21	49023	0.99988	100.40	Water	MWD+HRGM+AX	29	2	10/4/18 23:36		
3032.00	0.98	143.20	0.21	3030.68	-17.26	54.55	17.26	-0.015385	-0.007570	1.000000	23095	6612	42692	60.81	48179	61.35	48987	0.99993	102.20	Water	MWD+HRGM+AX	30	2	10/5/18 0:40
3127.00	0.52	148.17	0.49	3125.68	-18.28	55.27	18.28	-0.009035	-0.000244	1.000000	18553	15220	42692	60.60	48281	61.07	48974	0.99982	102.20	Water	MWD+HRGM+AX	31	2	10/5/18 1:42
3222.00	0.68	142.91	0.18	3220.67	-19.09	55.84	19.09	-0.005617	-0.010501	1.000000	22766	-7857	42656	60.58	48291	61.05	48985	0.99985	100.40	Water	MWD+HRGM+AX	32	2	10/5/18 2:58
3316.00	0.83	137.62	0.18	3314.66	-20.04	56.63	20.04	0.005617	-0.013431	1.000000	10275	-21886	42619	60.53	48318	60.99	49000	0.99989	100.40	Water	MWD+HRGM+AX	33	2	10/5/18 4:15
3411.00	1.35	146.78	0.58	3409.65	-21.49	57.71	21.49	-0.013431	-0.019292	1.000000	23388	-7088	42399	60.63	48269	61.09	48938	1.00006	100.40	Water	MWD+HRGM+AX	34	2	10/5/18 5:34
3505.00	1.36	143.84	0.07	3503.62	-23.31	58.97	23.31	-0.020757	-0.011477	1.000000	8297	22876	42436	60.71	48229	61.18	48918	1.00006	96.80	Water	MWD+HRGM+AX	35	2	10/5/18 6:35
3600.00	1.10	126.14	0.48	3598.60	-24.76	60.37	24.76	-0.017827	-0.007082	1.000000	19176	14487	42619	60.68	48244	61.14	48928	0.99996	100.40	Water	MWD+HRGM+AX	36	2	10/5/18 7:49
3694.00	0.51	151.13	0.72	3692.59	-25.66	61.31	25.66	-0.007570	-0.004640	1.000000	23791	1410	42729	60.78	48196	61.26	48926	0.99982	96.80	Water	MWD+HRGM+AX	37	2	10/5/18 9:59
3789.00	0.27	211.72	0.47	3787.59	-26.22	61.39	26.22	0.001221	-0.004640	1.000000	-15256	-18370	42729	60.61	48280	61.05	48949	0.99979	98.60	Water	MWD+HRGM+AX	38	2	10/5/18 11:43
3883.00	0.02	233.84	0.27	3881.59	-26.42	61.26	26.42	-0.000244	-0.000244	1.000000	23645	-934	42802	60.65	48258	61.08	48908	0.99978	98.60	Water	MWD+HRGM+AX	39	2	10/5/18 13:24
3978.00	0.08	202.64	0.07	3976.59	-26.49	61.22	26.49	-0.001221	-0.000733	1.000000	22876	6099	42766	60.69	48241	61.11	48881	0.99978	96.80	Water	MWD+HRGM+AX	40	2	10/5/18 15:09
4072.00	0.58	200.10	0.53	4070.58	-27.00	61.03	27.00	0.001709	-0.010012	1.000000	-													

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Report Date: 11/14/2018	Job Start Date: 9/29/2018	Time Zone: GMT -05:00	North Reference: GridNorth
Operator: Chisholm Energy	Map System: US State Plane 1983	Reference Datum: RotaryTable	Vertical Section Az (deg): 180
Well Name: Diamondback 24 Federal 185 3H	Map Ellipsoid: GRS 1980	Survey Calc. Method: Minimum Curvature	Magnetic Section Az (deg): 180
Rig: JDC 7	Map Datum: North American Datum 1983	Ground Elevation (ft.): 3620	Calc. Date: 9/24/2018
Job Number: F009180RPM188	Map Zone: New Mexico Eastern Zone	RSS Above MSL (ft.): 31	Field Strength (nT): 48272.8
State: NM	Well Latitude: 32° 38' 10.044" N	Non Mag Above (ft.): 0	Dip Angle (deg): 60.62
County: Lea County	Well Longitude: 103° 42' 48.24" W	Non Mag Below (ft.): 0	Mag. Declination (deg): 6.88
Field: Lea Co. NM	Well Northings: Well Eastings:		Grid Convergence (deg): 0.33
Survey Correction Co.: Gyrodata Inc.			Total Correction (deg): 6.55

Depth (ft.)	Inclination (°)	Azimuth (°)	DLS (°/100)	TVD (ft.)	N/S (°/-)	E/W (°/-)	Vertical Section (ft.)	Accelerometer (g)			Magnetometer (nT)			Corrected Survey QC		Raw Survey QC		Temp (°F)	Mud Type	Survey Type	Survey #	Run #	Date & Time	
								Ax	Ay	Az	Mx	My	Mz	Magnetic Dip Angle (°)	Mag Field (nT)	Magnetic Dip Angle (°)	Mag Field (nT)							Gravity Total (g)
5396.00	0.95	158.74	0.14	5394.35	-50.27	63.48	50.27	-0.015873	0.004640	1.000000	23828	4524	41410	60.67	48251	60.48	47990	0.99992	96.80	Water	MWD+HRGM+AX	55	4	10/8/18 16:59
5465.00	0.88	160.96	0.11	5463.34	-51.30	63.86	51.30	-0.015385	0.000244	1.000000	22070	9835	41447	60.73	48221	60.56	47975	0.99990	96.80	Water	MWD+HRGM+AX	56	4	10/8/18 19:20
5613.00	1.32	161.63	0.30	5611.32	-53.99	64.77	53.99	-0.010012	0.020757	1.000000	18736	-15879	38187	60.62	48273	58.45	45403	1.00005	111.20	Water	MWD+HRGM+AX	57	5	10/13/18 2:35
5707.00	1.20	168.23	0.20	5705.29	-55.98	65.31	55.98	0.020269	0.005128	1.000000	-20824	-12949	38223	60.61	48277	58.46	45413	1.00000	120.20	Water	MWD+HRGM+AX	58	5	10/13/18 4:59
5802.00	1.18	137.87	0.66	5800.27	-57.68	66.17	57.68	0.011966	0.016850	1.000000	4963	-23828	38333	60.54	48311	58.38	45408	0.99999	123.80	Water	MWD+HRGM+AX	59	5	10/13/18 6:41
5895.00	1.19	125.75	0.27	5893.25	-58.96	67.60	58.96	0.020269	0.004151	1.000000	-8040	-22802	38443	60.56	48303	58.43	45414	0.99999	127.40	Water	MWD+HRGM+AX	60	5	10/13/18 8:32
5990.00	1.28	107.52	0.42	5988.23	-59.85	69.41	59.85	-0.002198	-0.022222	1.000000	-22619	7711	38590	60.60	48282	58.50	45390	1.00003	131.00	Water	MWD+HRGM+AX	61	5	10/13/18 10:58
6084.00	1.27	101.85	0.13	6082.21	-60.38	71.43	60.38	-0.015385	-0.015873	1.000000	-14744	18626	38663	60.65	48257	58.58	45378	1.00002	131.00	Water	MWD+HRGM+AX	62	5	10/13/18 13:07
6178.00	1.34	99.42	0.09	6176.18	-60.78	73.53	60.78	-0.007570	0.022222	1.000000	23022	5550	38663	60.69	48238	58.61	45339	1.00006	134.60	Water	MWD+HRGM+AX	63	5	10/13/18 14:56
6273.00	1.25	93.19	0.18	6271.16	-61.02	75.66	61.02	-0.015385	0.015385	1.000000	16319	16978	38736	60.72	48225	58.66	45333	1.00002	136.40	Water	MWD+HRGM+AX	64	5	10/13/18 17:28
6367.00	1.06	96.40	0.21	6365.14	-61.17	77.55	61.17	0.006593	-0.017338	1.000000	-22399	-7747	38773	60.61	48277	58.58	45443	0.99995	136.40	Water	MWD+HRGM+AX	65	5	10/13/18 18:57
6462.00	0.96	97.38	0.11	6460.13	-61.37	79.21	61.37	-0.013431	-0.010012	1.000000	-13315	19615	38810	60.62	48275	58.61	45478	0.99992	136.40	Water	MWD+HRGM+AX	66	5	10/13/18 20:35
6556.00	1.35	93.33	0.42	6554.11	-61.53	81.10	61.53	-0.003663	0.023199	1.000000	23242	4011	38773	60.68	48242	58.64	45383	1.00006	138.20	Water	MWD+HRGM+AX	67	5	10/13/18 22:01
6651.00	1.30	87.27	0.16	6649.08	-61.55	83.29	61.55	0.011966	0.019292	1.000000	21337	-9872	38846	60.66	48255	58.64	45406	1.00004	140.00	Water	MWD+HRGM+AX	68	5	10/14/18 1:26
6745.00	1.25	75.50	0.28	6743.06	-61.24	85.35	61.24	-0.021734	0.002686	1.000000	-4817	22876	38956	60.61	48278	58.61	45432	1.00002	138.20	Water	MWD+HRGM+AX	69	5	10/14/18 3:58
6840.00	1.18	81.41	0.15	6838.04	-60.84	87.32	60.84	-0.018315	0.009524	1.000000	15256	-17821	38919	60.63	48267	58.63	45443	0.99999	140.00	Water	MWD+HRGM+AX	70	5	10/14/18 5:33
6934.00	0.81	70.79	0.44	6932.02	-60.47	88.91	60.47	0.007570	-0.011966	1.000000	-12876	-19652	38956	60.55	48304	58.56	45492	0.99988	138.20	Water	MWD+HRGM+AX	71	5	10/14/18 7:02
7029.00	0.91	52.21	0.31	7027.01	-59.79	90.14	59.79	-0.005617	0.014896	1.000000	10238	-20824	39066	60.63	48266	58.66	45438	0.99991	138.20	Water	MWD+HRGM+AX	72	5	10/14/18 8:42
7123.00	0.86	57.44	0.10	7121.00	-58.95	91.32	58.95	-0.007570	0.012943	1.000000	8626	21593	39029	60.66	48255	58.68	45431	0.99989	140.00	Water	MWD+HRGM+AX	73	5	10/14/18 10:49
7218.00	0.63	66.77	0.27	7215.99	-58.36	92.40	58.36	-0.005617	0.009524	1.000000	11960	20165	38956	60.63	48268	58.65	45467	0.99984	140.00	Water	MWD+HRGM+AX	74	5	10/14/18 12:33
7312.00	0.52	75.61	0.15	7309.99	-58.05	93.29	58.05	-0.008547	0.003175	1.000000	128	23571	38883	60.60	48284	58.59	45470	0.99982	138.20	Water	MWD+HRGM+AX	75	5	10/14/18 14:37
7407.00	0.33	102.39	0.28	7404.99	-58.00	93.97	58.00	0.005128	-0.002686	1.000000	-13315	-19689	38810	60.56	48302	58.55	45509	0.99980	138.20	Water	MWD+HRGM+AX	76	5	10/14/18 16:52
7501.00	0.24	132.04	0.18	7498.98	-58.19	94.38	58.19	0.003175	-0.002686	1.000000	-23095	-5733	38773	60.61	48278	58.60	45493	0.99979	138.20	Water	MWD+HRGM+AX	77	5	10/14/18 18:34
7596.00	0.23	169.18	0.16	7593.98	-58.51	94.57	58.51	0.003663	0.001709	1.000000	-17674	-16062	38773	60.58	48291	58.59	45538	0.99979	138.20	Water	MWD+HRGM+AX	78	5	10/14/18 20:18
7690.00	0.34	181.22	0.13	7687.98	-58.98	94.60	58.98	-0.004151	0.004151	0.999023	18407	-15293	38700	60.62	48274	58.60	45501	0.99982	134.60	Water	MWD+HRGM+AX	79	5	10/14/18 22:48
7785.00	0.42	204.83	0.18	7782.98	-59.58	94.45	59.58	-0.006593	0.003175	1.000000	17308	-16575	38626	60.63	48268	58.58	45456	0.99981	134.60	Water	MWD+HRGM+AX	80	5	10/15/18 1:52
7879.00	0.42	217.19	0.10	7876.98	-60.16	94.09	60.16	0.004151	0.006105	1.000000	-21593	-10311	38700	60.64	48262	58.64	45500	0.99981	134.60	Water	MWD+HRGM+AX	81	5	10/15/18 4:21
7974.00	0.38	224.63	0.07	7971.98	-60.67	93.66	60.67	0.004151	0.005128	1.000000	-23242	-5513	38736	60.64	48266	58.64	45509	0.99980	134.60	Water	MWD+HRGM+AX	82	5	10/15/18 6:55
8068.00	0.32	39.70	0.74	8065.98	-60.69	93.61	60.69	0.002198	0.005128	1.000000	19579	12876	38956	60.68	48247	58.70	45461	0.99980	136.40	Water	MWD+HRGM+AX	83	5	10/15/18 9:27
8163.00	1.19	44.64	0.92	8160.97	-59.78	94.47	59.78	-0.014408	0.014896	1.000000	-1850	22949	39286	60.60	48284	58.70	45535	0.99999	136.40	Water	MWD+HRGM+AX	84	5	10/15/18 11:52
8211.00	1.39	77.16	1.56	8208.95	-59.30	95.39	59.30	-0.022222	-0.009524	0.999023	-15110	-17857	43462	60.59	48286	61.28	49357	0.99910	111.20	Water	MWD+HRGM+AX	85	6	10/16/18 9:35
8306.00	12.69	117.83	12.28	8303.11	-63.93	105.78	63.93	-0.192186	-0.106227	0.975092	4744	27894	40092	60.57	48303	61.17	49070	0.99929	114.80	Water	MWD+HRGM+AX	86	6	10/16/18 12:43
8337.00	17.73	116.02	16.33	8333.01	-67.59	113.04	67.59	-0.228327	-0.201465	0.952137	458	30238	38590	60.58	48299	61.18	49028	0.99942	116.60	Water	MWD+HRGM+AX	87	6	10/16/18 13:47
8369.00	21.41	118.80	11.86	8363.16	-72.54	122.54	72.54	-0.275214	-0.239560	0.930647	3462	32180	36758	60.54	48327	61.12	48976	0.99940	118.40	Water	MWD+HRGM+AX	88	6	10/16/18 14:58
8400.00	21.74	126.67	9.39	8391.99	-78.70	132.10	78.70	-0.351404	0.116484	0.928205	31777	11117	35550	60.55	48324	61.19	48960	0.99909	120.20	Water	MWD+HRGM+AX	89	6	10/16/18 16:00
8431.00	24.43	136.18	14.81	8420.52	-86.76	141.15	86.76	-0.412454	-0.028571	0.910134	29872	20421	32876	60.54	48338	61.20	48889	0.99942	122.00	Water	MWD+HRGM+AX	90	6	10/16/18 17:08
8463.00	26.18	140.28	7.74	8449.45	-96.96	150.24	96.96	-0.031502	-0.043980	0.896948	-14744	34451	31374	60.56	48333	61.26	48872	0.99925	123.80	Water	MWD+HRGM+AX	91	6	10/16/18 18:10
8494.00	28.49	142.22	7.99	8476.98	-108.07	159.14	108.07	-0.474969	-0.044200	0.878877	33315	19762	29725	60.57	48321	61.29	48826	0.99977	123.80	Water	MWD+HRGM+AX	92	6	10/16/18 19:19
8526.00	28.92	143.28	2.08	8505.05	-120.30	168.45	120.30	-0.391453	-0.283516	0.874970	19176	33938	29559	60.62	48277	61.37	48800	0.99937	125.60	Water	MWD+HRGM+AX	93	6	10/16/18 20:23
8557.00	29.51	144.51	2.72	8532.11	-132.53	177.36	132.53	-0.465201	-0.161905	0.870086	28846	26868	28700	60.58	48318	61.24	48761	0.99962	125.60	Water	MWD+HRGM+AX	94	6	10/16/18 21:15
8589.00																								

DIRECTIONAL SURVEY REPORT



Report Date: 11/14/2018	Job Start Date: 9/29/2018	Time Zone: GMT -06:00	North Reference: GridNorth
Operator: Chisholm Energy	Map System: US State Plane 1983	Reference Datum: RotaryTable	Vertical Section Az (deg): 180
Well Name: Diamondback 24 Federal 185 3H	Map Ellipsoid: GRS 1980	Survey Calc. Method: Minimum Curvature	Magnetic Model: HOGM
Rig: JDC 7	Map Datum: North American Datum 1983	Ground Elevation (ft.): 3620	Calc. Date: 9/24/2018
Job Number: F00918DRPM188	Map Zone: New Mexico Eastern Zone	RXD Above MSL (ft.): 31	Field Strength (nT): 48272.8
State: NM	Well Latitude: 32° 29' 10.044" N	Non Mag Above (ft.): 0	Dip Angle (deg): 66.62
County: Lea County	Well Longitude: 103° 42' 48.24" W	Non Mag Below (ft.): 0	Mag. Declination (deg): 6.88
Field: Lea Co, NM	Well Northings:		Grid Convergence (deg): 0.33
Survey Correction Co.: Gyrodata Inc.	Well Eastings:		Total Correction (deg): 6.55

		Accelerometer (g)										Magnetometer (nT)			Corrected Survey QC		Raw Survey QC							
Depth (ft.)	Inclination (°)	Azimuth (°)	DLS (°/100)	TVD (ft.)	N/S (+/-) (ft.)	E/W (+/-) (ft.)	Vertical Section (ft.)	Ax			Mx			Magnetic Dip Angle (°)		Mag Field [nT]		Gravity Total [g]	Temp (°F)	Mud Type	Survey Type	Survey #	Run #	Date & Time
								Ax	Ay	Az	Mx	My	Mz	Magnetic Dip Angle (°)	Mag Field [nT]	Magnetic Dip Angle (°)	Mag Field [nT]							
9062.00	55.93	181.71	2.32	8895.76	-455.59	262.46	455.59	-0.770940	0.301587	0.559951	45513	-15659	4524	60.62	48299	61.21	48343	0.99920	132.80	Water	MWD+HRGM+AX	110	6	10/17/18 17:11
9093.00	59.53	180.66	11.96	8912.31	-481.79	261.92	481.79	-0.736264	-0.448596	0.507204	39908	27161	1410	60.62	48285	61.08	48295	1.00007	132.80	Water	MWD+HRGM+AX	111	6	10/17/18 18:54
9125.00	62.65	180.03	9.90	8927.78	-509.80	261.75	509.80	-0.813919	0.354823	0.459341	45256	-16795	-1154	60.62	48298	61.11	48286	0.99946	132.80	Water	MWD+HRGM+AX	112	6	10/17/18 20:02
9156.00	64.87	179.67	7.24	8941.49	-537.60	261.83	537.60	0.562882	0.707937	0.424176	-27674	-39359	-2876	60.62	48236	61.27	48200	0.99875	132.80	Water	MWD+HRGM+AX	113	6	10/17/18 21:26
9188.00	67.50	178.39	9.00	8954.41	-566.87	262.32	566.87	-0.558974	-0.735287	0.382662	26282	40128	-5220	60.62	48290	61.02	48252	0.99954	134.60	Water	MWD+HRGM+AX	114	6	10/17/18 22:24
9219.00	71.15	178.03	11.82	8965.35	-595.85	262.23	595.85	-0.546428	-0.736264	0.323077	27015	39029	-8370	60.61	48235	60.85	48199	0.99980	134.60	Water	MWD+HRGM+AX	115	6	10/17/18 23:18
9251.00	75.48	178.68	13.67	8974.53	-626.49	264.11	626.49	-0.689377	-0.680098	0.250794	30861	35000	-12033	60.60	48222	60.75	48189	1.00012	134.60	Water	MWD+HRGM+AX	116	6	10/18/18 0:08
9282.00	81.19	179.11	14.67	8980.80	-656.83	264.69	656.83	-0.965324	-0.210745	0.153114	43425	12619	-16758	60.60	48229	60.61	48227	0.99963	134.60	Water	MWD+HRGM+AX	117	6	10/18/18 0:55
9314.00	83.98	179.09	8.72	8984.93	-688.55	265.19	688.55	-0.885714	0.451526	0.104762	40861	-17381	-18773	60.62	48276	60.81	48209	0.99945	134.60	Water	MWD+HRGM+AX	118	6	10/18/18 1:39
9345.00	85.50	178.61	5.14	8987.77	-719.42	265.81	719.42	-0.005128	0.996093	0.078388	3498	-43828	-19799	60.66	48337	60.96	48219	0.99897	132.80	Water	MWD+HRGM+AX	119	6	10/18/18 2:55
9376.00	86.65	178.51	3.72	8989.89	-750.33	266.59	750.33	0.235165	-0.969719	0.058364	-13425	41300	-20934	60.59	48218	60.61	48210	0.99931	134.60	Water	MWD+HRGM+AX	120	6	10/18/18 3:37
9408.00	88.08	178.62	4.48	8991.36	-782.29	267.39	782.29	0.855922	0.514042	0.033455	-35037	-24854	-21777	60.62	48278	60.89	48161	0.99876	134.60	Water	MWD+HRGM+AX	121	6	10/18/18 4:16
9439.00	88.11	178.52	0.34	8992.39	-813.26	268.16	813.26	0.440782	-0.896459	0.032967	-21850	36941	-21960	60.61	48252	60.70	48211	0.99929	134.60	Water	MWD+HRGM+AX	122	6	10/18/18 5:22
9471.00	88.33	178.84	1.21	8993.39	-845.24	268.90	845.24	-0.985348	-0.165324	0.029060	41593	10202	-22070	60.61	48255	60.78	48178	0.99932	134.60	Water	MWD+HRGM+AX	123	6	10/18/18 6:22
9534.00	88.50	178.33	0.85	8995.13	-908.19	270.45	908.19	-0.595604	-0.802198	0.026129	22692	36245	-22253	60.60	48243	60.68	48206	0.99925	134.60	Water	MWD+HRGM+AX	124	6	10/18/18 8:11
9599.00	88.66	177.42	1.42	8996.74	-973.13	272.86	973.13	0.870610	-0.490480	0.023440	-38940	17627	-22144	60.61	48253	60.86	48139	0.99932	132.80	Water	MWD+HRGM+AX	125	7	10/20/18 13:40
9693.00	88.54	178.39	1.04	8999.04	-1067.04	276.30	1067.04	-0.612300	-0.789550	0.025390	28809	-31665	-22119	60.64	48300	60.90	48186	0.99925	136.40	Water	MWD+HRGM+AX	126	7	10/20/18 15:43
9788.00	87.23	178.53	1.39	9002.54	-1161.93	278.85	1161.93	0.998050	0.008300	0.048340	-43115	-3662	-21118	60.62	48268	60.90	48149	0.99903	140.00	Water	MWD+HRGM+AX	127	7	10/20/18 17:54
9883.00	89.72	179.00	2.67	9005.07	-1256.87	280.90	1256.87	-0.973140	-0.229000	0.004880	-40356	12695	-23071	60.63	48284	60.83	48188	0.99951	127.40	Oil	MWD+HRGM+AX	128	8	10/21/18 12:22
9977.00	90.50	181.91	-3.20	9004.89	-1350.86	280.15	1350.86	0.966310	-0.255370	-0.008790	-40942	8838	-23779	60.61	48261	60.81	48164	0.99930	131.00	Oil	MWD+HRGM+AX	129	8	10/21/18 13:57
10071.00	91.09	182.20	-0.70	9003.59	-1444.79	276.78	1444.79	0.370120	-0.927980	-0.019040	-17065	37940	-24243	60.59	48235	60.77	48150	0.99903	132.80	Oil	MWD+HRGM+AX	130	8	10/21/18 16:00
10166.00	90.66	182.47	0.53	9002.14	-1539.70	272.91	1539.70	0.922360	0.385250	-0.011470	-37891	-17651	-23975	60.61	48252	60.74	48188	0.99943	134.60	Oil	MWD+HRGM+AX	131	8	10/21/18 18:25
10261.00	89.30	181.66	1.67	9002.17	-1634.63	269.49	1634.63	-0.636960	0.770260	0.012210	28565	-31372	-22900	60.64	48300	60.83	48214	0.99936	136.40	Oil	MWD+HRGM+AX	132	8	10/21/18 20:19
10355.00	88.26	180.48	1.67	9004.17	-1728.59	267.73	1728.59	0.972410	0.229980	0.030270	-41040	-12280	-22119	60.62	48279	60.78	48211	0.99947	138.20	Oil	MWD+HRGM+AX	133	8	10/22/18 3:49
10449.00	88.75	178.17	2.51	9006.62	-1822.55	268.84	1822.55	-0.875000	0.482420	0.021730	38940	-17529	-22388	60.62	48273	60.75	48216	0.99919	138.20	Oil	MWD+HRGM+AX	134	8	10/22/18 5:51
10544.00	89.52	179.35	1.48	9008.06	-1917.51	270.89	1917.51	-0.441410	-0.896730	0.008300	15991	39209	-22974	60.61	48257	60.79	48175	0.99930	138.20	Oil	MWD+HRGM+AX	135	8	10/22/18 8:28
10639.00	90.63	180.01	1.36	9007.93	-2012.51	271.42	2012.51	0.862310	-0.504880	-0.010990	-37402	18774	-23852	60.60	48238	60.74	48169	0.99908	141.80	Oil	MWD+HRGM+AX	136	8	10/22/18 11:25
10733.00	91.30	178.46	1.80	9006.35	-2106.48	272.68	2106.48	-0.255610	0.965820	-0.022700	13843	-39282	-24341	60.62	48269	60.67	48241	0.99911	143.60	Oil	MWD+HRGM+AX	137	8	10/22/18 14:37
10828.00	90.46	179.13	1.13	9004.89	-2201.45	274.68	2201.45	0.970950	-0.236820	-0.008060	-41431	6958	-23633	60.64	48296	60.83	48202	0.99923	132.80	Oil	MWD+HRGM+AX	138	9	10/23/18 7:40
10922.00	88.70	179.44	1.90	9005.58	-2295.44	275.85	2295.44	-0.999270	0.019530	0.022710	42651	2100	-22412	60.63	48286	60.76	48227	0.99950	138.20	Oil	MWD+HRGM+AX	139	9	10/23/18 13:51
11017.00	86.81	178.92	2.06	9009.30	-2390.35	277.21	2390.35	0.821050	-0.567140	0.055660	-37378	21997	-20923	60.59	48228	60.77	48153	0.99921	134.60	Oil	MWD+HRGM+AX	140	10	10/24/18 9:34
11134.00	83.22	178.68	3.08	9019.47	-2506.86	279.65	2506.86	0.992190	0.001710	0.117920	-44482	-3320	-18237	60.60	48226	60.70	48190	0.99895	131.00	Oil	MWD+HRGM+AX	141	11	10/25/18 8:52
11229.00	85.45	180.03	2.74	9028.84	-2601.38	280.71	2601.38	-0.000490	0.996090	0.079350	-2710	-43726	-19995	60.58	48207	60.71	48157	0.99903	140.00	Oil	MWD+HRGM+AX	142	11	10/25/18 12:23
11324.00	88.63	179.39	3.41	9033.75	-2696.24	281.19	2696.24	-0.836180	-0.547850	0.023930	33960	25781	-22436	60.58	48203	60.63	48180	0.99973	147.20	Oil	MWD+HRGM+AX	143	11	10/25/18 15:04
11418.00	88.77	179.17	0.28	9035.88	-2790.21	282.37	2790.21	0.255130	0.966060	0.021480	-7910	-41870	-22485	60.59	48222	60.68	48179	0.99919	149.00	Oil	MWD+HRGM+AX	144	11	10/25/18 20:02
11513.00	89.87	180.04	1.48	9037.01	-2885.20	283.03	2885.20	-0.146970	0.988770	0.002200	8838	-41186	-23364	60.57	48205	60.65	48169	0.99942	154.40	Oil	MWD+HRGM+AX	145	11	10/26/18 1:57
11607.00	93.30	181.35	3.91	9034.41	-2979.14	281.89	2979.14	-0.333500	0.940430	-0.057620	15601	-37573	-25879	60.61	48266	60.71	48217	0.99926	156.20	Oil	MWD+HRGM+AX	146	11	10/26/18 7:42
11702.00	93.18	181.56	0.25	9029.04	-3073.96	279.48	3073.96	0.846440	-0.528560	-0.055420	-35522	19751	-25879	60.56	48189	60.57	48183	0.99923	158.00	Oil	MWD+HRGM+AX	147	11	10/26/18 11:44
11796.00	91.95	182.46	1.62	9024.83	-3167.80	276.19	3167.80	0.998540	0.025390	-0.039400	-41113	-2734	-24976	60.58	48214	60.64	48183	0.99922	159.80	Oil	MWD+HRGM+AX	148	11	10/26/18 17:

DIRECTIONAL SURVEY REPORT



Report Date: 11/14/2018	Job Start Date: 9/29/2018	Time Zone: GMT-06:00	North Reference: GridNorth
Operator: Chisholm Energy	Map System: US State Plane 1983	Reference Datum: RotaryTable	Vertical Section Az (deg): 180
Well Name: Diamondback 24 Federal 185 3H	Map Ellipsoid: GRS 1980	Survey Calc. Method: Minimum Curvature	Magnetic Model: HOGM
Rig: JDC 7	Map Datum: North American Datum 1983	Ground Elevation (ft.): 3620	Calc. Date: 9/24/2018
Job Number: F00318DRPM188	Map Zone: New Mexico Eastern Zone	RSS Above NGA (ft.): 31	Field Strength (nT): 48377.8
State: NM	Well Latitude: 32° 39' 10.044" N	Non Mag Above (ft.): 0	Dip Angle (deg): 60.62
County: Lea County	Well Longitude: 103° 42' 48.24" W	Non Mag Below (ft.): 0	Mag. Declination (deg): 6.88
Field: Lea Co. NM	Well Northings: Well Eastings:		Grid Convergence (deg): 0.33
Survey Correction Co.: Gyrodata Inc.			Total Correction (deg): 6.55

								Accelerometer (g)			Magnetometer (nT)			Corrected Survey QC		Raw Survey QC								
Depth (ft.)	Inclination (°)	Azimuth (°)	DLS (°/200)	TVD (ft.)	N/S (N/-)	E/W (E/-)	Vertical Section (ft.)	Ax	Ay	Az	Mx	My	Mz	Magnetic Dip Angle (°)	Mag Field (nT)	Magnetic Dip Angle (°)	Mag Field (nT)	Gravity Total (g)	Temp (°F)	Mud Type	Survey Type	Survey #	Run #	Date & Time
13404.00	84.86	178.87	2.39	9035.25	-4774.38	308.21	4774.38	0.505860	-0.857420	0.089600	-25049	36231	-19629	60.59	48213	60.56	48223	0.99933	156.20	Oil	MWD+HRGM+AX	165	13	10/30/18 3:06
13499.00	85.63	179.23	0.89	9043.13	-4869.04	309.78	4869.04	0.902340	-0.422610	0.076170	-40845	15796	-20215	60.60	48234	60.60	48234	0.99909	156.20	Oil	MWD+HRGM+AX	166	13	10/30/18 5:22
13593.00	87.80	179.22	2.31	9048.51	-4962.87	311.05	4962.87	-0.030270	0.998290	0.038330	4321	-42798	-21802	60.61	48251	60.67	48225	0.99926	158.00	Oil	MWD+HRGM+AX	167	13	10/30/18 8:17
13688.00	87.83	180.80	1.66	9052.14	-5057.80	311.04	5057.80	-0.700190	0.712400	0.037840	31738	-28906	-21924	60.59	48217	60.62	48203	0.99939	158.00	Oil	MWD+HRGM+AX	168	13	10/30/18 12:16
13782.00	86.16	180.69	1.78	9057.06	-5151.66	309.82	5151.66	-0.529540	0.845220	0.066900	25122	-35547	-20654	60.58	48196	60.62	48180	0.99942	159.80	Oil	MWD+HRGM+AX	169	13	10/30/18 15:59
13877.00	86.64	180.34	0.62	9063.03	-5246.47	308.96	5246.47	-0.077390	0.995360	0.058590	806	43408	-21020	60.60	48245	60.62	48236	0.99986	161.60	Oil	MWD+HRGM+AX	170	13	10/30/18 17:55
13971.00	88.22	180.46	1.69	9067.24	-5340.37	308.31	5340.37	0.736330	0.675050	0.031010	-29785	-30713	-22192	60.58	48215	60.63	48197	0.99920	161.60	Oil	MWD+HRGM+AX	171	13	10/30/18 20:18
14066.00	90.15	180.14	2.06	9068.59	-5435.35	307.81	5435.35	-0.596920	0.801760	-0.002690	27197	-32105	-23560	60.62	48266	60.71	48223	0.99935	161.60	Oil	MWD+HRGM+AX	172	13	10/30/18 22:45
14160.00	87.80	181.65	2.97	9070.28	-5529.32	306.34	5529.32	0.954590	-0.292970	0.038330	-41577	10645	-22021	60.58	48212	60.52	48238	0.99905	159.80	Oil	MWD+HRGM+AX	173	13	10/31/18 2:41
14255.00	88.94	182.09	1.29	9072.98	-5624.23	303.24	5624.23	0.971920	-0.232910	0.018550	-41724	8106	-22778	60.60	48246	60.65	48223	0.99939	161.60	Oil	MWD+HRGM+AX	174	13	10/31/18 5:01
14349.00	88.59	180.78	1.44	9075.00	-5718.17	300.89	5718.17	0.301030	-0.952640	0.024660	-15112	39917	-22534	60.61	48257	60.59	48265	0.99915	161.60	Oil	MWD+HRGM+AX	175	13	10/31/18 9:00
14444.00	87.27	180.29	1.48	9078.44	-5813.10	300.00	5813.10	0.998290	0.020510	0.047610	-43018	-3467	-21484	60.59	48221	60.62	48209	0.99942	161.60	Oil	MWD+HRGM+AX	176	13	10/31/18 12:03
14538.00	88.12	179.66	1.13	9082.22	-5907.03	300.05	5907.03	-0.927980	0.370610	0.032720	40796	-13232	-22046	60.61	48258	60.69	48223	0.99956	161.60	Oil	MWD+HRGM+AX	177	13	10/31/18 13:41
14633.00	87.06	180.07	1.20	9086.21	-6001.94	300.27	6001.94	-0.288570	-0.956050	0.051270	9912	42090	-21362	60.59	48222	60.57	48230	0.99975	158.00	Oil	MWD+HRGM+AX	178	13	10/31/18 17:55
14727.00	87.68	180.41	0.75	9090.52	-6095.84	299.88	6095.84	0.998540	-0.028810	0.040530	-43018	-1294	-21777	60.61	48254	60.66	48233	0.99956	159.80	Oil	MWD+HRGM+AX	179	13	10/31/18 19:54
14822.00	90.49	180.24	2.96	9092.04	-6190.82	299.34	6190.82	0.041750	-0.998530	-0.008540	-4346	41675	-23877	60.60	48237	60.62	48227	0.99922	159.80	Oil	MWD+HRGM+AX	180	13	10/31/18 21:33
14916.00	87.82	179.64	2.91	9093.43	-6284.80	299.44	6284.80	0.992190	-0.115480	0.038090	-42895	2124	-21948	60.58	48205	60.52	48231	0.99939	158.00	Oil	MWD+HRGM+AX	181	13	11/1/18 1:04
15011.00	88.57	179.04	1.01	9096.42	-6379.74	300.53	6379.74	-0.733400	0.678470	0.024900	33374	-26660	-22388	60.60	48243	60.64	48227	0.99919	159.80	Oil	MWD+HRGM+AX	182	13	11/1/18 2:51
15106.00	89.09	178.34	0.92	9098.36	-6474.70	302.70	6474.70	-0.414060	-0.909670	0.015870	14477	39966	-22827	60.59	48221	60.53	48249	0.99938	159.80	Oil	MWD+HRGM+AX	183	13	11/1/18 5:33
15200.00	90.01	178.34	0.98	9099.10	-6568.65	305.42	6568.65	0.125730	-0.991450	-0.000240	-8643	41284	-23437	60.61	48260	60.62	48253	0.99917	159.80	Oil	MWD+HRGM+AX	184	13	11/1/18 7:22
15294.00	89.97	176.79	1.65	9099.11	-6662.57	309.42	6662.57	-0.963130	-0.268550	0.000490	39429	15161	-23315	60.61	48252	60.61	48250	0.99965	161.60	Oil	MWD+HRGM+AX	185	13	11/1/18 8:58
15389.00	88.88	177.28	1.26	9100.07	-6757.43	314.33	6757.43	-0.028810	-0.999270	0.019530	-2588	42578	-22559	60.60	48249	60.59	48254	0.99966	158.00	Oil	MWD+HRGM+AX	186	13	11/1/18 18:09
15483.00	88.96	180.34	3.26	9101.84	-6851.38	316.28	6851.38	0.951420	-0.304690	0.018070	-41186	10498	-22778	60.59	48222	60.59	48222	0.99896	159.80	Oil	MWD+HRGM+AX	187	13	11/1/18 21:42
15578.00	89.64	179.15	1.44	9103.00	-6946.37	316.70	6946.37	-0.066160	0.997070	0.006350	5835	-41870	-23169	60.59	48231	60.64	48207	0.99906	159.80	Oil	MWD+HRGM+AX	188	13	11/1/18 23:25
15673.00	92.44	179.29	2.95	9101.28	-7041.34	318.00	7041.34	0.818850	-0.571290	-0.042480	-35327	20996	-25244	60.59	48238	60.61	48230	0.99913	161.60	Oil	MWD+HRGM+AX	189	13	11/2/18 1:08
15767.00	89.86	177.92	3.11	9099.39	-7135.28	320.29	7135.28	-0.147950	-0.988520	0.002440	2710	42114	-23364	60.58	48212	60.53	48237	0.99931	159.80	Oil	MWD+HRGM+AX	190	13	11/2/18 5:31
15862.00	89.45	179.28	1.50	9099.96	-7230.25	322.61	7230.25	-0.978520	0.205080	0.009520	41992	-5737	-23071	60.61	48264	60.63	48255	0.99960	159.80	Oil	MWD+HRGM+AX	191	13	11/2/18 10:55
15956.00	87.59	180.95	2.66	9102.39	-7324.21	322.42	7324.21	-0.925540	-0.376220	0.041990	38965	18335	-21802	60.61	48259	60.59	48268	0.99974	161.60	Oil	MWD+HRGM+AX	192	13	11/2/18 15:16
16051.00	87.37	182.51	1.66	9106.57	-7419.07	319.55	7419.07	0.996340	-0.063480	0.045900	-43066	1074	-21680	60.59	48221	60.58	48227	0.99919	161.60	Oil	MWD+HRGM+AX	193	13	11/2/18 18:36
16145.00	88.47	181.43	1.64	9109.98	-7512.95	316.33	7512.95	0.989750	-0.135990	0.026610	-42529	3711	-22461	60.60	48238	60.60	48239	0.99918	161.60	Oil	MWD+HRGM+AX	194	13	11/2/18 20:33
16240.00	87.76	181.91	0.90	9113.10	-7607.86	313.56	7607.86	-0.410160	-0.911130	0.039060	15869	-39917	-21973	60.60	48236	60.57	48249	0.99974	161.60	Oil	MWD+HRGM+AX	195	13	11/3/18 0:03
16334.00	89.23	181.61	1.60	9115.57	-7701.78	310.67	7701.78	-0.989260	0.143310	0.013430	42212	-4053	-22998	60.61	48255	60.64	48241	0.99946	163.40	Oil	MWD+HRGM+AX	196	13	11/3/18 2:08
16429.00	88.50	181.95	0.85	9117.45	-7796.72	307.72	7796.72	-0.062010	0.997070	0.026120	4541	-42407	-22510	60.59	48220	60.58	48225	0.99912	161.60	Oil	MWD+HRGM+AX	197	13	11/3/18 5:30
16523.00	87.47	181.32	1.28	9120.76	-7890.62	305.04	7890.62	0.595950	-0.800780	0.044190	-27417	33228	-21728	60.60	48236	60.57	48248	0.99896	159.80	Oil	MWD+HRGM+AX	198	13	11/3/18 11:01
16618.00	88.28	181.06	0.90	9124.28	-7985.53	303.07	7985.53	-0.819820	0.571050	0.030030	36353	-22559	-22266	60.60	48246	60.64	48231	0.99933	161.60	Oil	MWD+HRGM+AX	199	13	11/3/18 12:36
16713.00	90.27	180.83	2.11	9125.48	-8080.51	301.50	8080.51	-0.902100	0.430420	-0.004640	38843	-15918	-23755	60.59	48236	60.60	48233	0.99931	163.40	Oil	MWD+HRGM+AX	200	13	11/3/18 14:08
16807.00	88.71	180.00	1.88	9126.32	-8174.50	300.82	8174.50	0.772710	-0.633300	0.022460	-34619	24878	-22607	60.60	48240	60.57	48254	0.99911	163.40	Oil	MWD+HRGM+AX	201	13	11/3/18 17:49
16901.00	89.89	178.57	1.97	9127.47	-8268.48	302.00	8268.48	0.478760	-0.877440	0.001950	-17261	-38501	-23364	60.59	48234	60.60	48230	0.99934	163.40	Oil	MWD+HRGM+AX	202	13	11/3/18 19:36
16996.00	88.99	179.68	1.50	9128.40	-8363.46	303.45	8363.46	-0.838620	0.543460	0.017580	37158	-20703	-22754	60.60	48247	60.62	48240	0.99925	161.60	Oil	MWD+HRGM+AX	203	13	11/3/18 23:24
17090.00	90.31																							

DIRECTIONAL SURVEY REPORT



Report Date: 11/14/2018	Job Start Date: 9/29/2018	Time Zone: GMT -06:00	North Reference: GridNorth
Operator: Chisholm Energy	Map System: US State Plane 1983	Reference Datum: RotaryTable	Vertical Section Az (deg): 180
Well Name: Diamondback 24 Federal 185 3H	Map Ellipsoid: GRS 1980	Survey Calc. Method: Minimum Curvature	Magnetic Model: HDGM4
Rig: JDC 7	Map Datum: North American Datum 1983	Ground Elevation (ft.): 3620	Calc. Date: 9/24/2018
Job Number: FD0918DRPM188	Map Zone: New Mexico Eastern Zone	RKD Above MSL (ft.): 31	Field Strength (nT): 48272.8
State: NM	Well Latitude: 32° 39' 10.044" N	Non Mag Above (ft.): 0	Dip Angle (deg): 60.62
County: Lea County	Well Longitude: 103° 42' 48.24" W	Non Mag Below (ft.): 0	Mag. Declination (deg): 6.88
Field: Lea Co. NM	Well Northings:		Grid Convergence (deg): 0.33
Survey Correction Co.: Gyrodata Inc.	Well Eastings:		Total Correction (deg): 6.55

Depth (ft.)	Inclination (°)	Azimuth (°)	DLS (°/100)	TVD (ft.)	N/S (°/-) (ft.)	E/W (°/-) (ft.)	Vertical Section (ft.)	Accelerometer (g)			Magnetometer (nT)			Corrected Survey QC		Raw Survey QC			Temp (°F)	Mud Type	Survey Type	Survey #	Run #	Date & Time
								Ax	Ay	Az	Mx	My	Mz	Magnetic Dip Angle (°)	Mag Field (nT)	Magnetic Dip Angle (°)	Mag Field (nT)	Gravity Total (g)						
18602.00	90.88	179.00	0.84	9155.31	-9968.29	319.81	9968.29	-0.978520	0.204350	-0.015380	41406	-5469	-23755	60.59	48231	60.97	48049	0.99953	154.40	Oil	MWD+HRGM+AX	220	14	11/7/18 17:00
18697.00	91.22	178.92	0.37	9153.57	-10063.25	321.54	10063.25	-0.998530	-0.038330	-0.021240	41382	4736	-23950	60.61	48253	61.02	48047	0.99927	156.20	Oil	MWD+HRGM+AX	221	14	11/7/18 19:00
18791.00	90.50	179.85	1.25	9152.16	-10157.24	322.55	10157.24	-0.997310	-0.068360	-0.008790	41528	5615	-23511	60.60	48237	60.98	48051	0.99947	158.00	Oil	MWD+HRGM+AX	222	14	11/8/18 0:10
18886.00	90.90	180.22	0.57	9150.99	-10252.23	322.49	10252.23	0.413090	-0.909910	-0.015620	-19604	36865	-23779	60.61	48256	61.03	48050	0.99919	158.00	Oil	MWD+HRGM+AX	223	14	11/8/18 1:35
18936.00	91.83	180.13	1.87	9149.80	-10302.21	322.33	10302.21	-0.983890	-0.174560	-0.031980	40161	9815	-24487	60.60	48246	60.99	48051	0.99955	158.00	Oil	MWD+HRGM+AX	224	14	11/8/18 2:58
19000.00	91.83	180.13	0.00	9147.76	-10366.18	322.19	10366.18	Projection To Bit																