

COG

BASEBALL CAP FEDERAL COM #603H

NABORS #893

7/18/2019

This survey is correct to the best of my knowledge and is supported by actual field data.

JAKE ELGER

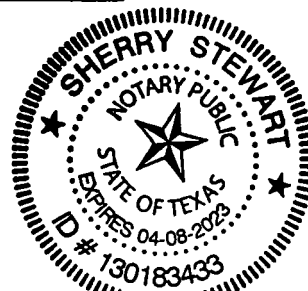
Notarized this date 05 of AUGUST, 2019.

Sherry Stewart

Notary Signature

County of Midland

State of Texas



Scientific Drilling

The [redacted] In Wellbore Placement

SURVEY REPORT

BASEBALL CAP FEDERAL COM #603H

COMPUTED KEEPER GYRO WIRELINE SURV

CUSTOMER COG
PROJECT Baseball Cap Federal Com #603H
FIELD Baseball Cap Federal Com #603H

SDI JOB NO. OP.019898
SDI DISTRICT Midland
SDI KIT/UNIT

SITE INFORMATION

Site Name Baseball Cap Federal Com #603H
Lat/Long 32.182179° N, 103.422637° W
Northing 431,204.1 ft
Easting 823,088.2 ft

Section
Township
Range

MAP INFORMATION

North Reference Grid North
Grid Correction -0.49 deg
System US State Plane 1983
Datum North American Datum 1983 (GRS 1980)
Map Zone New Mexico East: 3001

**WELL INFORMATION**

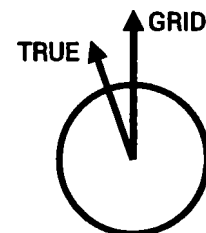
Lat/Long 32.182179° N, 103.422637° W
Northing 431,204.1 ft
Easting 823,088.2 ft
UWI 30-025-45784

DEPTH AND ELEVATION REFERENCE

Ground Level 3387.7 ft above Mean Sea
Level
Reference Datum RKB
Reference Height 27 ft above G.L.
Reference Elevation 3414.7 ft

VERTICAL SECTION REFERENCE

+N/-S 0 ft
+E/-W 0 ft
Proposal Direction 1.98°
Calculation Method Minimum Curvature

**LOCAL GRAVITY REFERENCE INFORMATION**

Local Gravity 998.498 mG [computed]
True to Grid subtract 0.49°

WELL NOTES**OPERATORS**

Nathan Yerby

SDI Operator Name (Printed)

SIGNATURE

DATE

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid	0.00	0.00
100.00	0.11	232.44	100.00	-0.06	-0.06	-0.07	0.11	0.09	232.44
125.00	0.25	219.53	125.00	-0.12	-0.11	-0.13	0.57	0.17	228.40
150.00	0.43	208.76	150.00	-0.24	-0.24	-0.21	0.77	0.31	221.12
175.00	0.29	218.03	175.00	-0.38	-0.37	-0.29	0.59	0.47	218.25
200.00	0.29	218.92	200.00	-0.48	-0.47	-0.37	0.03	0.60	218.30
225.00	0.24	206.72	225.00	-0.58	-0.56	-0.43	0.30	0.71	217.51
250.00	0.26	196.95	250.00	-0.68	-0.66	-0.47	0.18	0.82	215.44
275.00	0.20	201.10	275.00	-0.78	-0.76	-0.50	0.24	0.91	213.65
300.00	0.30	219.29	300.00	-0.87	-0.85	-0.56	0.51	1.02	213.48
325.00	0.36	208.43	325.00	-0.99	-0.97	-0.64	0.33	1.16	213.47
350.00	0.46	208.85	350.00	-1.15	-1.12	-0.73	0.40	1.34	212.84
375.00	0.46	217.47	375.00	-1.32	-1.29	-0.84	0.28	1.54	212.88
400.00	0.60	220.94	399.99	-1.50	-1.47	-0.98	0.56	1.77	213.74
425.00	0.86	217.79	424.99	-1.76	-1.72	-1.18	1.03	2.08	214.55
450.00	1.05	217.95	449.99	-2.09	-2.05	-1.44	0.78	2.50	215.10
475.00	1.27	216.77	474.98	-2.51	-2.45	-1.74	0.86	3.00	215.47
500.00	1.47	215.77	499.98	-3.00	-2.93	-2.10	0.81	3.60	215.60
525.00	1.73	214.50	524.97	-3.58	-3.50	-2.50	1.06	4.30	215.52
550.00	1.85	214.10	549.95	-4.24	-4.14	-2.94	0.48	5.08	215.33
575.00	1.87	213.73	574.94	-4.93	-4.82	-3.39	0.10	5.89	215.13
600.00	1.87	214.88	599.93	-5.62	-5.49	-3.85	0.15	6.71	215.03
625.00	1.91	215.38	624.91	-6.31	-6.17	-4.32	0.19	7.53	215.04
650.00	1.93	214.56	649.90	-7.01	-6.85	-4.80	0.12	8.37	215.04
675.00	1.97	212.51	674.89	-7.74	-7.56	-5.27	0.32	9.22	214.90
700.00	1.96	212.90	699.87	-8.47	-8.28	-5.74	0.06	10.07	214.71
725.00	1.95	214.67	724.86	-9.20	-8.99	-6.21	0.25	10.93	214.64
750.00	1.94	211.93	749.84	-9.92	-9.70	-6.68	0.37	11.77	214.54
775.00	1.88	210.26	774.83	-10.65	-10.41	-7.11	0.32	12.60	214.32
800.00	1.89	209.24	799.82	-11.38	-11.12	-7.51	0.14	13.42	214.04
825.00	1.91	209.20	824.80	-12.11	-11.85	-7.92	0.08	14.25	213.76
850.00	1.83	209.21	849.79	-12.84	-12.56	-8.32	0.29	15.06	213.51

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
875.00	1.73	206.12	874.78	-13.54	-13.25	-8.68	0.56	15.84	213.23
900.00	1.55	200.01	899.77	-14.21	-13.90	-8.96	1.00	16.54	212.80
925.00	1.31	200.37	924.76	-14.80	-14.49	-9.18	0.95	17.15	212.34
950.00	1.19	194.56	949.75	-15.33	-15.01	-9.34	0.72	17.68	211.89
975.00	1.12	191.34	974.75	-15.82	-15.50	-9.45	0.37	18.16	211.38
1000.00	1.06	188.61	999.74	-16.29	-15.97	-9.54	0.32	18.60	210.84
1025.00	0.98	188.35	1024.74	-16.73	-16.41	-9.60	0.31	19.01	210.33
1050.00	0.94	185.53	1049.74	-17.15	-16.83	-9.65	0.25	19.40	209.84
1075.00	0.91	183.62	1074.73	-17.55	-17.23	-9.68	0.17	19.76	209.34
1100.00	0.90	180.96	1099.73	-17.95	-17.62	-9.70	0.17	20.12	208.83
1125.00	0.92	181.83	1124.73	-18.34	-18.02	-9.71	0.07	20.47	208.32
1150.00	0.95	180.60	1149.72	-18.75	-18.43	-9.72	0.14	20.83	207.81
1175.00	0.95	180.07	1174.72	-19.16	-18.84	-9.72	0.04	21.20	207.29
1200.00	1.03	180.91	1199.72	-19.60	-19.27	-9.73	0.35	21.59	206.78
1225.00	1.08	181.28	1224.71	-20.06	-19.73	-9.73	0.17	22.00	206.26
1250.00	1.06	176.67	1249.71	-20.52	-20.20	-9.73	0.35	22.42	205.71
1275.00	1.09	178.07	1274.70	-20.99	-20.66	-9.70	0.15	22.83	205.16
1300.00	1.12	174.83	1299.70	-21.47	-21.15	-9.67	0.28	23.25	204.58
1325.00	1.08	172.07	1324.69	-21.94	-21.62	-9.62	0.27	23.66	203.99
1350.00	1.32	153.87	1349.69	-22.43	-22.11	-9.46	1.81	24.05	203.16
1375.00	1.86	135.78	1374.68	-22.96	-22.66	-9.05	2.90	24.40	201.77
1400.00	2.20	131.83	1399.66	-23.55	-23.27	-8.41	1.50	24.75	199.87
1425.00	2.28	131.09	1424.64	-24.17	-23.92	-7.68	0.32	25.12	197.79
1450.00	3.22	120.22	1449.61	-24.82	-24.60	-6.70	4.30	25.50	195.22
1475.00	3.66	116.62	1474.57	-25.48	-25.31	-5.37	1.94	25.88	191.99
1500.00	3.71	116.09	1499.52	-26.15	-26.03	-3.94	0.23	26.32	188.60
1525.00	3.64	116.35	1524.47	-26.80	-26.73	-2.50	0.28	26.85	185.34
1550.00	3.63	116.43	1549.42	-27.46	-27.44	-1.08	0.05	27.46	182.26
1575.00	3.66	115.79	1574.37	-28.11	-28.14	0.35	0.21	28.14	179.30
1600.00	3.59	115.41	1599.32	-28.74	-28.82	1.77	0.28	28.87	176.48
1625.00	3.51	115.67	1624.27	-29.36	-29.49	3.17	0.33	29.66	173.87
1650.00	3.51	114.15	1649.22	-29.96	-30.13	4.56	0.37	30.47	171.40

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
1675.00	3.54	114.48	1674.17	-30.54	-30.76	5.96	0.13	31.34	169.04
1700.00	3.50	115.80	1699.13	-31.14	-31.42	7.35	0.36	32.26	166.84
1725.00	3.46	115.80	1724.08	-31.76	-32.08	8.72	0.15	33.24	164.80
1750.00	3.36	116.73	1749.04	-32.37	-32.73	10.05	0.48	34.24	162.94
1775.00	3.01	122.27	1774.00	-33.01	-33.41	11.26	1.85	35.26	161.38
1800.00	2.69	122.37	1798.97	-33.63	-34.08	12.31	1.27	36.23	160.14
1825.00	2.54	124.71	1823.94	-34.23	-34.71	13.26	0.76	37.16	159.09
1850.00	2.13	121.84	1848.92	-34.76	-35.27	14.11	1.69	37.99	158.20
1875.00	1.38	121.55	1873.91	-35.14	-35.67	14.76	3.01	38.60	157.52
1900.00	0.92	114.37	1898.90	-35.37	-35.91	15.20	1.89	39.00	157.06
1925.00	0.90	112.68	1923.90	-35.51	-36.07	15.56	0.15	39.29	156.66
1950.00	0.86	113.19	1948.90	-35.65	-36.22	15.92	0.16	39.56	156.28
1975.00	0.87	114.02	1973.89	-35.79	-36.37	16.26	0.05	39.84	155.91
2000.00	0.85	109.68	1998.89	-35.91	-36.51	16.61	0.27	40.11	155.54
2025.00	0.85	114.28	2023.89	-36.04	-36.65	16.95	0.27	40.38	155.18
2050.00	0.83	108.86	2048.89	-36.16	-36.78	17.29	0.33	40.65	154.82
2075.00	0.86	105.10	2073.88	-36.26	-36.89	17.64	0.27	40.89	154.44
2100.00	0.86	110.84	2098.88	-36.36	-37.01	18.00	0.35	41.15	154.06
2125.00	0.87	108.72	2123.88	-36.48	-37.13	18.36	0.13	41.42	153.69
2150.00	0.40	115.95	2148.88	-36.57	-37.23	18.62	1.88	41.63	153.44
2175.00	0.26	129.56	2173.87	-36.64	-37.31	18.74	0.66	41.75	153.33
2200.00	0.18	142.98	2198.87	-36.70	-37.37	18.80	0.36	41.84	153.29
2225.00	0.16	156.99	2223.87	-36.77	-37.44	18.84	0.18	41.91	153.28
2250.00	0.05	117.54	2248.87	-36.80	-37.48	18.87	0.51	41.96	153.28
2275.00	0.08	49.73	2273.87	-36.80	-37.47	18.89	0.30	41.96	153.25
2300.00	0.25	12.58	2298.87	-36.73	-37.41	18.91	0.77	41.92	153.18
2325.00	0.13	259.75	2323.87	-36.69	-37.36	18.90	1.27	41.87	153.17
2350.00	0.37	268.73	2348.87	-36.70	-37.37	18.79	1.00	41.83	153.30
2375.00	0.51	266.84	2373.87	-36.71	-37.38	18.60	0.55	41.75	153.55
2400.00	0.61	263.85	2398.87	-36.74	-37.40	18.35	0.41	41.66	153.86
2425.00	0.58	261.41	2423.87	-36.78	-37.43	18.10	0.16	41.57	154.20
2450.00	0.68	268.72	2448.87	-36.81	-37.45	17.82	0.52	41.48	154.55

SURVEY REPORT

SEBALL CAP FEDERAL COM #603H

COMPUTED KEEPER GYRO WIRELINE SURV

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
2475.00	0.62	276.30	2473.87	-36.81	-37.44	17.54	0.43	41.35	154.89
2500.00	0.60	281.37	2498.87	-36.78	-37.40	17.28	0.23	41.20	155.20
2525.00	0.55	279.85	2523.86	-36.74	-37.35	17.03	0.19	41.05	155.49
2550.00	0.45	275.55	2548.86	-36.72	-37.32	16.82	0.44	40.94	155.74
2575.00	0.48	272.68	2573.86	-36.71	-37.31	16.62	0.15	40.84	155.99
2600.00	0.44	262.90	2598.86	-36.73	-37.32	16.42	0.34	40.77	156.25
2625.00	0.57	269.89	2623.86	-36.75	-37.33	16.20	0.56	40.69	156.54
2650.00	0.60	262.42	2648.86	-36.77	-37.35	15.94	0.34	40.61	156.88
2675.00	0.58	267.16	2673.86	-36.81	-37.37	15.69	0.21	40.53	157.23
2700.00	0.62	277.17	2698.86	-36.80	-37.36	15.42	0.45	40.42	157.57
2725.00	0.53	277.74	2723.86	-36.78	-37.33	15.17	0.36	40.29	157.88
2750.00	0.51	281.54	2748.85	-36.75	-37.29	14.95	0.18	40.17	158.15
2775.00	0.48	275.16	2773.85	-36.73	-37.26	14.74	0.25	40.06	158.42
2800.00	0.47	259.74	2798.85	-36.74	-37.27	14.53	0.51	40.00	158.70
2825.00	0.46	260.44	2823.85	-36.78	-37.30	14.33	0.05	39.96	158.98
2850.00	0.61	260.76	2848.85	-36.83	-37.34	14.10	0.61	39.91	159.31
2875.00	0.55	268.30	2873.85	-36.86	-37.36	13.85	0.39	39.85	159.67
2900.00	0.55	272.62	2898.85	-36.87	-37.36	13.61	0.17	39.76	159.99
2925.00	0.52	275.25	2923.85	-36.86	-37.35	13.37	0.14	39.67	160.30
2950.00	0.46	272.67	2948.85	-36.85	-37.33	13.16	0.25	39.58	160.58
2975.00	0.43	269.44	2973.85	-36.86	-37.33	12.97	0.16	39.52	160.84
3000.00	0.37	261.69	2998.85	-36.88	-37.34	12.79	0.34	39.47	161.09
3025.00	0.45	258.42	3023.84	-36.91	-37.37	12.62	0.34	39.44	161.34
3050.00	0.51	262.57	3048.84	-36.95	-37.40	12.41	0.30	39.41	161.64
3075.00	0.44	275.43	3073.84	-36.97	-37.41	12.21	0.51	39.35	161.93
3100.00	0.43	276.69	3098.84	-36.95	-37.39	12.02	0.06	39.27	162.18
3125.00	0.43	287.74	3123.84	-36.92	-37.35	11.84	0.33	39.18	162.42
3150.00	0.33	291.45	3148.84	-36.87	-37.30	11.68	0.41	39.08	162.61
3175.00	0.29	292.82	3173.84	-36.82	-37.25	11.56	0.17	39.00	162.76
3200.00	0.37	285.73	3198.84	-36.78	-37.20	11.42	0.39	38.91	162.93
3225.00	0.49	344.38	3223.84	-36.66	-37.07	11.31	1.74	38.76	163.03
3250.00	1.06	358.74	3248.84	-36.33	-36.74	11.28	2.40	38.43	162.93

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	%/100ft	ft	deg
3275.00	1.50	5.94	3273.83	-35.77	-36.18	11.31	1.85	37.91	162.65
3300.00	1.68	9.97	3298.82	-35.08	-35.50	11.40	0.86	37.29	162.19
3325.00	1.62	12.25	3323.81	-34.37	-34.79	11.54	0.35	36.66	161.64
3350.00	1.56	10.89	3348.80	-33.69	-34.11	11.68	0.31	36.06	161.09
3375.00	1.76	11.75	3373.79	-32.97	-33.40	11.82	0.80	35.43	160.51
3400.00	1.70	15.22	3398.78	-32.24	-32.67	12.00	0.47	34.80	159.83
3425.00	1.72	20.46	3423.77	-31.52	-31.96	12.23	0.63	34.22	159.06
3450.00	1.73	20.53	3448.76	-30.81	-31.26	12.49	0.04	33.66	158.22
3475.00	1.80	17.90	3473.75	-30.07	-30.53	12.74	0.42	33.08	157.34
3500.00	1.83	22.03	3498.73	-29.32	-29.79	13.01	0.54	32.51	156.40
3525.00	1.91	26.09	3523.72	-28.56	-29.04	13.35	0.63	31.96	155.32
3550.00	1.83	26.07	3548.71	-27.82	-28.31	13.71	0.33	31.45	154.16
3575.00	1.84	27.59	3573.69	-27.09	-27.59	14.07	0.20	30.97	152.99
3600.00	1.79	26.28	3598.68	-26.37	-26.89	14.43	0.26	30.51	151.79
3625.00	1.79	27.84	3623.67	-25.67	-26.19	14.78	0.20	30.08	150.56
3650.00	1.81	31.41	3648.66	-24.97	-25.51	15.17	0.45	29.68	149.26
3675.00	1.86	31.49	3673.64	-24.27	-24.83	15.59	0.20	29.32	147.88
3700.00	1.88	28.39	3698.63	-23.55	-24.12	15.99	0.41	28.94	146.45
3725.00	1.99	30.67	3723.62	-22.81	-23.39	16.41	0.54	28.57	144.94
3750.00	1.90	32.17	3748.60	-22.07	-22.66	16.85	0.43	28.24	143.36
3775.00	1.89	32.09	3773.59	-21.35	-21.96	17.29	0.02	27.95	141.78
3800.00	1.88	30.36	3798.57	-20.63	-21.26	17.72	0.23	27.68	140.19
3825.00	2.02	30.76	3823.56	-19.89	-20.53	18.15	0.58	27.40	138.51
3850.00	1.94	33.77	3848.54	-19.14	-19.79	18.61	0.53	27.17	136.76
3875.00	1.84	35.57	3873.53	-18.45	-19.12	19.08	0.48	27.01	135.05
3900.00	1.78	35.63	3898.52	-17.79	-18.47	19.54	0.22	26.89	133.39
3925.00	1.85	35.94	3923.51	-17.13	-17.83	20.01	0.29	26.80	131.71
3950.00	1.93	39.38	3948.49	-16.46	-17.18	20.51	0.54	26.75	129.95
3975.00	1.79	38.21	3973.48	-15.81	-16.55	21.02	0.57	26.75	128.21
4000.00	1.81	39.89	3998.47	-15.18	-15.94	21.51	0.23	26.77	126.53
4025.00	1.90	37.99	4023.45	-14.54	-15.31	22.02	0.43	26.82	124.80
4050.00	1.85	39.89	4048.44	-13.88	-14.67	22.54	0.31	26.89	123.06

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
4075.00	1.80	42.29	4073.43	-13.26	-14.07	23.06	0.37	27.01	121.38
4100.00	1.82	39.79	4098.42	-12.65	-13.47	23.58	0.33	27.16	119.74
4125.00	1.72	41.22	4123.40	-12.04	-12.88	24.08	0.44	27.31	118.14
4150.00	1.71	39.41	4148.39	-11.46	-12.31	24.57	0.22	27.48	116.62
4175.00	1.82	40.22	4173.38	-10.85	-11.72	25.06	0.46	27.67	115.07
4200.00	1.78	41.38	4198.37	-10.24	-11.13	25.57	0.21	27.89	113.51
4225.00	1.67	39.86	4223.36	-9.65	-10.55	26.06	0.47	28.12	112.05
4250.00	1.81	39.42	4248.34	-9.05	-9.97	26.55	0.56	28.36	110.58
4275.00	1.72	38.27	4273.33	-8.43	-9.37	27.03	0.38	28.61	109.11
4300.00	1.71	36.28	4298.32	-7.82	-8.77	27.49	0.25	28.85	107.70
4325.00	1.65	41.06	4323.31	-7.23	-8.20	27.94	0.62	29.12	106.36
4350.00	1.40	39.07	4348.30	-6.71	-7.69	28.37	1.01	29.40	105.17
4375.00	1.41	37.29	4373.29	-6.21	-7.21	28.75	0.18	29.64	104.08
4400.00	1.41	38.80	4398.29	-5.72	-6.73	29.13	0.15	29.90	103.01
4425.00	1.38	41.99	4423.28	-5.24	-6.27	29.52	0.34	30.18	101.98
4450.00	1.38	38.26	4448.27	-4.77	-5.81	29.91	0.36	30.47	100.99
4475.00	1.52	39.36	4473.26	-4.26	-5.31	30.30	0.56	30.77	99.95
4500.00	1.49	48.33	4498.26	-3.78	-4.84	30.76	0.94	31.14	98.95
4525.00	1.60	68.19	4523.25	-3.41	-4.50	31.32	2.17	31.65	98.17
4550.00	2.20	80.06	4548.23	-3.17	-4.28	32.12	2.85	32.40	97.60
4575.00	2.29	84.97	4573.21	-3.01	-4.16	33.09	0.86	33.35	97.16
4600.00	2.21	88.55	4598.19	-2.92	-4.10	34.07	0.67	34.32	96.86
4625.00	2.23	87.63	4623.18	-2.86	-4.07	35.04	0.17	35.27	96.62
4650.00	2.43	89.27	4648.16	-2.79	-4.04	36.05	0.85	36.28	96.40
4675.00	2.68	92.89	4673.13	-2.78	-4.06	37.17	1.20	37.39	96.24
4700.00	2.88	98.35	4698.10	-2.86	-4.19	38.37	1.32	38.60	96.23
4725.00	3.04	99.63	4723.07	-3.02	-4.39	39.65	0.70	39.89	96.32
4750.00	3.24	100.38	4748.03	-3.21	-4.63	40.99	0.82	41.25	96.44
4775.00	3.59	102.42	4772.99	-3.45	-4.92	42.45	1.46	42.74	96.61
4800.00	3.48	103.52	4797.94	-3.75	-5.27	43.95	0.50	44.27	96.83
4825.00	3.53	101.96	4822.89	-4.03	-5.60	45.45	0.43	45.79	97.03
4850.00	3.72	102.09	4847.84	-4.31	-5.93	46.99	0.73	47.36	97.20

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
4875.00	3.65	103.46	4872.79	-4.61	-6.29	48.56	0.44	48.96	97.38
4900.00	3.67	102.67	4897.74	-4.91	-6.65	50.11	0.21	50.55	97.56
4925.00	3.75	102.00	4922.69	-5.20	-6.99	51.69	0.36	52.16	97.71
4950.00	3.90	101.46	4947.63	-5.49	-7.33	53.32	0.62	53.82	97.83
4975.00	4.13	102.28	4972.57	-5.79	-7.69	55.03	0.96	55.57	97.96
5000.00	4.44	104.43	4997.50	-6.16	-8.12	56.85	1.42	57.43	98.13
5025.00	4.57	105.22	5022.42	-6.59	-8.63	58.75	0.58	59.38	98.35
5050.00	4.71	104.72	5047.34	-7.05	-9.15	60.70	0.57	61.39	98.57
5075.00	4.75	105.07	5072.26	-7.51	-9.68	62.70	0.18	63.44	98.78
5100.00	5.00	104.74	5097.17	-7.98	-10.23	64.75	1.02	65.55	98.98
5125.00	5.13	105.74	5122.07	-8.49	-10.81	66.88	0.62	67.74	99.18
5150.00	5.42	105.14	5146.96	-9.02	-11.42	69.09	1.19	70.03	99.38
5175.00	5.48	103.65	5171.85	-9.53	-12.01	71.39	0.62	72.39	99.55
5200.00	5.41	104.87	5196.74	-10.04	-12.59	73.69	0.54	74.76	99.70
5225.00	5.47	105.37	5221.62	-10.58	-13.21	75.98	0.31	77.12	99.86
5250.00	5.48	105.69	5246.51	-11.14	-13.85	78.28	0.12	79.50	100.03
5275.00	5.25	109.27	5271.40	-11.76	-14.55	80.51	1.60	81.81	100.24
5300.00	5.16	112.82	5296.30	-12.50	-15.36	82.63	1.34	84.04	100.53
5325.00	5.11	115.74	5321.20	-13.35	-16.28	84.67	1.07	86.22	100.89
5350.00	5.05	115.91	5346.10	-14.24	-17.25	86.66	0.26	88.36	101.26
5375.00	5.06	114.61	5371.00	-15.12	-18.19	88.65	0.46	90.50	101.59
5400.00	5.03	115.73	5395.90	-15.98	-19.12	90.64	0.42	92.63	101.91
5425.00	5.01	115.57	5420.81	-16.86	-20.07	92.61	0.09	94.76	102.23
5450.00	5.08	119.26	5445.71	-17.80	-21.08	94.56	1.33	96.88	102.57
5475.00	5.09	122.47	5470.61	-18.87	-22.22	96.46	1.14	98.99	102.97
5500.00	5.12	121.44	5495.51	-19.99	-23.40	98.35	0.39	101.10	103.38
5525.00	5.19	122.54	5520.41	-21.11	-24.59	100.26	0.47	103.23	103.78
5550.00	5.20	123.41	5545.31	-22.28	-25.82	102.16	0.32	105.37	104.18
5575.00	5.24	123.92	5570.21	-23.47	-27.08	104.05	0.24	107.52	104.59
5600.00	5.15	123.75	5595.10	-24.67	-28.34	105.93	0.35	109.66	104.98
5625.00	5.11	123.25	5620.00	-25.84	-29.58	107.80	0.24	111.78	105.34
5650.00	5.16	122.86	5644.90	-26.99	-30.80	109.67	0.25	113.92	105.69

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	%/100ft	ft	deg
5675.00	5.17	122.79	5669.80	-28.15	-32.02	111.56	0.03	116.07	106.01
5700.00	4.84	123.45	5694.71	-29.27	-33.21	113.39	1.33	118.15	106.32
5725.00	4.83	121.05	5719.62	-30.33	-34.33	115.17	0.81	120.18	106.60
5750.00	4.83	119.93	5744.53	-31.34	-35.40	116.99	0.38	122.23	106.84
5775.00	4.74	121.10	5769.44	-32.34	-36.46	118.79	0.54	124.26	107.06
5800.00	4.65	120.77	5794.36	-33.33	-37.51	120.54	0.39	126.24	107.29
5825.00	4.60	119.58	5819.28	-34.28	-38.53	122.28	0.43	128.21	107.49
5850.00	4.59	121.23	5844.19	-35.23	-39.54	124.01	0.53	130.16	107.68
5875.00	4.57	119.07	5869.11	-36.18	-40.54	125.74	0.70	132.11	107.87
5900.00	4.64	118.98	5894.03	-37.09	-41.52	127.49	0.28	134.08	108.04
5925.00	4.58	118.67	5918.95	-38.00	-42.49	129.25	0.28	136.06	108.20
5950.00	4.64	118.03	5943.87	-38.89	-43.44	131.02	0.34	138.04	108.34
5975.00	4.49	118.88	5968.79	-39.78	-44.39	132.77	0.68	140.00	108.49
6000.00	4.59	116.58	5993.71	-40.63	-45.31	134.52	0.83	141.95	108.61
6025.00	4.50	117.62	6018.64	-41.47	-46.21	136.29	0.50	143.91	108.73
6050.00	4.37	115.27	6043.56	-42.28	-47.07	138.02	0.89	145.82	108.83
6075.00	4.44	117.09	6068.49	-43.06	-47.92	139.74	0.64	147.73	108.93
6100.00	4.40	115.39	6093.41	-43.86	-48.77	141.47	0.55	149.64	109.02
6125.00	4.36	116.50	6118.34	-44.63	-49.61	143.19	0.38	151.54	109.11
6150.00	4.27	114.64	6143.27	-45.38	-50.42	144.88	0.66	153.40	109.19
6175.00	4.31	115.59	6168.20	-46.12	-51.21	146.57	0.32	155.26	109.26
6200.00	4.21	114.82	6193.13	-46.85	-52.00	148.25	0.47	157.11	109.33
6225.00	4.30	116.00	6218.06	-47.59	-52.80	149.93	0.52	158.95	109.40
6250.00	4.20	114.76	6242.99	-48.32	-53.59	151.60	0.54	160.80	109.47
6275.00	4.18	113.30	6267.93	-49.01	-54.34	153.27	0.44	162.62	109.52
6300.00	4.09	114.56	6292.86	-49.68	-55.07	154.92	0.50	164.42	109.57
6325.00	4.07	113.30	6317.80	-50.35	-55.79	156.55	0.37	166.19	109.62
6350.00	4.15	113.45	6342.73	-51.00	-56.50	158.19	0.33	167.98	109.66
6375.00	3.92	114.12	6367.67	-51.66	-57.21	159.80	0.98	169.73	109.70
6400.00	3.87	112.33	6392.61	-52.27	-57.88	161.36	0.53	171.43	109.73
6425.00	3.91	111.69	6417.56	-52.85	-58.52	162.93	0.23	173.12	109.76
6450.00	3.75	112.35	6442.50	-53.42	-59.14	164.48	0.66	174.79	109.78

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
6475.00	3.71	109.71	6467.45	-53.95	-59.72	166.00	0.70	176.41	109.79
6500.00	3.78	109.82	6492.39	-54.45	-60.28	167.53	0.29	178.05	109.79
6525.00	3.53	109.06	6517.34	-54.93	-60.81	169.03	1.02	179.64	109.79
6550.00	3.67	107.13	6542.29	-55.37	-61.29	170.53	0.74	181.21	109.77
6575.00	3.67	106.41	6567.24	-55.77	-61.76	172.06	0.19	182.81	109.74
6600.00	3.78	98.06	6592.19	-56.06	-62.10	173.64	2.21	184.41	109.68
6625.00	3.85	95.80	6617.13	-56.20	-62.30	175.29	0.67	186.04	109.56
6650.00	3.84	93.50	6642.08	-56.28	-62.43	176.96	0.62	187.66	109.43
6675.00	3.94	94.62	6667.02	-56.34	-62.55	178.65	0.49	189.29	109.30
6700.00	3.93	95.44	6691.96	-56.44	-62.71	180.36	0.22	190.95	109.17
6725.00	3.84	94.16	6716.90	-56.52	-62.85	182.05	0.49	192.59	109.05
6750.00	3.89	93.91	6741.85	-56.58	-62.97	183.73	0.19	194.22	108.92
6775.00	3.91	93.96	6766.79	-56.64	-63.08	185.43	0.09	195.87	108.79
6800.00	3.99	95.89	6791.73	-56.73	-63.23	187.15	0.63	197.54	108.67
6825.00	3.88	94.59	6816.67	-56.82	-63.39	188.85	0.59	199.21	108.55
6850.00	4.04	94.01	6841.61	-56.89	-63.52	190.58	0.67	200.88	108.43
6875.00	3.97	95.84	6866.55	-56.98	-63.67	192.31	0.59	202.58	108.32
6900.00	3.93	97.41	6891.49	-57.12	-63.86	194.02	0.45	204.26	108.22
6925.00	3.83	97.11	6916.43	-57.28	-64.08	195.70	0.41	205.93	108.13
6950.00	3.99	95.80	6941.38	-57.41	-64.27	197.40	0.71	207.60	108.03
6975.00	4.01	97.30	6966.31	-57.55	-64.47	199.13	0.43	209.30	107.94
7000.00	3.97	98.69	6991.25	-57.73	-64.71	200.85	0.41	211.02	107.86
7025.00	3.92	96.44	7016.19	-57.90	-64.94	202.55	0.65	212.71	107.78
7050.00	3.97	97.63	7041.14	-58.05	-65.15	204.26	0.38	214.40	107.69
7075.00	4.02	99.29	7066.07	-58.25	-65.40	205.99	0.50	216.12	107.62
7100.00	4.01	98.31	7091.01	-58.46	-65.67	207.72	0.28	217.85	107.55
7125.00	3.99	98.44	7115.95	-58.65	-65.93	209.44	0.11	219.57	107.47
7150.00	3.95	98.10	7140.89	-58.84	-66.17	211.15	0.17	221.28	107.40
7175.00	4.10	97.65	7165.83	-59.02	-66.41	212.89	0.60	223.01	107.33
7200.00	4.20	98.94	7190.77	-59.22	-66.68	214.68	0.54	224.79	107.25
7225.00	4.54	105.84	7215.69	-59.57	-67.09	216.53	2.52	226.69	107.21
7250.00	4.62	105.57	7240.61	-60.04	-67.63	218.46	0.32	228.68	107.20

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
7275.00	4.82	107.01	7265.53	-60.55	-68.21	220.43	0.94	230.74	107.19
7300.00	4.74	108.65	7290.44	-61.12	-68.84	222.41	0.63	232.82	107.20
7325.00	5.05	108.90	7315.35	-61.73	-69.53	224.43	1.21	234.96	107.21
7350.00	5.13	108.18	7340.25	-62.37	-70.24	226.54	0.44	237.17	107.23
7375.00	5.31	110.99	7365.15	-63.06	-71.00	228.68	1.24	239.45	107.25
7400.00	5.40	114.34	7390.04	-63.88	-71.90	230.83	1.30	241.77	107.30
7425.00	5.88	115.59	7414.92	-64.84	-72.94	233.06	2.00	244.21	107.38
7450.00	5.81	117.60	7439.79	-65.90	-74.08	235.34	0.87	246.72	107.47
7475.00	5.84	116.30	7464.66	-66.97	-75.23	237.60	0.54	249.22	107.57
7500.00	5.97	116.43	7489.53	-68.04	-76.37	239.91	0.54	251.77	107.66
7525.00	5.85	116.91	7514.39	-69.11	-77.53	242.21	0.53	254.31	107.75
7550.00	5.94	116.20	7539.26	-70.18	-78.67	244.50	0.48	256.85	107.84
7575.00	5.96	117.24	7564.13	-71.26	-79.84	246.82	0.44	259.41	107.92
7600.00	5.93	117.35	7588.99	-72.37	-81.03	249.12	0.15	261.97	108.02
7625.00	6.06	119.59	7613.85	-73.54	-82.27	251.41	1.08	264.53	108.12
7650.00	6.21	120.73	7638.71	-74.80	-83.61	253.73	0.78	267.15	108.24
7675.00	6.32	121.93	7663.56	-76.14	-85.03	256.06	0.67	269.81	108.37
7700.00	6.27	121.41	7688.41	-77.49	-86.47	258.39	0.31	272.47	108.50
7725.00	6.39	121.80	7713.26	-78.85	-87.92	260.73	0.52	275.16	108.63
7750.00	6.18	121.99	7738.11	-80.22	-89.36	263.06	0.86	277.82	108.76
7775.00	6.29	122.05	7762.96	-81.58	-90.80	265.36	0.44	280.46	108.89
7800.00	6.16	122.51	7787.81	-82.94	-92.25	267.65	0.53	283.10	109.02
7825.00	6.05	120.63	7812.67	-84.26	-93.64	269.91	0.93	285.69	109.13
7850.00	6.04	120.59	7837.53	-85.52	-94.98	272.18	0.02	288.27	109.24
7875.00	6.02	120.23	7862.39	-86.77	-96.31	274.44	0.17	290.85	109.34
7900.00	6.05	120.69	7887.26	-88.02	-97.64	276.71	0.23	293.43	109.44
7925.00	6.11	119.22	7912.11	-89.27	-98.96	279.01	0.68	296.04	109.53
7950.00	6.10	119.92	7936.97	-90.50	-100.28	281.32	0.30	298.66	109.62
7975.00	6.02	119.66	7961.83	-91.73	-101.59	283.61	0.36	301.25	109.71
8000.00	6.09	119.54	7986.69	-92.95	-102.89	285.90	0.30	303.85	109.79
8025.00	6.18	119.44	8011.55	-94.19	-104.21	288.23	0.38	306.49	109.88
8050.00	6.10	119.24	8036.41	-95.41	-105.52	290.56	0.34	309.13	109.96

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	%/100ft	ft	deg
8075.00	6.22	119.39	8061.26	-96.65	-106.83	292.90	0.49	311.77	110.04
8100.00	6.25	126.11	8086.12	-98.03	-108.30	295.18	2.92	314.42	110.15
8125.00	6.34	128.39	8110.96	-99.62	-109.96	297.36	1.06	317.04	110.29
8150.00	6.31	130.30	8135.81	-101.29	-111.70	299.49	0.85	319.64	110.45
8175.00	6.19	129.98	8160.66	-102.97	-113.46	301.57	0.48	322.21	110.62
8200.00	6.31	133.01	8185.52	-104.70	-115.26	303.61	1.40	324.75	110.79
8225.00	6.16	137.89	8210.37	-106.57	-117.19	305.51	2.20	327.22	110.99
8250.00	6.24	140.69	8235.22	-108.55	-119.24	307.27	1.25	329.60	111.21
8275.00	6.40	141.60	8260.07	-110.63	-121.38	309.00	0.74	331.98	111.45
8300.00	6.26	140.93	8284.92	-112.72	-123.53	310.72	0.63	334.38	111.68
8325.00	6.29	141.26	8309.77	-114.79	-125.66	312.44	0.20	336.76	111.91
8350.00	6.18	141.97	8334.62	-116.85	-127.78	314.12	0.55	339.12	112.14
8375.00	5.95	141.12	8359.48	-118.86	-129.85	315.76	0.97	341.42	112.35
8400.00	5.97	141.90	8384.34	-120.84	-131.88	317.38	0.33	343.69	112.56
8425.00	5.94	140.11	8409.21	-122.80	-133.90	319.01	0.75	345.97	112.77
8450.00	5.77	141.25	8434.08	-124.71	-135.87	320.63	0.82	348.23	112.97
8475.00	5.66	141.63	8458.95	-126.61	-137.82	322.18	0.48	350.42	113.16
8500.00	5.57	140.65	8483.83	-128.46	-139.73	323.72	0.51	352.58	113.35
8525.00	5.54	140.45	8508.72	-130.27	-141.59	325.25	0.16	354.74	113.53
8550.00	5.55	142.01	8533.60	-132.10	-143.48	326.77	0.60	356.88	113.71
8575.00	5.38	139.67	8558.49	-133.89	-145.32	328.27	1.12	359.00	113.88
8600.00	5.30	140.94	8583.38	-135.63	-147.11	329.75	0.58	361.08	114.04
8625.00	5.14	139.80	8608.27	-137.33	-148.86	331.20	0.75	363.12	114.20
8650.00	5.25	141.02	8633.17	-139.03	-150.61	332.65	0.62	365.15	114.36
8675.00	5.05	140.35	8658.07	-140.71	-152.34	334.07	0.84	367.16	114.51
8700.00	5.15	140.01	8682.97	-142.37	-154.05	335.49	0.42	369.17	114.66
8725.00	4.91	140.18	8707.88	-144.00	-155.73	336.90	0.97	371.15	114.81
8750.00	4.98	138.69	8732.78	-145.59	-157.37	338.30	0.59	373.11	114.95
8775.00	4.85	139.80	8757.69	-147.16	-158.99	339.70	0.63	375.06	115.08
8800.00	4.80	140.45	8782.60	-148.72	-160.60	341.04	0.32	376.97	115.22
8825.00	4.70	140.01	8807.52	-150.27	-162.19	342.37	0.42	378.84	115.35
8850.00	4.59	140.16	8832.43	-151.78	-163.75	343.67	0.43	380.68	115.48

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
8875.00	4.57	139.14	8857.35	-153.25	-165.27	344.96	0.34	382.51	115.60
8900.00	4.48	136.64	8882.28	-154.67	-166.74	346.28	0.87	384.33	115.71
8925.00	4.53	138.94	8907.20	-156.08	-168.19	347.60	0.74	386.15	115.82
8950.00	4.31	139.22	8932.13	-157.49	-169.65	348.87	0.87	387.93	115.93
8975.00	4.26	138.64	8957.06	-158.86	-171.05	350.09	0.28	389.65	116.04
9000.00	4.24	136.34	8981.99	-160.18	-172.42	351.34	0.68	391.37	116.14
9025.00	4.30	138.00	9006.92	-161.50	-173.78	352.61	0.55	393.11	116.24
9050.00	4.22	138.70	9031.85	-162.84	-175.17	353.84	0.36	394.83	116.34
9075.00	4.09	139.03	9056.78	-164.16	-176.54	355.04	0.54	396.50	116.44
9100.00	4.03	138.06	9081.72	-165.45	-177.86	356.21	0.36	398.14	116.53
9125.00	4.08	137.24	9106.66	-166.71	-179.17	357.40	0.29	399.79	116.63
9150.00	3.97	136.51	9131.60	-167.95	-180.45	358.60	0.47	401.44	116.71
9175.00	3.96	137.52	9156.54	-169.17	-181.71	359.78	0.28	403.06	116.80
9200.00	3.95	138.70	9181.48	-170.42	-183.00	360.93	0.33	404.67	116.89
9225.00	3.89	138.57	9206.42	-171.66	-184.28	362.06	0.23	406.25	116.98
9250.00	3.80	139.09	9231.36	-172.88	-185.54	363.16	0.37	407.81	117.06
9275.00	3.72	138.29	9256.31	-174.08	-186.77	364.24	0.39	409.34	117.15
9300.00	3.79	137.96	9281.25	-175.26	-187.99	365.34	0.29	410.87	117.23
9325.00	3.73	137.84	9306.20	-176.44	-189.21	366.43	0.25	412.40	117.31
9350.00	3.58	138.25	9331.15	-177.58	-190.39	367.50	0.60	413.89	117.39
9375.00	3.49	136.60	9356.10	-178.68	-191.53	368.54	0.54	415.34	117.46
9400.00	3.59	136.71	9381.05	-179.77	-192.65	369.60	0.40	416.80	117.53
9425.00	3.54	138.56	9406.01	-180.88	-193.80	370.65	0.50	418.26	117.60
9450.00	3.42	137.66	9430.96	-181.98	-194.93	371.67	0.54	419.69	117.68
9475.00	3.27	137.01	9455.92	-183.02	-196.01	372.66	0.63	421.06	117.74
9500.00	3.34	137.63	9480.87	-184.04	-197.07	373.63	0.31	422.42	117.81
9525.00	3.37	137.70	9505.83	-185.09	-198.15	374.62	0.11	423.79	117.88
9550.00	3.33	138.45	9530.79	-186.14	-199.23	375.59	0.23	425.16	117.94
9575.00	3.33	137.61	9555.75	-187.18	-200.31	376.56	0.20	426.53	118.01
9600.00	3.32	137.87	9580.71	-188.22	-201.39	377.54	0.08	427.89	118.08
9625.00	3.13	137.07	9605.67	-189.22	-202.42	378.49	0.76	429.22	118.14
9650.00	3.25	137.02	9630.63	-190.21	-203.44	379.44	0.49	430.54	118.20

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	%/100ft	ft	deg
9675.00	3.21	138.32	9655.59	-191.22	-204.48	380.39	0.34	431.87	118.26
9700.00	3.19	138.37	9680.55	-192.23	-205.53	381.31	0.10	433.18	118.32
9725.00	3.03	137.12	9705.51	-193.20	-206.53	382.23	0.67	434.45	118.38
9750.00	3.03	134.95	9730.48	-194.12	-207.48	383.14	0.46	435.71	118.44
9775.00	2.96	135.56	9755.44	-195.01	-208.41	384.06	0.29	436.96	118.49
9800.00	2.87	132.99	9780.41	-195.87	-209.30	384.97	0.64	438.19	118.53
9825.00	2.95	133.87	9805.38	-196.71	-210.17	385.89	0.36	439.41	118.57
9850.00	3.00	136.79	9830.34	-197.60	-211.09	386.80	0.64	440.65	118.62
9875.00	2.73	132.54	9855.31	-198.45	-211.97	387.69	1.37	441.85	118.67
9900.00	2.88	133.48	9880.28	-199.25	-212.80	388.58	0.63	443.04	118.71
9925.00	2.84	135.34	9905.25	-200.09	-213.68	389.48	0.41	444.24	118.75
9950.00	2.77	133.53	9930.22	-200.92	-214.53	390.35	0.44	445.42	118.79
9975.00	2.82	132.20	9955.19	-201.72	-215.36	391.24	0.31	446.60	118.83
10000.00	2.87	134.63	9980.16	-202.54	-216.22	392.14	0.53	447.80	118.87
10025.00	2.86	135.11	10005.13	-203.39	-217.10	393.03	0.12	449.00	118.91
10050.00	2.81	133.61	10030.10	-204.22	-217.96	393.91	0.35	450.19	118.96
10075.00	3.02	132.06	10055.07	-205.05	-218.82	394.84	0.89	451.43	119.00
10100.00	2.99	130.73	10080.03	-205.88	-219.69	395.83	0.30	452.71	119.03
10125.00	3.06	125.11	10105.00	-206.66	-220.50	396.87	1.22	454.01	119.06
10150.00	3.05	124.50	10129.96	-207.38	-221.26	397.96	0.13	455.33	119.07
10175.00	3.10	125.00	10154.93	-208.10	-222.02	399.06	0.21	456.67	119.09
10200.00	3.15	123.89	10179.89	-208.83	-222.79	400.19	0.33	458.02	119.11
10225.00	3.18	123.88	10204.85	-209.56	-223.56	401.33	0.09	459.40	119.12
10250.00	3.01	124.40	10229.81	-210.28	-224.32	402.45	0.66	460.74	119.13
10275.00	2.98	125.48	10254.78	-210.99	-225.07	403.52	0.27	462.04	119.15
10300.00	2.89	127.53	10279.75	-211.72	-225.83	404.55	0.53	463.31	119.17
10325.00	2.87	127.08	10304.72	-212.45	-226.59	405.55	0.13	464.56	119.19
10350.00	2.67	129.08	10329.69	-213.16	-227.34	406.50	0.90	465.75	119.22
10375.00	2.66	129.33	10354.66	-213.86	-228.07	407.40	0.05	466.90	119.24
10400.00	2.64	129.63	10379.63	-214.56	-228.81	408.29	0.09	468.03	119.27
10425.00	2.53	129.93	10404.61	-215.26	-229.53	409.16	0.44	469.15	119.29
10450.00	2.48	130.45	10429.58	-215.93	-230.23	410.00	0.25	470.22	119.32

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
10475.00	2.45	130.17	10454.56	-216.60	-230.93	410.82	0.10	471.27	119.34
10500.00	2.38	130.67	10479.54	-217.25	-231.61	411.62	0.28	472.31	119.37
10525.00	2.40	129.51	10504.52	-217.90	-232.29	412.42	0.20	473.33	119.39
10550.00	2.35	128.14	10529.49	-218.52	-232.94	413.22	0.29	474.36	119.41
10575.00	2.34	130.35	10554.47	-219.14	-233.58	414.02	0.37	475.36	119.43
10600.00	2.31	128.99	10579.45	-219.76	-234.23	414.80	0.25	476.36	119.45
10625.00	2.36	129.83	10604.43	-220.38	-234.87	415.58	0.23	477.36	119.47
10650.00	2.22	128.49	10629.41	-220.98	-235.50	416.36	0.59	478.35	119.49
10675.00	2.15	129.07	10654.39	-221.55	-236.10	417.10	0.27	479.29	119.51
10700.00	2.11	129.48	10679.38	-222.11	-236.69	417.82	0.18	480.20	119.53
10725.00	2.13	130.84	10704.36	-222.68	-237.29	418.53	0.21	481.11	119.55
10750.00	2.12	129.15	10729.34	-223.25	-237.88	419.23	0.25	482.02	119.57
10775.00	1.96	128.24	10754.33	-223.79	-238.44	419.93	0.64	482.90	119.59
10800.00	1.89	129.33	10779.31	-224.29	-238.96	420.58	0.31	483.73	119.60
10825.00	1.61	126.72	10804.30	-224.74	-239.43	421.18	1.18	484.48	119.62
10850.00	1.45	127.48	10829.29	-225.12	-239.84	421.71	0.62	485.14	119.63
10875.00	1.39	125.73	10854.28	-225.48	-240.21	422.21	0.29	485.76	119.64
10900.00	1.37	127.30	10879.28	-225.82	-240.56	422.70	0.19	486.36	119.65
10925.00	1.43	124.26	10904.27	-226.16	-240.92	423.19	0.39	486.96	119.65
10950.00	1.36	119.97	10929.26	-226.46	-241.24	423.71	0.49	487.57	119.66
10975.00	1.18	121.50	10954.26	-226.73	-241.53	424.18	0.73	488.13	119.66
11000.00	1.04	125.06	10979.25	-226.98	-241.79	424.59	0.65	488.61	119.66
11025.00	0.99	133.55	11004.25	-227.25	-242.07	424.93	0.63	489.05	119.67
11050.00	0.90	129.53	11029.24	-227.51	-242.35	425.24	0.44	489.45	119.68
11075.00	0.85	126.40	11054.24	-227.73	-242.58	425.54	0.29	489.83	119.69
11100.00	0.76	126.98	11079.24	-227.93	-242.79	425.82	0.33	490.17	119.69
11125.00	0.77	130.01	11104.24	-228.13	-243.00	426.08	0.17	490.51	119.70
11150.00	0.91	131.22	11129.23	-228.36	-243.24	426.36	0.53	490.86	119.70
11175.00	0.83	123.57	11154.23	-228.58	-243.47	426.66	0.54	491.24	119.71
11200.00	0.69	123.56	11179.23	-228.76	-243.65	426.94	0.56	491.57	119.71
11225.00	0.66	125.57	11204.23	-228.91	-243.82	427.18	0.17	491.87	119.72
11250.00	0.42	114.06	11229.23	-229.03	-243.94	427.38	1.04	492.10	119.72

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
11275.00	0.26	347.38	11254.23	-229.01	-243.92	427.45	2.45	492.15	119.71
11300.00	0.31	313.07	11279.23	-228.91	-243.82	427.39	0.70	492.05	119.70
11325.00	0.26	344.61	11304.23	-228.81	-243.72	427.33	0.65	491.94	119.70
11350.00	0.39	330.83	11329.23	-228.68	-243.59	427.27	0.58	491.83	119.69
11375.00	0.29	327.20	11354.22	-228.56	-243.46	427.20	0.40	491.70	119.68
11400.00	0.33	343.74	11379.22	-228.44	-243.34	427.14	0.40	491.59	119.67
11425.00	0.35	327.18	11404.22	-228.31	-243.21	427.08	0.40	491.47	119.66
11450.00	0.28	332.28	11429.22	-228.19	-243.09	427.01	0.28	491.35	119.65
11475.00	0.51	326.93	11454.22	-228.05	-242.94	426.92	0.91	491.20	119.64
11500.00	0.59	316.61	11479.22	-227.86	-242.75	426.77	0.51	490.98	119.63
11525.00	0.99	311.32	11504.22	-227.64	-242.52	426.52	1.62	490.65	119.62
11550.00	1.16	305.07	11529.21	-227.36	-242.23	426.15	0.83	490.19	119.61
11575.00	1.40	304.79	11554.21	-227.06	-241.91	425.69	0.97	489.63	119.61
11600.00	1.81	305.15	11579.20	-226.68	-241.51	425.12	1.63	488.93	119.60
11625.00	2.44	302.73	11604.18	-226.19	-241.00	424.35	2.55	488.01	119.59
11650.00	2.69	305.57	11629.16	-225.59	-240.37	423.43	1.13	486.89	119.58
11675.00	2.86	303.57	11654.13	-224.94	-239.68	422.43	0.76	485.69	119.57
11700.00	2.84	304.83	11679.10	-224.28	-238.98	421.40	0.26	484.45	119.56
11725.00	2.86	304.60	11704.07	-223.61	-238.27	420.38	0.10	483.21	119.54
11750.00	2.75	302.71	11729.04	-222.96	-237.60	419.36	0.59	481.99	119.53
11775.00	2.76	302.84	11754.01	-222.35	-236.95	418.35	0.05	480.79	119.53
11800.00	2.78	302.09	11778.98	-221.74	-236.30	417.33	0.17	479.59	119.52
11825.00	2.96	302.97	11803.95	-221.10	-235.62	416.28	0.74	478.34	119.51
11850.00	3.36	307.28	11828.91	-220.35	-234.83	415.15	1.86	476.97	119.49
11875.00	3.92	311.45	11853.86	-219.38	-233.82	413.93	2.48	475.41	119.46
11900.00	4.41	312.67	11878.79	-218.21	-232.60	412.58	1.99	473.63	119.41
11925.00	4.71	312.13	11903.71	-216.92	-231.26	411.12	1.19	471.70	119.36

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NORTHERN DELAWARE BASIN

LEA COUNTY, NM

BULLDOG

BASEBALL CAP FED COM #603H

OWB

Design: AWP

Standard Survey Report

01 October, 2019

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BASEBALL CAP FED COM #603H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3413.7usft (IDC 205)
Site:	BULLDOG	MD Reference:	KB=26' @ 3413.7usft (IDC 205)
Well:	BASEBALL CAP FED COM #603H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWP	Database:	EDM_Users

Project	LEA COUNTY, NM		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site		BULLDOG			
Site Position:		Northing:	398,637.10 usft	Latitude:	32° 5' 36.820 N
From:	Map	Easting:	741,887.40 usft	Longitude:	103° 33' 8.116 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.42 °

Well	BASEBALL CAP FED COM #603H					
Well Position	+N/-S	0.0 usft	Northing:	431,145.50 usft	Latitude:	32° 10' 55.394 N
	+E/-W	0.0 usft	Easting:	781,902.60 usft	Longitude:	103° 25' 19.799 W
Position Uncertainty		3.0 usft	Wellhead Elevation:	usft	Ground Level:	3,387.7 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	WMM2015	5/15/2019	6.70	60.00	47,716.42926751

Design	AWP				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.0	0.0	0.0	1.98	

Survey Program	Date 8/21/2019			
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
100.0	11,925.0	GYRO (OWB)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4
12,081.0	22,626.0	MWD-CURV/LATERAL (OWB)	MWD+IFR1+FDIR	OWSG MWD + IFR1 + FDIR Correction

Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn	
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate	
(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.11	232.44	100.0	-0.1	-0.1	-0.1	0.11	0.11	0.00	
125.0	0.25	219.53	125.0	-0.1	-0.1	-0.1	0.58	0.56	-51.64	
150.0	0.43	208.76	150.0	-0.2	-0.2	-0.2	0.76	0.72	-43.08	
175.0	0.29	218.03	175.0	-0.4	-0.3	-0.4	0.60	-0.56	37.08	
200.0	0.29	218.92	200.0	-0.5	-0.4	-0.5	0.02	0.00	3.56	
225.0	0.24	206.72	225.0	-0.6	-0.4	-0.6	0.30	-0.20	-48.80	
250.0	0.26	196.95	250.0	-0.7	-0.5	-0.7	0.19	0.08	-39.08	
275.0	0.20	201.10	275.0	-0.8	-0.5	-0.8	0.25	-0.24	16.60	
300.0	0.30	219.29	300.0	-0.9	-0.6	-0.9	0.51	0.40	72.76	

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BASEBALL CAP FED COM #603H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3413.7usft (IDC 205)
Site:	BULLDOG	MD Reference:	KB=26' @ 3413.7usft (IDC 205)
Well:	BASEBALL CAP FED COM #603H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWP	Database:	EDM_Users

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
325.0	0.36	208.43	325.0	-1.0	-0.6	-1.0	0.35	0.24	-43.44
350.0	0.46	208.85	350.0	-1.1	-0.7	-1.2	0.40	0.40	1.68
375.0	0.46	217.47	375.0	-1.3	-0.8	-1.3	0.28	0.00	34.48
400.0	0.60	220.94	400.0	-1.5	-1.0	-1.5	0.57	0.56	13.88
425.0	0.86	217.79	425.0	-1.7	-1.2	-1.8	1.05	1.04	-12.60
450.0	1.05	217.95	450.0	-2.1	-1.4	-2.1	0.76	0.76	0.64
475.0	1.27	216.77	475.0	-2.5	-1.7	-2.5	0.89	0.88	-4.72
500.0	1.47	215.77	500.0	-2.9	-2.1	-3.0	0.81	0.80	-4.00
525.0	1.73	214.50	525.0	-3.5	-2.5	-3.6	1.05	1.04	-5.08
550.0	1.85	214.10	550.0	-4.2	-2.9	-4.3	0.48	0.48	-1.60
575.0	1.87	213.73	574.9	-4.8	-3.4	-4.9	0.09	0.08	-1.48
600.0	1.87	214.88	599.9	-5.5	-3.9	-5.6	0.15	0.00	4.60
625.0	1.91	215.38	624.9	-6.2	-4.3	-6.3	0.17	0.16	2.00
650.0	1.93	214.56	649.9	-6.9	-4.8	-7.0	0.14	0.08	-3.28
675.0	1.97	212.51	674.9	-7.6	-5.3	-7.7	0.32	0.16	-8.20
700.0	1.96	212.90	699.9	-8.3	-5.7	-8.5	0.07	-0.04	1.56
725.0	1.95	214.67	724.9	-9.0	-6.2	-9.2	0.24	-0.04	7.08
750.0	1.94	211.93	749.8	-9.7	-6.7	-9.9	0.37	-0.04	-10.96
775.0	1.88	210.26	774.8	-10.4	-7.1	-10.7	0.33	-0.24	-6.68
800.0	1.89	209.24	799.8	-11.1	-7.5	-11.4	0.14	0.04	-4.08
825.0	1.91	209.20	824.8	-11.9	-7.9	-12.1	0.08	0.08	-0.16
850.0	1.83	209.21	849.8	-12.6	-8.3	-12.9	0.32	-0.32	0.04
875.0	1.73	206.12	874.8	-13.3	-8.7	-13.6	0.55	-0.40	-12.36
900.0	1.55	200.01	899.8	-13.9	-9.0	-14.2	1.00	-0.72	-24.44
925.0	1.31	200.37	924.8	-14.5	-9.2	-14.8	0.96	-0.96	1.44
950.0	1.19	194.56	949.8	-15.0	-9.3	-15.3	0.70	-0.48	-23.24
975.0	1.12	191.34	974.7	-15.5	-9.5	-15.8	0.38	-0.28	-12.88
1,000.0	1.06	188.61	999.7	-16.0	-9.5	-16.3	0.32	-0.24	-10.92
1,025.0	0.98	188.35	1,024.7	-16.4	-9.6	-16.7	0.32	-0.32	-1.04
1,050.0	0.94	185.53	1,049.7	-16.8	-9.7	-17.2	0.25	-0.16	-11.28
1,075.0	0.91	183.62	1,074.7	-17.2	-9.7	-17.6	0.17	-0.12	-7.64
1,100.0	0.90	180.96	1,099.7	-17.6	-9.7	-18.0	0.17	-0.04	-10.64
1,125.0	0.92	181.83	1,124.7	-18.0	-9.7	-18.4	0.10	0.08	3.48
1,150.0	0.95	180.60	1,149.7	-18.4	-9.7	-18.8	0.14	0.12	-4.92
1,175.0	0.95	180.07	1,174.7	-18.9	-9.7	-19.2	0.04	0.00	-2.12
1,200.0	1.03	180.91	1,199.7	-19.3	-9.7	-19.6	0.33	0.32	3.36
1,225.0	1.08	181.28	1,224.7	-19.7	-9.7	-20.1	0.20	0.20	1.48
1,250.0	1.06	176.67	1,249.7	-20.2	-9.7	-20.5	0.35	-0.08	-18.44
1,275.0	1.09	178.07	1,274.7	-20.7	-9.7	-21.0	0.16	0.12	5.60
1,300.0	1.12	174.83	1,299.7	-21.2	-9.7	-21.5	0.28	0.12	-12.96
1,325.0	1.08	172.07	1,324.7	-21.6	-9.6	-22.0	0.27	-0.16	-11.04
1,350.0	1.32	153.87	1,349.7	-22.1	-9.5	-22.4	1.79	0.96	-72.80
1,375.0	1.86	135.78	1,374.7	-22.7	-9.1	-23.0	2.92	2.16	-72.36

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BASEBALL CAP FED COM #603H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3413.7usft (IDC 205)
Site:	BULLDOG	MD Reference:	KB=26' @ 3413.7usft (IDC 205)
Well:	BASEBALL CAP FED COM #603H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWP	Database:	EDM_Users

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,400.0	2.20	131.83	1,399.7	-23.3	-8.4	-23.6	1.47	1.36	-15.80
1,425.0	2.28	131.09	1,424.6	-23.9	-7.7	-24.2	0.34	0.32	-2.96
1,450.0	3.22	120.22	1,449.6	-24.6	-6.7	-24.8	4.28	3.76	-43.48
1,475.0	3.66	116.62	1,474.6	-25.3	-5.4	-25.5	1.96	1.76	-14.40
1,500.0	3.71	116.09	1,499.5	-26.0	-3.9	-26.2	0.24	0.20	-2.12
1,525.0	3.64	116.35	1,524.5	-26.7	-2.5	-26.8	0.29	-0.28	1.04
1,550.0	3.63	116.43	1,549.4	-27.5	-1.1	-27.5	0.04	-0.04	0.32
1,575.0	3.66	115.79	1,574.4	-28.2	0.3	-28.1	0.20	0.12	-2.56
1,600.0	3.59	115.41	1,599.3	-28.8	1.8	-28.8	0.30	-0.28	-1.52
1,625.0	3.51	115.67	1,624.3	-29.5	3.2	-29.4	0.33	-0.32	1.04
1,650.0	3.51	114.15	1,649.2	-30.1	4.6	-30.0	0.37	0.00	-6.08
1,675.0	3.54	114.48	1,674.2	-30.8	6.0	-30.6	0.14	0.12	1.32
1,700.0	3.50	115.80	1,699.1	-31.4	7.3	-31.2	0.36	-0.16	5.28
1,725.0	3.46	115.80	1,724.1	-32.1	8.7	-31.8	0.16	-0.16	0.00
1,750.0	3.36	116.73	1,749.0	-32.7	10.0	-32.4	0.46	-0.40	3.72
1,775.0	3.01	122.27	1,774.0	-33.4	11.2	-33.0	1.86	-1.40	22.16
1,800.0	2.69	122.37	1,799.0	-34.1	12.3	-33.6	1.28	-1.28	0.40
1,825.0	2.54	124.71	1,823.9	-34.7	13.3	-34.2	0.74	-0.60	9.36
1,850.0	2.13	121.84	1,848.9	-35.3	14.1	-34.8	1.70	-1.64	-11.48
1,875.0	1.38	121.55	1,873.9	-35.7	14.8	-35.2	3.00	-3.00	-1.16
1,900.0	0.92	114.37	1,898.9	-35.9	15.2	-35.4	1.92	-1.84	-28.72
1,925.0	0.90	112.68	1,923.9	-36.1	15.6	-35.5	0.13	-0.08	-6.76
1,950.0	0.86	113.19	1,948.9	-36.2	15.9	-35.7	0.16	-0.16	2.04
1,975.0	0.87	114.02	1,973.9	-36.4	16.3	-35.8	0.06	0.04	3.32
2,000.0	0.85	109.68	1,998.9	-36.5	16.6	-35.9	0.27	-0.08	-17.36
2,025.0	0.85	114.28	2,023.9	-36.7	16.9	-36.1	0.27	0.00	18.40
2,050.0	0.83	108.86	2,048.9	-36.8	17.3	-36.2	0.33	-0.08	-21.68
2,075.0	0.86	105.10	2,073.9	-36.9	17.6	-36.3	0.25	0.12	-15.04
2,100.0	0.86	110.84	2,098.9	-37.0	18.0	-36.4	0.34	0.00	22.96
2,125.0	0.87	108.72	2,123.9	-37.2	18.4	-36.5	0.13	0.04	-8.48
2,150.0	0.40	115.95	2,148.9	-37.2	18.6	-36.6	1.90	-1.88	28.92
2,175.0	0.26	129.56	2,173.9	-37.3	18.7	-36.7	0.64	-0.56	54.44
2,200.0	0.18	142.98	2,198.9	-37.4	18.8	-36.7	0.38	-0.32	53.68
2,225.0	0.16	156.99	2,223.9	-37.5	18.8	-36.8	0.18	-0.08	56.04
2,250.0	0.05	117.54	2,248.9	-37.5	18.9	-36.8	0.50	-0.44	-157.80
2,275.0	0.08	49.73	2,273.9	-37.5	18.9	-36.8	0.31	0.12	-271.24
2,300.0	0.25	12.58	2,298.9	-37.4	18.9	-36.7	0.77	0.68	-148.60
2,325.0	0.13	259.75	2,323.9	-37.4	18.9	-36.7	1.29	-0.48	-451.32
2,350.0	0.37	268.73	2,348.9	-37.4	18.8	-36.7	0.97	0.96	35.92
2,375.0	0.51	266.84	2,373.9	-37.4	18.6	-36.7	0.56	0.56	-7.56
2,400.0	0.61	263.85	2,398.9	-37.4	18.3	-36.8	0.42	0.40	-11.96
2,425.0	0.58	261.41	2,423.9	-37.4	18.1	-36.8	0.16	-0.12	-9.76
2,450.0	0.68	268.72	2,448.9	-37.5	17.8	-36.8	0.51	0.40	29.24

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BASEBALL CAP FED COM #603H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3413.7usft (IDC 205)
Site:	BULLDOG	MD Reference:	KB=26' @ 3413.7usft (IDC 205)
Well:	BASEBALL CAP FED COM #603H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWP	Database:	EDM_Users

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
2,475.0	0.62	276.30	2,473.9	-37.5	17.5	-36.8	0.42	-0.24	30.32
2,500.0	0.60	281.37	2,498.9	-37.4	17.3	-36.8	0.23	-0.08	20.28
2,525.0	0.55	279.85	2,523.9	-37.4	17.0	-36.8	0.21	-0.20	-6.08
2,550.0	0.45	275.55	2,548.9	-37.3	16.8	-36.7	0.43	-0.40	-17.20
2,575.0	0.48	272.68	2,573.9	-37.3	16.6	-36.7	0.15	0.12	-11.48
2,600.0	0.44	262.90	2,598.9	-37.3	16.4	-36.7	0.35	-0.16	-39.12
2,625.0	0.57	269.89	2,623.9	-37.3	16.2	-36.8	0.57	0.52	27.96
2,650.0	0.60	262.42	2,648.9	-37.4	15.9	-36.8	0.33	0.12	-29.88
2,675.0	0.58	267.16	2,673.9	-37.4	15.7	-36.8	0.21	-0.08	18.96
2,700.0	0.62	277.17	2,698.9	-37.4	15.4	-36.8	0.45	0.16	40.04
2,725.0	0.53	277.74	2,723.9	-37.3	15.2	-36.8	0.36	-0.36	2.28
2,750.0	0.51	281.54	2,748.9	-37.3	14.9	-36.8	0.16	-0.08	15.20
2,775.0	0.48	275.16	2,773.9	-37.3	14.7	-36.7	0.25	-0.12	-25.52
2,800.0	0.47	259.74	2,798.9	-37.3	14.5	-36.8	0.51	-0.04	-61.68
2,825.0	0.46	260.44	2,823.9	-37.3	14.3	-36.8	0.05	-0.04	2.80
2,850.0	0.61	260.76	2,848.9	-37.4	14.1	-36.8	0.60	0.60	1.28
2,875.0	0.55	268.30	2,873.8	-37.4	13.8	-36.9	0.39	-0.24	30.16
2,900.0	0.55	272.62	2,898.8	-37.4	13.6	-36.9	0.17	0.00	17.28
2,925.0	0.52	275.25	2,923.8	-37.4	13.4	-36.9	0.16	-0.12	10.52
2,950.0	0.46	272.67	2,948.8	-37.3	13.2	-36.9	0.26	-0.24	-10.32
2,975.0	0.43	269.44	2,973.8	-37.3	13.0	-36.9	0.16	-0.12	-12.92
3,000.0	0.37	261.69	2,998.8	-37.4	12.8	-36.9	0.32	-0.24	-31.00
3,025.0	0.45	258.42	3,023.8	-37.4	12.6	-36.9	0.33	0.32	-13.08
3,050.0	0.51	262.57	3,048.8	-37.4	12.4	-37.0	0.28	0.24	16.60
3,075.0	0.44	275.43	3,073.8	-37.4	12.2	-37.0	0.51	-0.28	51.44
3,100.0	0.43	276.69	3,098.8	-37.4	12.0	-37.0	0.06	-0.04	5.04
3,125.0	0.43	287.74	3,123.8	-37.4	11.8	-36.9	0.33	0.00	44.20
3,150.0	0.33	291.45	3,148.8	-37.3	11.7	-36.9	0.41	-0.40	14.84
3,175.0	0.29	292.82	3,173.8	-37.3	11.5	-36.8	0.16	-0.16	5.48
3,200.0	0.37	285.73	3,198.8	-37.2	11.4	-36.8	0.36	0.32	-28.36
3,225.0	0.49	344.38	3,223.8	-37.1	11.3	-36.7	1.74	0.48	234.60
3,250.0	1.06	358.74	3,248.8	-36.8	11.3	-36.3	2.39	2.28	57.44
3,275.0	1.50	5.94	3,273.8	-36.2	11.3	-35.8	1.87	1.76	28.80
3,300.0	1.68	9.97	3,298.8	-35.5	11.4	-35.1	0.85	0.72	16.12
3,325.0	1.62	12.25	3,323.8	-34.8	11.5	-34.4	0.36	-0.24	9.12
3,350.0	1.56	10.89	3,348.8	-34.1	11.7	-33.7	0.28	-0.24	-5.44
3,375.0	1.76	11.75	3,373.8	-33.4	11.8	-33.0	0.81	0.80	3.44
3,400.0	1.70	15.22	3,398.8	-32.7	12.0	-32.2	0.48	-0.24	13.88
3,425.0	1.72	20.46	3,423.8	-32.0	12.2	-31.5	0.63	0.08	20.96
3,450.0	1.73	20.53	3,448.8	-31.3	12.5	-30.8	0.04	0.04	0.28
3,475.0	1.80	17.90	3,473.7	-30.5	12.7	-30.1	0.43	0.28	-10.52
3,500.0	1.83	22.03	3,498.7	-29.8	13.0	-29.3	0.54	0.12	16.52
3,525.0	1.91	26.09	3,523.7	-29.0	13.3	-28.6	0.62	0.32	16.24
3,550.0	1.83	26.07	3,548.7	-28.3	13.7	-27.8	0.32	-0.32	-0.08

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BASEBALL CAP FED COM #603H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3413.7usft (IDC 205)
Site:	BULLDOG	MD Reference:	KB=26' @ 3413.7usft (IDC 205)
Well:	BASEBALL CAP FED COM #603H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWP	Database:	EDM_Users

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,575.0	1.84	27.59	3,573.7	-27.6	14.1	-27.1	0.20	0.04	6.08
3,600.0	1.79	26.28	3,598.7	-26.9	14.4	-26.4	0.26	-0.20	-5.24
3,625.0	1.79	27.84	3,623.7	-26.2	14.8	-25.7	0.19	0.00	6.24
3,650.0	1.81	31.41	3,648.7	-25.5	15.2	-25.0	0.46	0.08	14.28
3,675.0	1.86	31.49	3,673.6	-24.8	15.6	-24.3	0.20	0.20	0.32
3,700.0	1.88	28.39	3,698.6	-24.1	16.0	-23.6	0.41	0.08	-12.40
3,725.0	1.99	30.67	3,723.6	-23.4	16.4	-22.8	0.54	0.44	9.12
3,750.0	1.90	32.17	3,748.6	-22.7	16.8	-22.1	0.41	-0.36	6.00
3,775.0	1.89	32.09	3,773.6	-22.0	17.3	-21.4	0.04	-0.04	-0.32
3,800.0	1.88	30.36	3,798.6	-21.3	17.7	-20.6	0.23	-0.04	-6.92
3,825.0	2.02	30.76	3,823.6	-20.5	18.1	-19.9	0.56	0.56	1.60
3,850.0	1.94	33.77	3,848.5	-19.8	18.6	-19.1	0.52	-0.32	12.04
3,875.0	1.84	35.57	3,873.5	-19.1	19.1	-18.5	0.47	-0.40	7.20
3,900.0	1.78	35.63	3,898.5	-18.5	19.5	-17.8	0.24	-0.24	0.24
3,925.0	1.85	35.94	3,923.5	-17.8	20.0	-17.1	0.28	0.28	1.24
3,950.0	1.93	39.38	3,948.5	-17.2	20.5	-16.5	0.56	0.32	13.76
3,975.0	1.79	38.21	3,973.5	-16.6	21.0	-15.8	0.58	-0.56	-4.68
4,000.0	1.81	39.89	3,998.5	-15.9	21.5	-15.2	0.23	0.08	6.72
4,025.0	1.90	37.99	4,023.5	-15.3	22.0	-14.5	0.44	0.36	-7.60
4,050.0	1.85	39.89	4,048.4	-14.7	22.5	-13.9	0.32	-0.20	7.60
4,075.0	1.80	42.29	4,073.4	-14.1	23.1	-13.3	0.37	-0.20	9.60
4,100.0	1.82	39.79	4,098.4	-13.5	23.6	-12.7	0.33	0.08	-10.00
4,125.0	1.72	41.22	4,123.4	-12.9	24.1	-12.1	0.44	-0.40	5.72
4,150.0	1.71	39.41	4,148.4	-12.3	24.6	-11.5	0.22	-0.04	-7.24
4,175.0	1.82	40.22	4,173.4	-11.7	25.0	-10.9	0.45	0.44	3.24
4,200.0	1.78	41.38	4,198.4	-11.1	25.6	-10.3	0.22	-0.16	4.64
4,225.0	1.67	39.86	4,223.4	-10.6	26.1	-9.7	0.48	-0.44	-6.08
4,250.0	1.81	39.42	4,248.3	-10.0	26.5	-9.1	0.56	0.56	-1.76
4,275.0	1.72	38.27	4,273.3	-9.4	27.0	-8.4	0.39	-0.36	-4.60
4,300.0	1.71	36.28	4,298.3	-8.8	27.5	-7.8	0.24	-0.04	-7.96
4,325.0	1.65	41.06	4,323.3	-8.2	27.9	-7.2	0.61	-0.24	19.12
4,350.0	1.40	39.07	4,348.3	-7.7	28.4	-6.7	1.02	-1.00	-7.96
4,375.0	1.41	37.29	4,373.3	-7.2	28.7	-6.2	0.18	0.04	-7.12
4,400.0	1.41	38.80	4,398.3	-6.7	29.1	-5.7	0.15	0.00	6.04
4,425.0	1.38	41.99	4,423.3	-6.3	29.5	-5.3	0.33	-0.12	12.76
4,450.0	1.38	38.26	4,448.3	-5.8	29.9	-4.8	0.36	0.00	-14.92
4,475.0	1.52	39.36	4,473.3	-5.3	30.3	-4.3	0.57	0.56	4.40
4,500.0	1.49	48.33	4,498.3	-4.9	30.7	-3.8	0.95	-0.12	35.88
4,525.0	1.60	68.19	4,523.2	-4.5	31.3	-3.4	2.17	0.44	79.44
4,550.0	2.20	80.06	4,548.2	-4.3	32.1	-3.2	2.86	2.40	47.48
4,575.0	2.29	84.97	4,573.2	-4.2	33.1	-3.0	0.85	0.36	19.64
4,600.0	2.21	88.55	4,598.2	-4.1	34.1	-2.9	0.65	-0.32	14.32
4,625.0	2.23	87.63	4,623.2	-4.1	35.0	-2.9	0.16	0.08	-3.68

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BASEBALL CAP FED COM #603H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3413.7usft (IDC 205)
Site:	BULLDOG	MD Reference:	KB=26' @ 3413.7usft (IDC 205)
Well:	BASEBALL CAP FED COM #603H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWP	Database:	EDM_Users

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,650.0	2.43	89.27	4,648.2	-4.1	36.0	-2.8	0.84	0.80	6.56
4,675.0	2.68	92.89	4,673.1	-4.1	37.2	-2.8	1.19	1.00	14.48
4,700.0	2.88	98.35	4,698.1	-4.2	38.4	-2.9	1.33	0.80	21.84
4,725.0	3.04	99.63	4,723.1	-4.4	39.6	-3.0	0.69	0.64	5.12
4,750.0	3.24	100.38	4,748.0	-4.6	41.0	-3.2	0.82	0.80	3.00
4,775.0	3.59	102.42	4,773.0	-4.9	42.4	-3.5	1.48	1.40	8.16
4,800.0	3.48	103.52	4,797.9	-5.3	43.9	-3.8	0.52	-0.44	4.40
4,825.0	3.53	101.96	4,822.9	-5.6	45.4	-4.0	0.43	0.20	-6.24
4,850.0	3.72	102.09	4,847.8	-5.9	47.0	-4.3	0.76	0.76	0.52
4,875.0	3.65	103.46	4,872.8	-6.3	48.6	-4.6	0.45	-0.28	5.48
4,900.0	3.67	102.67	4,897.7	-6.7	50.1	-4.9	0.22	0.08	-3.16
4,925.0	3.75	102.00	4,922.7	-7.0	51.7	-5.2	0.36	0.32	-2.68
4,950.0	3.90	101.46	4,947.6	-7.3	53.3	-5.5	0.62	0.60	-2.16
4,975.0	4.13	102.28	4,972.6	-7.7	55.0	-5.8	0.95	0.92	3.28
5,000.0	4.44	104.43	4,997.5	-8.1	56.8	-6.2	1.40	1.24	8.60
5,025.0	4.57	105.22	5,022.4	-8.6	58.7	-6.6	0.58	0.52	3.16
5,050.0	4.71	104.72	5,047.3	-9.2	60.7	-7.1	0.58	0.56	-2.00
5,075.0	4.75	105.07	5,072.3	-9.7	62.7	-7.5	0.20	0.16	1.40
5,100.0	5.00	104.74	5,097.2	-10.2	64.7	-8.0	1.01	1.00	-1.32
5,125.0	5.13	105.74	5,122.1	-10.8	66.9	-8.5	0.63	0.52	4.00
5,150.0	5.42	105.14	5,147.0	-11.4	69.1	-9.0	1.18	1.16	-2.40
5,175.0	5.48	103.65	5,171.8	-12.0	71.4	-9.5	0.61	0.24	-5.96
5,200.0	5.41	104.87	5,196.7	-12.6	73.7	-10.0	0.54	-0.28	4.88
5,225.0	5.47	105.37	5,221.6	-13.2	76.0	-10.6	0.31	0.24	2.00
5,250.0	5.48	105.69	5,246.5	-13.9	78.3	-11.1	0.13	0.04	1.28
5,275.0	5.25	109.27	5,271.4	-14.6	80.5	-11.8	1.62	-0.92	14.32
5,300.0	5.16	112.82	5,296.3	-15.4	82.6	-12.5	1.34	-0.36	14.20
5,325.0	5.11	115.74	5,321.2	-16.3	84.7	-13.4	1.06	-0.20	11.68
5,350.0	5.05	115.91	5,346.1	-17.3	86.7	-14.3	0.25	-0.24	0.68
5,375.0	5.06	114.61	5,371.0	-18.2	88.6	-15.1	0.46	0.04	-5.20
5,400.0	5.03	115.73	5,395.9	-19.1	90.6	-16.0	0.41	-0.12	4.48
5,425.0	5.01	115.57	5,420.8	-20.1	92.6	-16.9	0.10	-0.08	-0.64
5,450.0	5.08	119.26	5,445.7	-21.1	94.6	-17.8	1.33	0.28	14.76
5,475.0	5.09	122.47	5,470.6	-22.2	96.5	-18.9	1.14	0.04	12.84
5,500.0	5.12	121.44	5,495.5	-23.4	98.3	-20.0	0.39	0.12	-4.12
5,525.0	5.19	122.54	5,520.4	-24.6	100.3	-21.1	0.48	0.28	4.40
5,550.0	5.20	123.41	5,545.3	-25.8	102.1	-22.3	0.32	0.04	3.48
5,575.0	5.24	123.92	5,570.2	-27.1	104.0	-23.5	0.25	0.16	2.04
5,600.0	5.15	123.75	5,595.1	-28.4	105.9	-24.7	0.37	-0.36	-0.68
5,625.0	5.11	123.25	5,620.0	-29.6	107.8	-25.8	0.24	-0.16	-2.00
5,650.0	5.16	122.86	5,644.9	-30.8	109.7	-27.0	0.24	0.20	-1.56
5,675.0	5.17	122.79	5,669.8	-32.0	111.6	-28.1	0.05	0.04	-0.28
5,700.0	4.84	123.45	5,694.7	-33.2	113.4	-29.3	1.34	-1.32	2.64

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BASEBALL CAP FED COM #603H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3413.7usft (IDC 205)
Site:	BULLDOG	MD Reference:	KB=26' @ 3413.7usft (IDC 205)
Well:	BASEBALL CAP FED COM #603H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWP	Database:	EDM_Users

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,725.0	4.83	121.05	5,719.6	-34.3	115.2	-30.3	0.81	-0.04	-9.60
5,750.0	4.83	119.93	5,744.5	-35.4	117.0	-31.3	0.38	0.00	-4.48
5,775.0	4.74	121.10	5,769.4	-36.5	118.8	-32.3	0.53	-0.36	4.68
5,800.0	4.65	120.77	5,794.4	-37.5	120.5	-33.3	0.38	-0.36	-1.32
5,825.0	4.60	119.58	5,819.3	-38.5	122.3	-34.3	0.43	-0.20	-4.76
5,850.0	4.59	121.23	5,844.2	-39.5	124.0	-35.2	0.53	-0.04	6.60
5,875.0	4.57	119.07	5,869.1	-40.6	125.7	-36.2	0.69	-0.08	-8.64
5,900.0	4.64	118.98	5,894.0	-41.5	127.5	-37.1	0.28	0.28	-0.36
5,925.0	4.58	118.67	5,919.0	-42.5	129.2	-38.0	0.26	-0.24	-1.24
5,950.0	4.64	118.03	5,943.9	-43.4	131.0	-38.9	0.32	0.24	-2.56
5,975.0	4.49	118.88	5,968.8	-44.4	132.8	-39.8	0.66	-0.60	3.40
6,000.0	4.59	116.58	5,993.7	-45.3	134.5	-40.6	0.83	0.40	-9.20
6,025.0	4.50	117.62	6,018.6	-46.2	136.3	-41.5	0.49	-0.36	4.16
6,050.0	4.37	115.27	6,043.6	-47.1	138.0	-42.3	0.89	-0.52	-9.40
6,075.0	4.44	117.09	6,068.5	-47.9	139.7	-43.1	0.63	0.28	7.28
6,100.0	4.40	115.39	6,093.4	-48.8	141.5	-43.9	0.55	-0.16	-6.80
6,125.0	4.36	116.50	6,118.3	-49.6	143.2	-44.6	0.37	-0.16	4.44
6,150.0	4.27	114.64	6,143.3	-50.4	144.9	-45.4	0.67	-0.36	-7.44
6,175.0	4.31	115.59	6,168.2	-51.2	146.6	-46.1	0.33	0.16	3.80
6,200.0	4.21	114.82	6,193.1	-52.0	148.2	-46.8	0.46	-0.40	-3.08
6,225.0	4.30	116.00	6,218.1	-52.8	149.9	-47.6	0.50	0.36	4.72
6,250.0	4.20	114.76	6,243.0	-53.6	151.6	-48.3	0.54	-0.40	-4.96
6,275.0	4.18	113.30	6,267.9	-54.3	153.3	-49.0	0.43	-0.08	-5.84
6,300.0	4.09	114.56	6,292.9	-55.1	154.9	-49.7	0.51	-0.36	5.04
6,325.0	4.07	113.30	6,317.8	-55.8	156.5	-50.3	0.37	-0.08	-5.04
6,350.0	4.15	113.45	6,342.7	-56.5	158.2	-51.0	0.32	0.32	0.60
6,375.0	3.92	114.12	6,367.7	-57.2	159.8	-51.7	0.94	-0.92	2.68
6,400.0	3.87	112.33	6,392.6	-57.9	161.3	-52.3	0.53	-0.20	-7.16
6,425.0	3.91	111.69	6,417.6	-58.5	162.9	-52.8	0.24	0.16	-2.56
6,450.0	3.75	112.35	6,442.5	-59.1	164.5	-53.4	0.66	-0.64	2.64
6,475.0	3.71	109.71	6,467.4	-59.7	166.0	-53.9	0.71	-0.16	-10.56
6,500.0	3.78	109.82	6,492.4	-60.3	167.5	-54.4	0.28	0.28	0.44
6,525.0	3.53	109.06	6,517.3	-60.8	169.0	-54.9	1.02	-1.00	-3.04
6,550.0	3.67	107.13	6,542.3	-61.3	170.5	-55.4	0.74	0.56	-7.72
6,575.0	3.67	106.41	6,567.2	-61.8	172.0	-55.8	0.18	0.00	-2.88
6,600.0	3.78	98.06	6,592.2	-62.1	173.6	-56.1	2.21	0.44	-33.40
6,625.0	3.85	95.80	6,617.1	-62.3	175.3	-56.2	0.66	0.28	-9.04
6,650.0	3.84	93.50	6,642.1	-62.4	177.0	-56.3	0.62	-0.04	-9.20
6,675.0	3.94	94.62	6,667.0	-62.6	178.6	-56.3	0.50	0.40	4.48
6,700.0	3.93	95.44	6,692.0	-62.7	180.4	-56.4	0.23	-0.04	3.28
6,725.0	3.84	94.16	6,716.9	-62.9	182.0	-56.5	0.50	-0.36	-5.12
6,750.0	3.89	93.91	6,741.8	-63.0	183.7	-56.6	0.21	0.20	-1.00
6,775.0	3.91	93.96	6,766.8	-63.1	185.4	-56.6	0.08	0.08	0.20
6,800.0	3.99	95.89	6,791.7	-63.2	187.1	-56.7	0.62	0.32	7.72

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BASEBALL CAP FED COM #603H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3413.7usft (IDC 205)
Site:	BULLDOG	MD Reference:	KB=26' @ 3413.7usft (IDC 205)
Well:	BASEBALL CAP FED COM #603H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWP	Database:	EDM_Users

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Bulld Rate (°/100usft)	Turn Rate (°/100usft)
6,825.0	3.88	94.59	6,816.7	-63.4	188.8	-56.8	0.57	-0.44	-5.20
6,850.0	4.04	94.01	6,841.6	-63.5	190.6	-56.9	0.66	0.64	-2.32
6,875.0	3.97	95.84	6,866.6	-63.7	192.3	-57.0	0.58	-0.28	7.32
6,900.0	3.93	97.41	6,891.5	-63.9	194.0	-57.1	0.46	-0.16	6.28
6,925.0	3.83	97.11	6,916.4	-64.1	195.7	-57.3	0.41	-0.40	-1.20
6,950.0	3.99	95.80	6,941.4	-64.3	197.4	-57.4	0.73	0.64	-5.24
6,975.0	4.01	97.30	6,966.3	-64.5	199.1	-57.5	0.43	0.08	6.00
7,000.0	3.97	98.69	6,991.3	-64.7	200.8	-57.7	0.42	-0.16	5.56
7,025.0	3.92	96.44	7,016.2	-64.9	202.5	-57.9	0.65	-0.20	-9.00
7,050.0	3.97	97.63	7,041.1	-65.2	204.3	-58.0	0.38	0.20	4.76
7,075.0	4.02	99.29	7,066.1	-65.4	206.0	-58.2	0.50	0.20	6.64
7,100.0	4.01	98.31	7,091.0	-65.7	207.7	-58.4	0.28	-0.04	-3.92
7,125.0	3.99	98.44	7,116.0	-65.9	209.4	-58.6	0.09	-0.08	0.52
7,150.0	3.95	98.10	7,140.9	-66.2	211.1	-58.8	0.19	-0.16	-1.36
7,175.0	4.10	97.65	7,165.8	-66.4	212.9	-59.0	0.61	0.60	-1.80
7,200.0	4.20	98.94	7,190.8	-66.7	214.7	-59.2	0.55	0.40	5.16
7,225.0	4.54	105.84	7,215.7	-67.1	216.5	-59.6	2.50	1.36	27.60
7,250.0	4.62	105.57	7,240.6	-67.6	218.4	-60.0	0.33	0.32	-1.08
7,275.0	4.82	107.01	7,265.5	-68.2	220.4	-60.5	0.93	0.80	5.76
7,300.0	4.74	108.65	7,290.4	-68.9	222.4	-61.1	0.63	-0.32	6.56
7,325.0	5.05	108.90	7,315.4	-69.5	224.4	-61.7	1.24	1.24	1.00
7,350.0	5.13	108.18	7,340.3	-70.2	226.5	-62.4	0.41	0.32	-2.88
7,375.0	5.31	110.99	7,365.1	-71.0	228.7	-63.0	1.25	0.72	11.24
7,400.0	5.40	114.34	7,390.0	-71.9	230.8	-63.9	1.30	0.36	13.40
7,425.0	5.88	115.59	7,414.9	-72.9	233.0	-64.8	1.98	1.92	5.00
7,450.0	5.81	117.60	7,439.8	-74.1	235.3	-65.9	0.87	-0.28	8.04
7,475.0	5.84	116.30	7,464.7	-75.2	237.6	-67.0	0.54	0.12	-5.20
7,500.0	5.97	116.43	7,489.5	-76.4	239.9	-68.0	0.52	0.52	0.52
7,525.0	5.85	116.91	7,514.4	-77.5	242.2	-69.1	0.52	-0.48	1.92
7,550.0	5.94	116.20	7,539.3	-78.7	244.5	-70.2	0.46	0.36	-2.84
7,575.0	5.96	117.24	7,564.1	-79.8	246.8	-71.3	0.44	0.08	4.16
7,600.0	5.93	117.35	7,589.0	-81.0	249.1	-72.4	0.13	-0.12	0.44
7,625.0	6.06	119.59	7,613.9	-82.3	251.4	-73.5	1.07	0.52	8.96
7,650.0	6.21	120.73	7,638.7	-83.6	253.7	-74.8	0.77	0.60	4.56
7,675.0	6.32	121.93	7,663.6	-85.0	256.0	-76.1	0.68	0.44	4.80
7,700.0	6.27	121.41	7,688.4	-86.5	258.4	-77.5	0.30	-0.20	-2.08
7,725.0	6.39	121.80	7,713.3	-87.9	260.7	-78.8	0.51	0.48	1.56
7,750.0	6.18	121.99	7,738.1	-89.4	263.0	-80.2	0.84	-0.84	0.76
7,775.0	6.29	122.05	7,763.0	-90.8	265.3	-81.6	0.44	0.44	0.24
7,800.0	6.16	122.51	7,787.8	-92.3	267.6	-82.9	0.56	-0.52	1.84
7,825.0	6.05	120.63	7,812.7	-93.6	269.9	-84.2	0.91	-0.44	-7.52
7,850.0	6.04	120.59	7,837.5	-95.0	272.2	-85.5	0.04	-0.04	-0.16
7,875.0	6.02	120.23	7,862.4	-96.3	274.4	-86.8	0.17	-0.08	-1.44

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: BASEBALL CAP FED COM #603H
Wellbore: OWB
Design: AWP

Local Co-ordinate Reference: Well BASEBALL CAP FED COM #603H
TVD Reference: KB=26' @ 3413.7usft (IDC 205)
MD Reference: KB=26' @ 3413.7usft (IDC 205)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,900.0	6.05	120.69	7,887.3	-97.6	276.7	-88.0	0.23	0.12	1.84
7,925.0	6.11	119.22	7,912.1	-99.0	279.0	-89.3	0.67	0.24	-5.88
7,950.0	6.10	119.92	7,937.0	-100.3	281.3	-90.5	0.30	-0.04	2.80
7,975.0	6.02	119.66	7,961.8	-101.6	283.6	-91.7	0.34	-0.32	-1.04
8,000.0	6.09	119.54	7,986.7	-102.9	285.9	-92.9	0.28	0.28	-0.48
8,025.0	6.18	119.44	8,011.6	-104.2	288.2	-94.2	0.36	0.36	-0.40
8,050.0	6.10	119.24	8,036.4	-105.5	290.5	-95.4	0.33	-0.32	-0.80
8,075.0	6.22	119.39	8,061.3	-106.8	292.9	-96.6	0.48	0.48	0.60
8,100.0	6.25	126.11	8,086.1	-108.3	295.2	-98.0	2.92	0.12	26.88
8,125.0	6.34	128.39	8,111.0	-110.0	297.3	-99.6	1.06	0.36	9.12
8,150.0	6.31	130.30	8,135.8	-111.7	299.5	-101.3	0.85	-0.12	7.64
8,175.0	6.19	129.98	8,160.7	-113.5	301.6	-103.0	0.50	-0.48	-1.28
8,200.0	6.31	133.01	8,185.5	-115.3	303.6	-104.7	1.40	0.48	12.12
8,225.0	6.16	137.89	8,210.4	-117.2	305.5	-106.5	2.20	-0.60	19.52
8,250.0	6.24	140.69	8,235.2	-119.2	307.3	-108.5	1.25	0.32	11.20
8,275.0	6.40	141.60	8,260.1	-121.4	309.0	-110.6	0.76	0.64	3.64
8,300.0	6.26	140.93	8,284.9	-123.5	310.7	-112.7	0.63	-0.56	-2.68
8,325.0	6.29	141.26	8,309.8	-125.7	312.4	-114.8	0.19	0.12	1.32
8,350.0	6.18	141.97	8,334.6	-127.8	314.1	-116.8	0.54	-0.44	2.84
8,375.0	5.95	141.12	8,359.5	-129.9	315.8	-118.8	0.99	-0.92	-3.40
8,400.0	5.97	141.90	8,384.3	-131.9	317.4	-120.8	0.33	0.08	3.12
8,425.0	5.94	140.11	8,409.2	-133.9	319.0	-122.8	0.75	-0.12	-7.16
8,450.0	5.77	141.25	8,434.1	-135.9	320.6	-124.7	0.82	-0.68	4.56
8,475.0	5.66	141.63	8,459.0	-137.8	322.2	-126.6	0.47	-0.44	1.52
8,500.0	5.57	140.65	8,483.8	-139.7	323.7	-128.4	0.53	-0.36	-3.92
8,525.0	5.54	140.45	8,508.7	-141.6	325.2	-130.3	0.14	-0.12	-0.80
8,550.0	5.55	142.01	8,533.6	-143.5	326.8	-132.1	0.60	0.04	6.24
8,575.0	5.38	139.67	8,558.5	-145.3	328.3	-133.9	1.12	-0.68	-9.36
8,600.0	5.30	140.94	8,583.4	-147.1	329.7	-135.6	0.57	-0.32	5.08
8,625.0	5.14	139.80	8,608.3	-148.9	331.2	-137.3	0.76	-0.64	-4.56
8,650.0	5.25	141.02	8,633.2	-150.6	332.6	-139.0	0.62	0.44	4.88
8,675.0	5.05	140.35	8,658.1	-152.4	334.1	-140.7	0.84	-0.80	-2.68
8,700.0	5.15	140.01	8,683.0	-154.1	335.5	-142.4	0.42	0.40	-1.36
8,725.0	4.91	140.18	8,707.9	-155.7	336.9	-144.0	0.96	-0.96	0.68
8,750.0	4.98	138.69	8,732.8	-157.4	338.3	-145.6	0.59	0.28	-5.96
8,775.0	4.85	139.80	8,757.7	-159.0	339.7	-147.1	0.64	-0.52	4.44
8,800.0	4.80	140.45	8,782.6	-160.6	341.0	-148.7	0.30	-0.20	2.60
8,825.0	4.70	140.01	8,807.5	-162.2	342.4	-150.3	0.43	-0.40	-1.76
8,850.0	4.59	140.16	8,832.4	-163.8	343.7	-151.8	0.44	-0.44	0.60
8,875.0	4.57	139.14	8,857.4	-165.3	344.9	-153.2	0.34	-0.08	-4.08
8,900.0	4.48	136.64	8,882.3	-166.7	346.3	-154.7	0.87	-0.36	-10.00
8,925.0	4.53	138.94	8,907.2	-168.2	347.6	-156.1	0.75	0.20	9.20
8,950.0	4.31	139.22	8,932.1	-169.7	348.8	-157.5	0.88	-0.88	1.12

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BASEBALL CAP FED COM #603H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3413.7usft (IDC 205)
Site:	BULLDOG	MD Reference:	KB=26' @ 3413.7usft (IDC 205)
Well:	BASEBALL CAP FED COM #603H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWP	Database:	EDM_Users

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,975.0	4.26	138.64	8,957.1	-171.1	350.1	-158.8	0.26	-0.20	-2.32
9,000.0	4.24	136.34	8,982.0	-172.4	351.3	-160.2	0.69	-0.08	-9.20
9,025.0	4.30	138.00	9,006.9	-173.8	352.6	-161.5	0.55	0.24	6.64
9,050.0	4.22	138.70	9,031.8	-175.2	353.8	-162.8	0.38	-0.32	2.80
9,075.0	4.09	139.03	9,056.8	-176.5	355.0	-164.1	0.53	-0.52	1.32
9,100.0	4.03	138.06	9,081.7	-177.9	356.2	-165.4	0.36	-0.24	-3.88
9,125.0	4.08	137.24	9,106.7	-179.2	357.4	-166.7	0.31	0.20	-3.28
9,150.0	3.97	136.51	9,131.6	-180.5	358.6	-167.9	0.49	-0.44	-2.92
9,175.0	3.96	137.52	9,156.5	-181.7	359.8	-169.2	0.28	-0.04	4.04
9,200.0	3.95	138.70	9,181.5	-183.0	360.9	-170.4	0.33	-0.04	4.72
9,225.0	3.89	138.57	9,206.4	-184.3	362.0	-171.6	0.24	-0.24	-0.52
9,250.0	3.80	139.09	9,231.4	-185.6	363.1	-172.9	0.39	-0.36	2.08
9,275.0	3.72	138.29	9,256.3	-186.8	364.2	-174.1	0.38	-0.32	-3.20
9,300.0	3.79	137.96	9,281.3	-188.0	365.3	-175.2	0.29	0.28	-1.32
9,325.0	3.73	137.84	9,306.2	-189.2	366.4	-176.4	0.24	-0.24	-0.48
9,350.0	3.58	138.25	9,331.1	-190.4	367.5	-177.6	0.61	-0.60	1.64
9,375.0	3.49	136.60	9,356.1	-191.5	368.5	-178.7	0.54	-0.36	-6.60
9,400.0	3.59	136.71	9,381.1	-192.7	369.6	-179.7	0.40	0.40	0.44
9,425.0	3.54	138.56	9,406.0	-193.8	370.6	-180.9	0.50	-0.20	7.40
9,450.0	3.42	137.66	9,431.0	-194.9	371.6	-182.0	0.53	-0.48	-3.60
9,475.0	3.27	137.01	9,455.9	-196.0	372.6	-183.0	0.62	-0.60	-2.60
9,500.0	3.34	137.63	9,480.9	-197.1	373.6	-184.0	0.31	0.28	2.48
9,525.0	3.37	137.70	9,505.8	-198.2	374.6	-185.1	0.12	0.12	0.28
9,550.0	3.33	138.45	9,530.8	-199.2	375.6	-186.1	0.24	-0.16	3.00
9,575.0	3.33	137.61	9,555.7	-200.3	376.5	-187.2	0.20	0.00	-3.36
9,600.0	3.32	137.87	9,580.7	-201.4	377.5	-188.2	0.07	-0.04	1.04
9,625.0	3.13	137.07	9,605.7	-202.4	378.5	-189.2	0.78	-0.76	-3.20
9,650.0	3.25	137.02	9,630.6	-203.4	379.4	-190.2	0.48	0.48	-0.20
9,675.0	3.21	138.32	9,655.6	-204.5	380.4	-191.2	0.33	-0.16	5.20
9,700.0	3.19	138.37	9,680.5	-205.5	381.3	-192.2	0.08	-0.08	0.20
9,725.0	3.03	137.12	9,705.5	-206.5	382.2	-193.2	0.70	-0.64	-5.00
9,750.0	3.03	134.95	9,730.5	-207.5	383.1	-194.1	0.46	0.00	-8.68
9,775.0	2.96	135.56	9,755.4	-208.4	384.0	-195.0	0.31	-0.28	2.44
9,800.0	2.87	132.99	9,780.4	-209.3	385.0	-195.8	0.63	-0.36	-10.28
9,825.0	2.95	133.87	9,805.4	-210.2	385.9	-196.7	0.37	0.32	3.52
9,850.0	3.00	136.79	9,830.3	-211.1	386.8	-197.6	0.64	0.20	11.68
9,875.0	2.73	132.54	9,855.3	-212.0	387.7	-198.4	1.37	-1.08	-17.00
9,900.0	2.88	133.48	9,880.3	-212.8	388.6	-199.2	0.63	0.60	3.76
9,925.0	2.84	135.34	9,905.3	-213.7	389.5	-200.1	0.40	-0.16	7.44
9,950.0	2.77	133.53	9,930.2	-214.5	390.3	-200.9	0.45	-0.28	-7.24
9,975.0	2.82	132.20	9,955.2	-215.4	391.2	-201.7	0.33	0.20	-5.32
10,000.0	2.87	134.63	9,980.2	-216.2	392.1	-202.5	0.52	0.20	9.72
10,025.0	2.86	135.11	10,005.1	-217.1	393.0	-203.4	0.10	-0.04	1.92
10,050.0	2.81	133.61	10,030.1	-218.0	393.9	-204.2	0.36	-0.20	-6.00

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BASEBALL CAP FED COM #603H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3413.7usft (IDC 205)
Site:	BULLDOG	MD Reference:	KB=26' @ 3413.7usft (IDC 205)
Well:	BASEBALL CAP FED COM #603H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWP	Database:	EDM_Users

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,075.0	3.02	132.06	10,055.1	-218.8	394.8	-205.0	0.90	0.84	-6.20
10,100.0	2.99	130.73	10,080.0	-219.7	395.8	-205.9	0.30	-0.12	-5.32
10,125.0	3.06	125.11	10,105.0	-220.5	396.9	-206.6	1.22	0.28	-22.48
10,150.0	3.05	124.50	10,130.0	-221.3	397.9	-207.4	0.14	-0.04	-2.44
10,175.0	3.10	125.00	10,154.9	-222.0	399.0	-208.1	0.23	0.20	2.00
10,200.0	3.15	123.89	10,179.9	-222.8	400.2	-208.8	0.31	0.20	-4.44
10,225.0	3.18	123.88	10,204.9	-223.6	401.3	-209.5	0.12	0.12	-0.04
10,250.0	3.01	124.40	10,229.8	-224.3	402.4	-210.3	0.69	-0.68	2.08
10,275.0	2.98	125.48	10,254.8	-225.1	403.5	-211.0	0.26	-0.12	4.32
10,300.0	2.89	127.53	10,279.7	-225.8	404.5	-211.7	0.55	-0.36	8.20
10,325.0	2.87	127.08	10,304.7	-226.6	405.5	-212.4	0.12	-0.08	-1.80
10,350.0	2.67	129.08	10,329.7	-227.3	406.5	-213.1	0.89	-0.80	8.00
10,375.0	2.66	129.33	10,354.7	-228.1	407.4	-213.8	0.06	-0.04	1.00
10,400.0	2.64	129.63	10,379.6	-228.8	408.3	-214.5	0.10	-0.08	1.20
10,425.0	2.53	129.93	10,404.6	-229.5	409.1	-215.2	0.44	-0.44	1.20
10,450.0	2.48	130.45	10,429.6	-230.2	410.0	-215.9	0.22	-0.20	2.08
10,475.0	2.45	130.17	10,454.6	-230.9	410.8	-216.6	0.13	-0.12	-1.12
10,500.0	2.38	130.67	10,479.5	-231.6	411.6	-217.2	0.29	-0.28	2.00
10,525.0	2.40	129.51	10,504.5	-232.3	412.4	-217.9	0.21	0.08	-4.64
10,550.0	2.35	128.14	10,529.5	-232.9	413.2	-218.5	0.30	-0.20	-5.48
10,575.0	2.34	130.35	10,554.5	-233.6	414.0	-219.1	0.36	-0.04	8.84
10,600.0	2.31	128.99	10,579.5	-234.2	414.8	-219.7	0.25	-0.12	-5.44
10,625.0	2.36	129.83	10,604.4	-234.9	415.6	-220.3	0.24	0.20	3.36
10,650.0	2.22	128.49	10,629.4	-235.5	416.3	-221.0	0.60	-0.56	-5.36
10,675.0	2.15	129.07	10,654.4	-236.1	417.1	-221.5	0.29	-0.28	2.32
10,700.0	2.11	129.48	10,679.4	-236.7	417.8	-222.1	0.17	-0.16	1.64
10,725.0	2.13	130.84	10,704.4	-237.3	418.5	-222.7	0.22	0.08	5.44
10,750.0	2.12	129.15	10,729.3	-237.9	419.2	-223.2	0.25	-0.04	-6.76
10,775.0	1.96	128.24	10,754.3	-238.4	419.9	-223.8	0.65	-0.64	-3.64
10,800.0	1.89	129.33	10,779.3	-239.0	420.6	-224.3	0.32	-0.28	4.36
10,825.0	1.61	126.72	10,804.3	-239.4	421.2	-224.7	1.16	-1.12	-10.44
10,850.0	1.45	127.48	10,829.3	-239.8	421.7	-225.1	0.65	-0.64	3.04
10,875.0	1.39	125.73	10,854.3	-240.2	422.2	-225.5	0.30	-0.24	-7.00
10,900.0	1.37	127.30	10,879.3	-240.6	422.7	-225.8	0.17	-0.08	6.28
10,925.0	1.43	124.26	10,904.3	-240.9	423.2	-226.1	0.38	0.24	-12.16
10,950.0	1.36	119.97	10,929.3	-241.3	423.7	-226.4	0.50	-0.28	-17.16
10,975.0	1.18	121.50	10,954.3	-241.5	424.2	-226.7	0.73	-0.72	6.12
11,000.0	1.04	125.06	10,979.3	-241.8	424.6	-227.0	0.62	-0.56	14.24
11,025.0	0.99	133.55	11,004.2	-242.1	424.9	-227.2	0.63	-0.20	33.96
11,050.0	0.90	129.53	11,029.2	-242.4	425.2	-227.5	0.45	-0.36	-16.08
11,075.0	0.85	126.40	11,054.2	-242.6	425.5	-227.7	0.28	-0.20	-12.52
11,100.0	0.76	126.98	11,079.2	-242.8	425.8	-227.9	0.36	-0.36	2.32
11,125.0	0.77	130.01	11,104.2	-243.0	426.1	-228.1	0.17	0.04	12.12

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BASEBALL CAP FED COM #603H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3413.7usft (IDC 205)
Site:	BULLDOG	MD Reference:	KB=26' @ 3413.7usft (IDC 205)
Well:	BASEBALL CAP FED COM #603H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWP	Database:	EDM_Users

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,150.0	0.91	131.22	11,129.2	-243.2	426.3	-228.3	0.56	0.56	4.84
11,175.0	0.83	123.57	11,154.2	-243.5	426.6	-228.6	0.56	-0.32	-30.60
11,200.0	0.69	123.56	11,179.2	-243.7	426.9	-228.7	0.56	-0.56	-0.04
11,225.0	0.66	125.57	11,204.2	-243.8	427.2	-228.9	0.15	-0.12	8.04
11,250.0	0.42	114.06	11,229.2	-243.9	427.4	-229.0	1.05	-0.96	-46.04
11,275.0	0.26	347.38	11,254.2	-243.9	427.4	-229.0	2.45	-0.64	-506.72
11,300.0	0.31	313.07	11,279.2	-243.8	427.4	-228.9	0.70	0.20	-137.24
11,325.0	0.26	344.61	11,304.2	-243.7	427.3	-228.8	0.65	-0.20	126.16
11,350.0	0.39	330.83	11,329.2	-243.6	427.3	-228.7	0.60	0.52	-55.12
11,375.0	0.29	327.20	11,354.2	-243.5	427.2	-228.5	0.41	-0.40	-14.52
11,400.0	0.33	343.74	11,379.2	-243.3	427.1	-228.4	0.39	0.16	66.16
11,425.0	0.35	327.18	11,404.2	-243.2	427.1	-228.3	0.40	0.08	-66.24
11,450.0	0.28	332.28	11,429.2	-243.1	427.0	-228.2	0.30	-0.28	20.40
11,475.0	0.51	326.93	11,454.2	-243.0	426.9	-228.0	0.93	0.92	-21.40
11,500.0	0.59	316.61	11,479.2	-242.8	426.8	-227.8	0.51	0.32	-41.28
11,525.0	0.99	311.32	11,504.2	-242.5	426.5	-227.6	1.62	1.60	-21.16
11,550.0	1.16	305.07	11,529.2	-242.2	426.1	-227.3	0.83	0.68	-25.00
11,575.0	1.40	304.79	11,554.2	-241.9	425.7	-227.0	0.96	0.96	-1.12
11,600.0	1.81	305.15	11,579.2	-241.5	425.1	-226.7	1.64	1.64	1.44
11,625.0	2.44	302.73	11,604.2	-241.0	424.3	-226.2	2.54	2.52	-9.68
11,650.0	2.69	305.57	11,629.2	-240.4	423.4	-225.6	1.12	1.00	11.36
11,675.0	2.86	303.57	11,654.1	-239.7	422.4	-224.9	0.78	0.68	-8.00
11,700.0	2.84	304.83	11,679.1	-239.0	421.4	-224.3	0.26	-0.08	5.04
11,725.0	2.86	304.60	11,704.1	-238.3	420.4	-223.6	0.09	0.08	-0.92
11,750.0	2.75	302.71	11,729.0	-237.6	419.3	-222.9	0.57	-0.44	-7.56
11,775.0	2.76	302.84	11,754.0	-237.0	418.3	-222.3	0.05	0.04	0.52
11,800.0	2.78	302.09	11,779.0	-236.3	417.3	-221.7	0.17	0.08	-3.00
11,825.0	2.96	302.97	11,803.9	-235.6	416.3	-221.1	0.74	0.72	3.52
11,850.0	3.36	307.28	11,828.9	-234.8	415.1	-220.3	1.86	1.60	17.24
11,875.0	3.92	311.45	11,853.9	-233.8	413.9	-219.4	2.48	2.24	16.68
11,900.0	4.41	312.67	11,878.8	-232.6	412.6	-218.2	1.99	1.96	4.88
11,925.0	4.71	312.13	11,903.7	-231.3	411.1	-216.9	1.21	1.20	-2.16
12,081.0	7.00	350.86	12,058.9	-217.6	404.8	-203.4	2.85	1.47	24.83
12,113.0	7.84	357.91	12,090.7	-213.5	404.4	-199.3	3.87	2.63	22.03
12,144.0	9.94	1.44	12,121.3	-208.7	404.4	-194.6	7.00	6.77	11.39
12,175.0	13.89	357.80	12,151.6	-202.3	404.4	-188.2	12.96	12.74	-11.74
12,206.0	18.17	357.09	12,181.4	-193.7	404.0	-179.6	13.82	13.81	-2.29
12,238.0	23.10	356.79	12,211.4	-182.5	403.4	-168.4	15.41	15.41	-0.94
12,270.0	26.38	358.06	12,240.4	-169.1	402.8	-155.1	10.38	10.25	3.97
12,301.0	30.59	358.29	12,267.7	-154.3	402.3	-140.3	13.59	13.58	0.74
12,333.0	34.95	0.30	12,294.6	-137.0	402.1	-123.0	14.04	13.63	6.28
12,364.0	37.01	1.83	12,319.6	-118.8	402.5	-104.8	7.25	6.65	4.94
12,395.0	39.74	5.45	12,343.9	-99.6	403.7	-85.6	11.40	8.81	11.68

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: BASEBALL CAP FED COM #603H
Wellbore: OWB
Design: AWP

Local Co-ordinate Reference: Well BASEBALL CAP FED COM #603H
TVD Reference: KB=26' @ 3413.7usft (IDC 205)
MD Reference: KB=26' @ 3413.7usft (IDC 205)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,427.0	40.68	7.72	12,368.4	-79.1	406.1	-65.0	5.44	2.94	7.09
12,451.2	40.48	7.23	12,386.8	-63.5	408.1	-49.3	1.55	-0.81	-2.03
FTP @ 12451.2'MD / 12866.8'TVD									
12,459.0	40.42	7.07	12,392.7	-58.5	408.7	-44.3	1.55	-0.81	-2.04
12,490.0	42.22	3.22	12,416.0	-38.1	410.6	-23.8	10.05	5.81	-12.42
12,521.0	44.12	1.18	12,438.6	-16.9	411.4	-2.6	7.60	6.13	-6.58
12,553.0	45.48	0.04	12,461.3	5.6	411.6	19.9	4.94	4.25	-3.56
12,584.0	48.71	359.56	12,482.4	28.3	411.5	42.6	10.48	10.42	-1.55
12,616.0	49.33	359.85	12,503.4	52.5	411.4	66.7	2.05	1.94	0.91
12,647.0	51.15	359.60	12,523.2	76.3	411.3	90.5	5.90	5.87	-0.81
12,679.0	55.08	359.62	12,542.4	101.9	411.1	116.1	12.28	12.28	0.06
12,710.0	60.13	0.14	12,559.0	128.1	411.1	142.3	16.35	16.29	1.68
12,742.0	63.66	0.67	12,574.1	156.3	411.3	170.5	11.13	11.03	1.66
12,774.0	68.59	0.18	12,587.0	185.6	411.5	199.7	15.47	15.41	-1.53
12,805.0	71.42	359.79	12,597.6	214.7	411.5	228.8	9.21	9.13	-1.26
12,836.0	73.26	359.88	12,607.0	244.2	411.4	258.3	5.94	5.94	0.29
12,867.0	77.44	359.12	12,614.9	274.2	411.1	288.3	13.69	13.48	-2.45
12,899.0	78.49	358.98	12,621.6	305.5	410.6	319.5	3.31	3.28	-0.44
12,930.0	79.69	358.87	12,627.4	335.9	410.0	349.9	3.89	3.87	-0.35
12,961.0	81.93	0.32	12,632.4	366.5	409.8	380.5	8.57	7.23	4.68
12,993.0	81.88	0.72	12,636.9	398.2	410.1	412.2	1.25	-0.16	1.25
13,024.0	83.78	359.78	12,640.7	429.0	410.2	442.9	6.83	6.13	-3.03
13,055.0	88.33	358.72	12,642.9	459.9	409.8	473.8	15.07	14.68	-3.42
13,149.0	88.59	359.56	12,645.4	553.8	408.4	567.7	0.94	0.28	0.89
13,243.0	89.05	359.03	12,647.3	647.8	407.3	661.5	0.75	0.49	-0.56
13,337.0	89.22	358.44	12,648.8	741.8	405.2	755.4	0.65	0.18	-0.63
13,431.0	88.22	358.22	12,650.9	835.7	402.5	849.2	1.09	-1.06	-0.23
13,526.0	89.28	357.55	12,652.9	930.6	398.9	943.9	1.32	1.12	-0.71
13,620.0	90.63	357.73	12,653.0	1,024.5	395.1	1,037.6	1.45	1.44	0.19
13,715.0	90.80	357.00	12,651.8	1,119.4	390.7	1,132.3	0.79	0.18	-0.77
13,808.0	91.32	355.76	12,650.1	1,212.2	384.8	1,224.8	1.45	0.56	-1.33
13,902.0	90.74	0.35	12,648.4	1,306.1	381.6	1,318.6	4.92	-0.62	4.88
13,996.0	90.51	1.09	12,647.4	1,400.1	382.8	1,412.5	0.82	-0.24	0.79
14,090.0	90.97	0.77	12,646.2	1,494.1	384.4	1,506.5	0.60	0.49	-0.34
14,184.0	91.12	0.81	12,644.5	1,588.1	385.7	1,600.5	0.17	0.16	0.04
14,278.0	91.00	0.81	12,642.7	1,682.1	387.0	1,694.4	0.13	-0.13	0.00
14,372.0	90.17	0.53	12,641.8	1,776.0	388.1	1,788.4	0.93	-0.88	-0.30
14,423.0	89.99	0.19	12,641.7	1,827.0	388.4	1,839.4	0.75	-0.35	-0.67
14,518.0	88.96	0.61	12,642.6	1,922.0	389.1	1,934.4	1.17	-1.08	0.44
14,612.0	88.84	359.98	12,644.4	2,016.0	389.5	2,028.3	0.68	-0.13	-0.67
14,706.0	88.61	0.27	12,646.5	2,110.0	389.8	2,122.2	0.39	-0.24	0.31
14,800.0	88.01	359.98	12,649.2	2,204.0	390.0	2,216.1	0.71	-0.64	-0.31
14,894.0	89.73	359.45	12,651.1	2,297.9	389.5	2,310.0	1.91	1.83	-0.56
14,988.0	90.14	359.05	12,651.2	2,391.9	388.3	2,403.9	0.61	0.44	-0.43

Survey Report

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Project: LEA COUNTY, NM
Site: BULLDOG
Well: BASEBALL CAP FED COM #603H
Wellbore: OWB
Design: AWP

Local Co-ordinate Reference: Well BASEBALL CAP FED COM #603H
TVD Reference: KB=26' @ 3413.7usft (IDC 205)
MD Reference: KB=26' @ 3413.7usft (IDC 205)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,081.0	89.96	358.96	12,651.1	2,484.9	386.6	2,496.8	0.22	-0.19	-0.10
15,176.0	89.82	358.98	12,651.3	2,579.9	384.9	2,591.7	0.15	-0.15	0.02
15,270.0	91.11	359.47	12,650.5	2,673.9	383.7	2,685.6	1.47	1.37	0.52
15,364.0	91.31	359.41	12,648.5	2,767.9	382.7	2,779.4	0.22	0.21	-0.06
15,458.0	91.20	359.50	12,646.5	2,861.8	381.9	2,873.3	0.15	-0.12	0.10
15,552.0	90.97	359.32	12,644.7	2,955.8	380.9	2,967.2	0.31	-0.24	-0.19
15,646.0	90.80	359.15	12,643.2	3,049.8	379.6	3,061.1	0.26	-0.18	-0.18
15,740.0	90.80	359.05	12,641.9	3,143.8	378.2	3,155.0	0.11	0.00	-0.11
15,834.0	90.65	358.98	12,640.7	3,237.7	376.5	3,248.8	0.18	-0.16	-0.07
15,928.0	90.88	358.92	12,639.5	3,331.7	374.8	3,342.7	0.25	0.24	-0.06
16,022.0	90.62	359.17	12,638.3	3,425.7	373.2	3,436.6	0.38	-0.28	0.27
16,116.0	91.08	358.53	12,636.9	3,519.7	371.4	3,530.4	0.84	0.49	-0.68
16,210.0	91.20	0.31	12,635.0	3,613.6	370.4	3,624.3	1.90	0.13	1.89
16,305.0	91.95	1.13	12,632.4	3,708.6	371.6	3,719.2	1.17	0.79	0.86
16,399.0	92.38	1.35	12,628.8	3,802.5	373.6	3,813.2	0.51	0.46	0.23
16,493.0	92.00	1.33	12,625.2	3,896.4	375.8	3,907.1	0.40	-0.40	-0.02
16,586.0	91.48	1.30	12,622.4	3,989.3	378.0	4,000.0	0.56	-0.56	-0.03
16,680.0	91.26	1.12	12,620.2	4,083.3	380.0	4,094.0	0.30	-0.23	-0.19
16,774.0	91.63	1.27	12,617.8	4,177.2	381.9	4,188.0	0.42	0.39	0.16
16,867.0	92.26	1.46	12,614.6	4,270.2	384.1	4,280.9	0.71	0.68	0.20
16,961.0	93.87	0.96	12,609.6	4,364.0	386.1	4,374.8	1.79	1.71	-0.53
17,055.0	91.86	1.94	12,604.9	4,457.8	388.5	4,468.6	2.38	-2.14	1.04
17,150.0	91.74	2.14	12,601.9	4,552.7	391.9	4,563.6	0.25	-0.13	0.21
17,244.0	91.28	1.99	12,599.5	4,646.6	395.2	4,657.5	0.51	-0.49	-0.16
17,338.0	92.98	2.93	12,596.0	4,740.5	399.3	4,751.5	2.07	1.81	1.00
17,432.0	92.00	2.39	12,591.9	4,834.3	403.6	4,845.4	1.19	-1.04	-0.57
17,526.0	89.47	1.60	12,590.7	4,928.2	406.9	4,939.4	2.82	-2.69	-0.84
17,621.0	88.93	0.25	12,592.0	5,023.2	408.4	5,034.3	1.53	-0.57	-1.42
17,715.0	89.88	358.68	12,593.0	5,117.2	407.6	5,128.2	1.95	1.01	-1.67
17,810.0	90.39	357.88	12,592.8	5,212.1	404.7	5,223.0	1.00	0.54	-0.84
17,904.0	91.34	356.81	12,591.3	5,306.0	400.4	5,316.7	1.52	1.01	-1.14
17,999.0	92.35	355.77	12,588.3	5,400.8	394.2	5,411.2	1.53	1.06	-1.09
18,093.0	94.27	356.48	12,582.8	5,494.4	387.9	5,504.5	2.18	2.04	0.76
18,186.0	93.99	356.65	12,576.2	5,587.0	382.3	5,596.9	0.35	-0.30	0.18
18,280.0	94.10	356.80	12,569.5	5,680.6	377.0	5,690.3	0.20	0.12	0.16
18,374.0	93.84	357.01	12,563.0	5,774.2	371.9	5,783.7	0.36	-0.28	0.22
18,468.0	92.81	358.16	12,557.6	5,868.0	367.9	5,877.2	1.64	-1.10	1.22
18,562.0	92.78	358.61	12,553.0	5,961.9	365.3	5,970.9	0.48	-0.03	0.48
18,657.0	92.92	358.53	12,548.3	6,056.7	362.9	6,065.6	0.17	0.15	-0.08
18,750.0	93.41	358.88	12,543.1	6,149.5	360.8	6,158.3	0.65	0.53	0.38
18,844.0	93.64	359.18	12,537.3	6,243.3	359.2	6,252.0	0.40	0.24	0.32
18,938.0	92.89	359.53	12,532.0	6,337.2	358.2	6,345.8	0.88	-0.80	0.37
19,032.0	92.89	359.73	12,527.2	6,431.1	357.6	6,439.6	0.21	0.00	0.21

Survey Report

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Local Co-ordinate Reference: Well BASEBALL CAP FED COM #603H
TVD Reference: KB=26' @ 3413.7usft (IDC 205)
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North Reference: Grid
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Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
19,126.0	92.86	0.42	12,522.5	6,524.9	357.7	6,533.4	0.73	-0.03	0.73
19,221.0	91.43	0.83	12,519.0	6,619.9	358.7	6,628.3	1.57	-1.51	0.43
19,314.0	92.06	0.52	12,516.1	6,712.8	359.8	6,721.3	0.75	0.68	-0.33
19,409.0	89.59	0.43	12,514.8	6,807.8	360.6	6,816.2	2.60	-2.60	-0.09
19,503.0	89.07	359.39	12,515.9	6,901.8	360.5	6,910.1	1.24	-0.55	-1.11
19,597.0	91.83	359.13	12,515.1	6,995.8	359.3	7,004.0	2.95	2.94	-0.28
19,691.0	91.66	359.31	12,512.3	7,089.7	358.0	7,097.9	0.26	-0.18	0.19
19,785.0	92.12	359.66	12,509.2	7,183.7	357.1	7,191.7	0.61	0.49	0.37
19,879.0	92.09	359.82	12,505.7	7,277.6	356.7	7,285.6	0.17	-0.03	0.17
19,973.0	92.12	358.88	12,502.3	7,371.5	355.6	7,379.4	1.00	0.03	-1.00
20,067.0	91.60	359.74	12,499.2	7,465.5	354.5	7,473.3	1.07	-0.55	0.91
20,161.0	91.57	359.91	12,496.6	7,559.4	354.2	7,567.2	0.18	-0.03	0.18
20,255.0	92.06	0.53	12,493.6	7,653.4	354.6	7,661.1	0.84	0.52	0.66
20,349.0	92.29	0.41	12,490.1	7,747.3	355.4	7,755.0	0.28	0.24	-0.13
20,443.0	92.61	0.72	12,486.1	7,841.2	356.3	7,848.9	0.47	0.34	0.33
20,536.0	92.98	1.02	12,481.5	7,934.1	357.7	7,941.7	0.51	0.40	0.32
20,631.0	92.46	0.89	12,477.0	8,029.0	359.3	8,036.6	0.56	-0.55	-0.14
20,725.0	92.69	1.46	12,472.8	8,122.9	361.2	8,130.5	0.65	0.24	0.61
20,819.0	93.44	1.38	12,467.8	8,216.7	363.5	8,224.4	0.80	0.80	-0.09
20,899.0	92.66	0.02	12,463.5	8,296.6	364.5	8,304.2	1.96	-0.98	-1.70
20,993.0	90.08	358.30	12,461.3	8,390.5	363.1	8,398.1	3.30	-2.74	-1.83
21,086.0	89.96	357.49	12,461.2	8,483.5	359.7	8,490.8	0.88	-0.13	-0.87
21,180.0	90.28	358.29	12,461.0	8,577.4	356.2	8,584.6	0.92	0.34	0.85
21,275.0	91.77	358.87	12,459.3	8,672.4	353.9	8,679.4	1.68	1.57	0.61
21,369.0	92.35	358.87	12,456.0	8,766.3	352.0	8,773.2	0.62	0.62	0.00
21,463.0	92.20	358.92	12,452.2	8,860.2	350.2	8,867.0	0.17	-0.16	0.05
21,557.0	92.69	358.91	12,448.2	8,954.1	348.5	8,960.8	0.52	0.52	-0.01
21,651.0	92.66	359.30	12,443.8	9,048.0	347.0	9,054.6	0.42	-0.03	0.41
21,745.0	90.51	359.41	12,441.2	9,141.9	345.9	9,148.4	2.29	-2.29	0.12
21,840.0	90.51	359.06	12,440.4	9,236.9	344.7	9,243.3	0.37	0.00	-0.37
21,931.0	90.59	358.96	12,439.5	9,327.9	343.1	9,334.2	0.14	0.09	-0.11
22,023.0	91.34	358.46	12,438.0	9,419.9	341.0	9,426.0	0.98	0.82	-0.54
22,114.0	91.97	358.67	12,435.3	9,510.8	338.7	9,516.8	0.73	0.69	0.23
22,204.0	91.00	359.78	12,433.0	9,600.8	337.5	9,606.7	1.64	-1.08	1.23
22,296.0	91.11	359.75	12,431.3	9,692.7	337.1	9,698.6	0.12	0.12	-0.03
22,387.0	91.66	359.88	12,429.1	9,783.7	336.9	9,789.5	0.62	0.60	0.14
22,479.0	92.35	0.06	12,425.9	9,875.6	336.8	9,881.4	0.78	0.75	0.20
22,496.4	92.47	0.07	12,425.1	9,893.0	336.8	9,898.8	0.70	0.70	0.05
LTP @ 22496.4'MD / 12425.1'TVD									
22,556.0	92.89	0.10	12,422.4	9,952.6	336.9	9,958.3	0.70	0.70	0.05
Last MWD Svy @ 22556'MD									
22,626.0	92.89	0.10	12,418.8	10,022.5	337.0	10,028.1	0.00	0.00	0.00
PTD @ 22626'MD / 12418.8'TVD									

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BASEBALL CAP FED COM #603H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3413.7usft (IDC 205)
Site:	BULLDOG	MD Reference:	KB=26' @ 3413.7usft (IDC 205)
Well:	BASEBALL CAP FED COM #603H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWP	Database:	EDM_Users

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
12,451.2	12,386.8	-63.5	408.1	FTP @ 12451.2'MD / 12866.8'TVD
22,496.4	12,425.1	9,893.0	336.8	LTP @ 22496.4'MD / 12425.1'TVD
22,556.0	12,422.4	9,952.6	336.9	Last MWD Svy @ 22556'MD
22,626.0	12,418.8	10,022.5	337.0	PTD @ 22626'MD / 12418.8'TVD

Checked By: _____	Approved By: _____	Date: _____
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