

COG

EIDER 23 FEDERAL #702H

SCAN DRILL QUEST

11/1/2019

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

JAKE ELGER

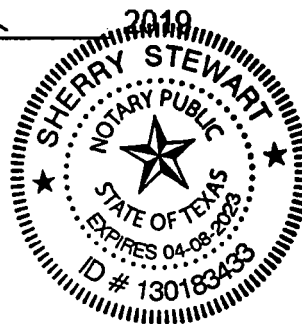
Notarized this date 06 of DECEMBER

Sherry Stewart

Notary Signature

County of Midland

State of Texas



Scientific Drilling

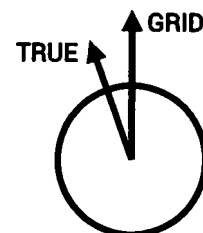
The

In Wellbore Placement

SURVEY REPORT

EIDER 23 FEDERAL #702H

KEEPER GYRO SURVEY

CUSTOMER
PROJECT
FIELDCOG
Eider 23 Federal #702H Keeper Gyro Survey
N/ASDI JOB NO.
SDI DISTRICT
SDI KIT/UNITOP.000000
Midland**SITE INFORMATION**Site Name Lea County, New Mexico
Lat/Long 32.2090613° N , 103.6428019° W
Northing 440,462 ft
Easting 713,576.2 ftSection
Township
Range**MAP INFORMATION**North Reference Grid North
Grid Correction -0.37 deg
System US State Plane 1927
Datum North American Datum 1927 (Clarke 1866)
Map Zone New Mexico East: 3001**WELL INFORMATION**Lat/Long 32.2090621° N , 103.6427049° W
Northing 440,462.5 ft
Easting 713,606.2 ft
UWI 30-025-46381**DEPTH AND ELEVATION REFERENCE**Ground Level 3567.3 ft above Mean Sea
Level
Reference Datum RKB
Reference Height 30 ft above G.L.
Reference Elevation 3597.3 ft**VERTICAL SECTION REFERENCE**+N/-S 0 ft
+E/-W 0 ft
Proposal Direction 169.80°
Calculation Method Minimum Curvature**LOCAL GRAVITY REFERENCE INFORMATION**Local Gravity 998.483 mG [computed]
True to Grid subtract 0.37°**WELL NOTES**

Eider 23 Federal #702H Keeper Gyro Survey

OPERATORS

Jeffrey Loyd

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	0.35	16.20	100.00	-0.27	0.29	0.09	0.35	0.31	16.20
125.00	0.36	10.31	125.00	-0.42	0.44	0.12	0.16	0.46	15.19
150.00	0.45	21.51	150.00	-0.57	0.61	0.17	0.46	0.64	15.55
175.00	0.58	20.35	175.00	-0.77	0.82	0.25	0.52	0.86	16.93
200.00	0.67	21.21	200.00	-1.00	1.08	0.35	0.38	1.13	17.86
225.00	0.72	18.13	224.99	-1.26	1.36	0.45	0.26	1.44	18.23
250.00	0.76	13.69	249.99	-1.55	1.68	0.54	0.27	1.76	17.79
275.00	0.73	5.77	274.99	-1.86	1.99	0.59	0.44	2.08	16.56
300.00	0.75	7.59	299.99	-2.17	2.31	0.63	0.15	2.40	15.24
325.00	0.74	11.84	324.99	-2.47	2.64	0.69	0.23	2.72	14.58
350.00	0.79	13.64	349.98	-2.78	2.96	0.76	0.23	3.06	14.38
375.00	0.84	13.23	374.98	-3.11	3.31	0.84	0.20	3.42	14.28
400.00	0.87	7.18	399.98	-3.46	3.68	0.91	0.38	3.79	13.87
425.00	0.82	4.64	424.98	-3.81	4.05	0.95	0.25	4.16	13.17
450.00	0.76	7.55	449.97	-4.15	4.39	0.98	0.29	4.50	12.63
475.00	0.78	9.73	474.97	-4.46	4.72	1.03	0.13	4.83	12.35
500.00	0.86	13.03	499.97	-4.79	5.07	1.10	0.38	5.19	12.29
525.00	0.89	5.57	524.97	-5.15	5.45	1.17	0.47	5.57	12.08
550.00	0.82	6.15	549.96	-5.51	5.82	1.20	0.25	5.94	11.69
575.00	0.76	6.36	574.96	-5.84	6.16	1.24	0.25	6.28	11.39
600.00	0.80	14.11	599.96	-6.16	6.50	1.30	0.45	6.62	11.34
625.00	0.87	14.51	624.95	-6.49	6.85	1.39	0.28	6.99	11.49
650.00	0.86	5.65	649.95	-6.84	7.22	1.46	0.53	7.36	11.42
675.00	0.79	7.13	674.95	-7.19	7.57	1.50	0.28	7.72	11.19
700.00	0.78	8.67	699.95	-7.52	7.91	1.55	0.09	8.06	11.05
725.00	0.85	10.88	724.94	-7.85	8.27	1.61	0.30	8.42	10.99
750.00	0.94	5.36	749.94	-8.22	8.65	1.66	0.49	8.81	10.86
775.00	0.93	2.02	774.94	-8.62	9.06	1.69	0.22	9.21	10.55
800.00	0.92	359.97	799.94	-9.01	9.46	1.69	0.13	9.61	10.15
825.00	0.92	357.99	824.93	-9.41	9.86	1.69	0.13	10.01	9.70
850.00	0.93	2.77	849.93	-9.80	10.27	1.69	0.31	10.40	9.34

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	1.01	1.51	874.92	-10.22	10.69	1.70	0.32	10.82	9.06
900.00	1.11	355.25	899.92	-10.67	11.15	1.69	0.61	11.28	8.62
925.00	1.18	344.21	924.92	-11.17	11.64	1.60	0.93	11.75	7.83
950.00	1.19	339.38	949.91	-11.68	12.13	1.44	0.40	12.22	6.76
975.00	1.21	337.49	974.90	-12.20	12.62	1.25	0.19	12.68	5.64
1000.00	1.25	339.55	999.90	-12.73	13.12	1.05	0.22	13.16	4.57
1025.00	1.41	336.14	1024.89	-13.29	13.66	0.83	0.74	13.68	3.47
1050.00	1.40	334.10	1049.88	-13.89	14.21	0.57	0.21	14.23	2.30
1075.00	1.36	331.89	1074.88	-14.46	14.75	0.30	0.28	14.75	1.15
1100.00	1.30	336.07	1099.87	-15.02	15.27	0.04	0.45	15.27	0.16
1125.00	1.40	338.00	1124.86	-15.60	15.81	-0.19	0.43	15.82	359.32
1150.00	1.45	339.39	1149.86	-16.21	16.39	-0.41	0.25	16.40	358.56
1175.00	1.42	338.43	1174.85	-16.82	16.98	-0.64	0.16	16.99	357.85
1200.00	1.39	341.17	1199.84	-17.42	17.55	-0.85	0.30	17.57	357.23
1225.00	1.46	343.86	1224.83	-18.04	18.14	-1.04	0.40	18.17	356.73
1250.00	1.49	343.78	1249.82	-18.68	18.76	-1.21	0.12	18.80	356.29
1275.00	1.24	346.33	1274.82	-19.27	19.34	-1.37	1.02	19.38	355.95
1300.00	0.53	45.07	1299.81	-19.61	19.68	-1.35	4.27	19.73	356.07
1325.00	0.61	70.79	1324.81	-19.70	19.81	-1.14	1.05	19.84	356.69
1350.00	0.71	72.67	1349.81	-19.74	19.90	-0.87	0.42	19.92	357.49
1375.00	0.71	66.26	1374.81	-19.79	20.00	-0.58	0.32	20.01	358.33
1400.00	0.64	82.20	1399.81	-19.82	20.09	-0.30	0.79	20.09	359.14
1425.00	0.93	122.40	1424.81	-19.68	20.00	0.01	2.41	20.00	0.02
1450.00	1.56	139.82	1449.80	-19.25	19.63	0.40	2.93	19.63	1.16
1475.00	1.81	141.52	1474.79	-18.60	19.06	0.86	1.01	19.08	2.60
1500.00	1.78	141.56	1499.78	-17.91	18.44	1.35	0.10	18.49	4.19
1525.00	1.70	142.39	1524.77	-17.24	17.85	1.82	0.34	17.94	5.83
1550.00	1.76	145.40	1549.75	-16.56	17.24	2.26	0.42	17.38	7.49
1575.00	1.86	144.83	1574.74	-15.85	16.59	2.72	0.41	16.81	9.30
1600.00	1.78	143.15	1599.73	-15.13	15.95	3.18	0.36	16.26	11.29
1625.00	1.79	142.28	1624.72	-14.44	15.33	3.65	0.11	15.76	13.41
1650.00	1.78	145.48	1649.70	-13.74	14.70	4.11	0.40	15.26	15.63

SURVEY REPORT

EIDER 23 FEDERAL #702H

KEEPER GYRO SURVEY

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	1.87	146.69	1674.69	-13.01	14.04	4.56	0.39	14.76	17.99
1700.00	1.90	144.06	1699.68	-12.26	13.36	5.02	0.37	14.27	20.61
1725.00	1.85	143.12	1724.67	-11.53	12.70	5.51	0.24	13.85	23.45
1750.00	1.80	144.24	1749.65	-10.81	12.06	5.98	0.25	13.46	26.38
1775.00	1.85	145.64	1774.64	-10.09	11.41	6.44	0.26	13.10	29.43
1800.00	1.90	145.87	1799.63	-9.34	10.74	6.90	0.21	12.76	32.72
1825.00	1.88	143.20	1824.61	-8.60	10.06	7.38	0.36	12.48	36.24
1850.00	1.76	146.52	1849.60	-7.88	9.41	7.83	0.66	12.25	39.76
1875.00	1.50	154.42	1874.59	-7.21	8.80	8.19	1.35	12.02	42.94
1900.00	1.08	185.49	1899.58	-6.67	8.27	8.31	3.22	11.72	45.13
1925.00	0.91	205.89	1924.58	-6.28	7.86	8.20	1.55	11.35	46.22
1950.00	0.89	221.28	1949.58	-6.00	7.53	7.98	0.97	10.97	46.67
1975.00	1.02	229.40	1974.57	-5.76	7.24	7.68	0.74	10.56	46.71
2000.00	1.07	225.43	1999.57	-5.52	6.93	7.35	0.36	10.10	46.68
2025.00	1.02	225.11	2024.57	-5.26	6.61	7.02	0.21	9.64	46.74
2050.00	0.97	226.83	2049.56	-5.02	6.31	6.71	0.21	9.21	46.78
2075.00	1.03	233.48	2074.56	-4.80	6.03	6.38	0.52	8.77	46.61
2100.00	1.07	229.86	2099.55	-4.59	5.74	6.02	0.31	8.32	46.33
2125.00	1.02	229.16	2124.55	-4.36	5.45	5.67	0.20	7.86	46.15
2150.00	0.94	232.50	2149.55	-4.15	5.17	5.34	0.40	7.43	45.88
2175.00	1.02	238.86	2174.54	-3.97	4.93	4.98	0.54	7.01	45.28
2200.00	1.04	232.85	2199.54	-3.79	4.68	4.61	0.44	6.57	44.56
2225.00	0.97	231.48	2224.53	-3.59	4.41	4.27	0.28	6.14	44.02
2250.00	0.90	238.81	2249.53	-3.42	4.18	3.93	0.55	5.74	43.24
2275.00	1.04	239.70	2274.53	-3.27	3.96	3.57	0.54	5.33	41.98
2300.00	0.99	233.43	2299.52	-3.10	3.72	3.20	0.48	4.90	40.67
2325.00	0.95	236.70	2324.52	-2.92	3.48	2.85	0.29	4.50	39.34
2350.00	0.94	240.71	2349.52	-2.77	3.26	2.50	0.27	4.11	37.44
2375.00	1.03	240.33	2374.51	-2.63	3.05	2.12	0.39	3.72	34.84
2400.00	0.98	235.43	2399.51	-2.46	2.82	1.75	0.42	3.32	31.87
2425.00	0.71	231.98	2424.51	-2.30	2.60	1.46	1.09	2.98	29.22
2450.00	0.42	206.15	2449.51	-2.16	2.43	1.29	1.50	2.75	28.08

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	0.79	119.26	2474.50	-1.98	2.26	1.40	3.50	2.66	31.86
2500.00	1.10	102.80	2499.50	-1.77	2.12	1.79	1.65	2.78	40.14
2525.00	1.06	99.74	2524.50	-1.60	2.03	2.25	0.29	3.03	47.98
2550.00	1.08	105.86	2549.49	-1.42	1.93	2.71	0.46	3.32	54.56
2575.00	1.14	102.78	2574.49	-1.22	1.81	3.18	0.35	3.65	60.36
2600.00	1.12	100.42	2599.48	-1.03	1.71	3.66	0.20	4.04	64.98
2625.00	1.36	93.99	2624.48	-0.87	1.64	4.20	1.11	4.51	68.61
2650.00	1.94	79.45	2649.47	-0.80	1.70	4.91	2.85	5.19	70.89
2675.00	2.30	71.14	2674.45	-0.88	1.94	5.80	1.88	6.11	71.50
2700.00	2.68	70.59	2699.43	-1.05	2.30	6.82	1.52	7.20	71.40
2725.00	3.31	66.50	2724.39	-1.31	2.78	8.04	2.68	8.50	70.93
2750.00	4.35	66.03	2749.33	-1.70	3.45	9.57	4.14	10.17	70.16
2775.00	4.94	66.10	2774.25	-2.18	4.27	11.42	2.35	12.19	69.48
2800.00	5.22	65.63	2799.15	-2.72	5.18	13.44	1.14	14.40	68.92
2825.00	5.64	67.70	2824.04	-3.25	6.11	15.61	1.85	16.76	68.61
2850.00	6.90	69.63	2848.89	-3.78	7.10	18.15	5.12	19.49	68.63
2875.00	7.16	69.42	2873.70	-4.32	8.17	21.02	1.04	22.55	68.75
2900.00	7.22	70.36	2898.51	-4.86	9.25	23.96	0.54	25.68	68.89
2925.00	7.40	73.44	2923.30	-5.30	10.23	26.98	1.71	28.86	69.23
2950.00	7.51	78.73	2948.09	-5.50	11.01	30.12	2.78	32.07	69.92
2975.00	7.58	80.27	2972.88	-5.52	11.61	33.35	0.86	35.31	70.80
3000.00	7.76	80.74	2997.65	-5.48	12.16	36.64	0.76	38.61	71.64
3025.00	8.49	80.37	3022.40	-5.43	12.74	40.13	2.94	42.10	72.38
3050.00	9.70	78.44	3047.09	-5.47	13.47	44.01	4.99	46.03	72.98
3075.00	10.11	77.92	3071.72	-5.59	14.35	48.22	1.65	50.31	73.42
3100.00	10.23	77.85	3096.32	-5.73	15.28	52.53	0.50	54.71	73.78
3125.00	10.36	77.80	3120.92	-5.89	16.22	56.90	0.54	59.17	74.09
3150.00	10.45	77.48	3145.51	-6.06	17.19	61.31	0.43	63.68	74.34
3175.00	10.64	76.64	3170.09	-6.28	18.21	65.77	0.97	68.25	74.52
3200.00	10.63	76.63	3194.66	-6.53	19.28	70.26	0.06	72.86	74.66
3225.00	10.46	76.70	3219.23	-6.78	20.34	74.71	0.68	77.43	74.77
3250.00	10.48	76.89	3243.82	-7.02	21.37	79.14	0.17	81.97	74.89

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	10.60	76.75	3268.40	-7.26	22.42	83.59	0.47	86.54	74.99
3300.00	10.83	76.76	3292.96	-7.51	23.48	88.11	0.92	91.19	75.08
3325.00	10.71	76.74	3317.52	-7.75	24.55	92.66	0.48	95.86	75.16
3350.00	10.60	76.84	3342.09	-8.00	25.61	97.16	0.46	100.48	75.24
3375.00	10.52	76.46	3366.67	-8.25	26.66	101.62	0.43	105.06	75.30
3400.00	10.36	73.23	3391.25	-8.64	27.85	105.99	2.42	109.58	75.28
3425.00	10.37	70.21	3415.85	-9.27	29.26	110.26	2.18	114.07	75.14
3450.00	10.12	68.89	3440.45	-10.06	30.81	114.42	1.38	118.50	74.93
3475.00	9.99	69.38	3465.06	-10.87	32.37	118.50	0.62	122.84	74.72
3500.00	9.88	68.82	3489.69	-11.67	33.90	122.53	0.57	127.14	74.53
3525.00	9.85	69.29	3514.32	-12.47	35.44	126.53	0.35	131.40	74.35
3550.00	9.71	68.62	3538.95	-13.27	36.96	130.50	0.73	135.63	74.19
3575.00	9.56	68.55	3563.60	-14.08	38.49	134.39	0.61	139.79	74.02
3600.00	9.52	69.00	3588.26	-14.87	39.99	138.25	0.32	143.92	73.87
3625.00	9.51	69.38	3612.91	-15.64	41.46	142.12	0.26	148.04	73.74
3650.00	9.51	68.70	3637.57	-16.41	42.93	145.97	0.45	152.16	73.61
3675.00	9.45	69.62	3662.23	-17.17	44.40	149.82	0.65	156.26	73.49
3700.00	9.51	70.02	3686.89	-17.88	45.82	153.69	0.37	160.37	73.40
3725.00	9.47	69.74	3711.54	-18.59	47.24	157.56	0.24	164.49	73.31
3750.00	9.45	69.98	3736.20	-19.30	48.65	161.41	0.18	168.59	73.23
3775.00	9.56	69.27	3760.86	-20.03	50.09	165.28	0.65	172.71	73.14
3800.00	9.23	69.87	3785.52	-20.75	51.52	169.11	1.37	176.78	73.06
3825.00	9.09	70.65	3810.21	-21.41	52.86	172.86	0.76	180.76	73.00
3850.00	9.13	70.71	3834.89	-22.04	54.17	176.59	0.16	184.71	72.95
3875.00	9.05	69.86	3859.58	-22.69	55.50	180.31	0.62	188.66	72.89
3900.00	8.85	70.74	3884.27	-23.34	56.81	183.97	0.96	192.54	72.84
3925.00	8.86	70.15	3908.97	-23.96	58.10	187.60	0.37	196.39	72.79
3950.00	8.67	69.43	3933.68	-24.62	59.42	191.17	0.88	200.19	72.73
3975.00	8.75	69.59	3958.39	-25.30	60.74	194.72	0.31	203.97	72.67
4000.00	8.76	69.89	3983.10	-25.97	62.06	198.29	0.19	207.77	72.62
4025.00	8.89	69.25	4007.81	-26.65	63.40	201.88	0.64	211.60	72.57
4050.00	8.76	69.86	4032.51	-27.33	64.74	205.48	0.62	215.43	72.51

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	"/100ft	ft	deg
4075.00	9.10	69.59	4057.21	-28.01	66.08	209.12	1.34	219.31	72.46
4100.00	9.22	70.12	4081.89	-28.69	67.45	212.85	0.60	223.29	72.42
4125.00	9.46	70.93	4106.56	-29.35	68.81	216.68	1.09	227.34	72.38
4150.00	9.80	71.92	4131.20	-29.96	70.14	220.64	1.51	231.52	72.37
4175.00	10.14	74.49	4155.83	-30.45	71.39	224.79	2.23	235.85	72.38
4200.00	10.49	75.22	4180.42	-30.84	72.56	229.11	1.53	240.32	72.43
4225.00	10.40	75.55	4205.01	-31.19	73.70	233.49	0.44	244.85	72.48
4250.00	10.36	76.62	4229.60	-31.48	74.78	237.87	0.78	249.35	72.55
4275.00	10.38	78.43	4254.19	-31.66	75.76	242.26	1.31	253.83	72.64
4300.00	10.38	78.99	4278.78	-31.74	76.64	246.68	0.40	258.31	72.74
4325.00	10.26	79.38	4303.38	-31.79	77.48	251.08	0.54	262.76	72.85
4350.00	10.26	79.41	4327.98	-31.82	78.30	255.45	0.03	267.18	72.96
4375.00	10.15	80.81	4352.58	-31.80	79.06	259.82	1.08	271.58	73.08
4400.00	10.14	80.91	4377.19	-31.72	79.76	264.16	0.08	275.94	73.20
4425.00	10.11	80.97	4401.80	-31.63	80.45	268.50	0.11	280.30	73.32
4450.00	10.20	80.61	4426.41	-31.55	81.16	272.86	0.43	284.67	73.44
4475.00	10.36	80.43	4451.01	-31.50	81.89	277.26	0.65	289.10	73.55
4500.00	10.18	80.78	4475.61	-31.44	82.62	281.65	0.77	293.52	73.65
4525.00	10.50	81.97	4500.20	-31.31	83.29	286.09	1.54	297.97	73.77
4550.00	11.12	81.57	4524.76	-31.15	83.96	290.73	2.53	302.61	73.89
4575.00	11.45	82.96	4549.28	-30.94	84.62	295.58	1.70	307.45	74.02
4600.00	11.49	82.81	4573.78	-30.67	85.23	300.51	0.21	312.37	74.17
4625.00	11.51	82.24	4598.27	-30.43	85.88	305.45	0.46	317.30	74.30
4650.00	11.42	82.62	4622.78	-30.21	86.54	310.38	0.48	322.22	74.42
4675.00	11.48	82.03	4647.28	-29.99	87.20	315.30	0.53	327.13	74.54
4700.00	11.59	80.57	4671.77	-29.86	87.96	320.24	1.25	332.10	74.64
4725.00	11.57	80.59	4696.26	-29.79	88.78	325.19	0.05	337.09	74.73
4750.00	11.35	80.18	4720.77	-29.74	89.61	330.09	0.94	342.03	74.81
4775.00	11.37	79.90	4745.28	-29.72	90.46	334.94	0.22	346.94	74.89
4800.00	11.18	78.69	4769.79	-29.76	91.37	339.74	1.20	351.81	74.95
4825.00	11.06	74.66	4794.32	-30.02	92.48	344.43	3.15	356.63	74.97
4850.00	10.77	71.18	4818.87	-30.59	93.86	348.95	2.88	361.36	74.94

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	10.49	69.49	4843.44	-31.34	95.42	353.30	1.69	365.95	74.89
4900.00	10.51	68.37	4868.02	-32.20	97.05	357.55	0.82	370.48	74.81
4925.00	10.23	67.62	4892.62	-33.12	98.74	361.72	1.22	374.95	74.73
4950.00	10.24	67.07	4917.22	-34.08	100.45	365.82	0.40	379.36	74.65
4975.00	10.17	67.11	4941.82	-35.06	102.17	369.90	0.30	383.75	74.56
5000.00	10.01	67.42	4966.44	-36.01	103.87	373.94	0.67	388.10	74.48
5025.00	10.00	68.81	4991.06	-36.89	105.49	377.97	0.97	392.41	74.41
5050.00	10.01	69.39	5015.68	-37.69	107.03	382.03	0.41	396.74	74.35
5075.00	10.10	69.28	5040.29	-38.49	108.58	386.11	0.34	401.09	74.29
5100.00	9.95	69.24	5064.91	-39.28	110.12	390.18	0.61	405.42	74.24
5125.00	10.06	69.66	5089.53	-40.06	111.64	394.24	0.53	409.75	74.19
5150.00	10.19	69.27	5114.14	-40.85	113.18	398.36	0.59	414.13	74.14
5175.00	10.29	69.24	5138.74	-41.66	114.76	402.52	0.41	418.55	74.09
5200.00	10.23	69.32	5163.34	-42.48	116.33	406.68	0.25	422.99	74.04
5225.00	10.42	68.88	5187.94	-43.31	117.93	410.87	0.83	427.45	73.98
5250.00	10.32	68.53	5212.53	-44.17	119.56	415.06	0.48	431.94	73.93
5275.00	10.42	69.11	5237.12	-45.03	121.19	419.25	0.58	436.42	73.88
5300.00	10.42	68.93	5261.71	-45.88	122.81	423.47	0.13	440.92	73.83
5325.00	10.41	68.49	5286.30	-46.75	124.45	427.69	0.32	445.43	73.78
5350.00	10.59	68.65	5310.88	-47.63	126.12	431.93	0.72	449.96	73.72
5375.00	10.47	68.03	5335.46	-48.54	127.80	436.18	0.66	454.51	73.67
5400.00	10.55	68.01	5360.04	-49.47	129.51	440.41	0.32	459.05	73.61
5425.00	10.63	67.78	5384.61	-50.42	131.24	444.66	0.37	463.63	73.56
5450.00	10.46	67.36	5409.19	-51.39	132.98	448.89	0.76	468.18	73.50
5475.00	10.40	67.06	5433.78	-52.38	134.74	453.06	0.32	472.68	73.44
5500.00	10.29	66.36	5458.37	-53.39	136.51	457.19	0.67	477.13	73.37
5525.00	10.44	66.64	5482.96	-54.43	138.31	461.31	0.63	481.60	73.31
5550.00	10.43	66.38	5507.55	-55.47	140.11	465.46	0.19	486.09	73.25
5575.00	10.14	68.40	5532.15	-56.43	141.83	469.58	1.85	490.53	73.19
5600.00	10.07	70.13	5556.76	-57.23	143.38	473.68	1.24	494.91	73.16
5625.00	10.01	70.56	5581.38	-57.95	144.85	477.79	0.38	499.26	73.13
5650.00	10.02	70.33	5606.00	-58.65	146.30	481.89	0.16	503.61	73.11

SURVEY REPORT

EIDER 23 FEDERAL #702H

KEEPER GYRO SURVEY

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	10.26	69.64	5630.61	-59.40	147.81	486.02	1.07	508.00	73.08
5700.00	10.24	70.06	5655.21	-60.17	149.34	490.20	0.31	512.44	73.06
5725.00	10.18	70.19	5679.81	-60.92	150.85	494.36	0.25	516.87	73.03
5750.00	10.20	69.82	5704.42	-61.67	152.36	498.52	0.28	521.28	73.01
5775.00	10.18	70.14	5729.02	-62.42	153.87	502.68	0.24	525.70	72.98
5800.00	10.20	68.83	5753.63	-63.22	155.42	506.82	0.93	530.12	72.95
5825.00	10.13	68.22	5778.24	-64.08	157.04	510.93	0.53	534.51	72.91
5850.00	10.16	67.81	5802.84	-64.98	158.69	515.01	0.31	538.90	72.87
5875.00	10.07	67.87	5827.46	-65.89	160.34	519.07	0.35	543.27	72.83
5900.00	10.24	67.21	5852.06	-66.82	162.03	523.15	0.82	547.66	72.79
5925.00	10.03	67.01	5876.67	-67.79	163.74	527.20	0.85	552.04	72.75
5950.00	9.53	68.61	5901.31	-68.67	165.34	531.13	2.28	556.27	72.71
5975.00	9.47	68.21	5925.97	-69.49	166.86	534.97	0.36	560.39	72.68
6000.00	9.28	68.63	5950.63	-70.29	168.36	538.75	0.79	564.45	72.65
6025.00	9.29	68.58	5975.31	-71.08	169.83	542.51	0.04	568.47	72.62
6050.00	9.24	68.05	5999.98	-71.88	171.32	546.25	0.41	572.49	72.59
6075.00	9.35	68.72	6024.65	-72.68	172.80	550.01	0.64	576.51	72.56
6100.00	9.34	68.98	6049.32	-73.45	174.27	553.79	0.18	580.56	72.53
6125.00	9.37	68.48	6073.99	-74.23	175.74	557.58	0.35	584.62	72.51
6150.00	9.49	68.17	6098.65	-75.04	177.26	561.38	0.54	588.70	72.48
6175.00	9.49	68.80	6123.31	-75.85	178.77	565.22	0.41	592.81	72.45
6200.00	9.47	69.69	6147.97	-76.61	180.23	569.07	0.59	596.92	72.43
6225.00	9.54	69.74	6172.62	-77.33	181.66	572.94	0.29	601.05	72.41
6250.00	9.51	69.98	6197.28	-78.04	183.08	576.82	0.20	605.18	72.39
6275.00	9.59	70.76	6221.93	-78.72	184.48	580.73	0.61	609.32	72.38
6300.00	9.53	71.26	6246.59	-79.36	185.83	584.65	0.42	613.47	72.37
6325.00	9.54	71.99	6271.24	-79.95	187.13	588.58	0.49	617.61	72.36
6350.00	9.52	72.34	6295.90	-80.50	188.40	592.52	0.26	621.75	72.36
6375.00	9.55	71.62	6320.55	-81.06	189.68	596.46	0.49	625.89	72.36
6400.00	9.60	71.43	6345.20	-81.66	191.00	600.40	0.26	630.05	72.35
6425.00	9.62	72.83	6369.85	-82.21	192.28	604.38	0.94	634.23	72.35
6450.00	9.61	71.38	6394.50	-82.77	193.56	608.35	0.98	638.40	72.35

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	9.50	70.91	6419.15	-83.40	194.90	612.28	0.53	642.55	72.34
6500.00	9.52	70.27	6443.81	-84.06	196.28	616.17	0.43	646.68	72.33
6525.00	9.36	69.89	6468.47	-84.75	197.67	620.03	0.70	650.78	72.32
6550.00	9.21	69.43	6493.14	-85.46	199.07	623.81	0.66	654.80	72.30
6575.00	9.12	69.51	6517.82	-86.17	200.47	627.54	0.36	658.78	72.28
6600.00	8.85	70.77	6542.52	-86.83	201.80	631.21	1.34	662.68	72.27
6625.00	8.70	70.97	6567.23	-87.42	203.05	634.81	0.59	666.49	72.26
6650.00	8.51	71.24	6591.94	-87.99	204.26	638.35	0.81	670.23	72.26
6675.00	8.40	71.43	6616.67	-88.53	205.43	641.83	0.43	673.91	72.25
6700.00	8.24	72.27	6641.41	-89.03	206.56	645.27	0.83	677.53	72.25
6725.00	8.08	73.62	6666.16	-89.45	207.60	648.66	0.99	681.07	72.25
6750.00	8.05	73.87	6690.91	-89.82	208.58	652.03	0.19	684.58	72.26
6775.00	8.00	74.51	6715.66	-90.16	209.53	655.39	0.41	688.07	72.27
6800.00	7.71	75.36	6740.43	-90.45	210.42	658.69	1.23	691.48	72.28
6825.00	7.70	75.47	6765.20	-90.71	211.27	661.93	0.07	694.83	72.30
6850.00	7.64	75.86	6789.98	-90.95	212.09	665.16	0.34	698.16	72.31
6875.00	7.68	76.32	6814.76	-91.17	212.89	668.40	0.31	701.48	72.33
6900.00	7.77	76.08	6839.53	-91.38	213.69	671.66	0.38	704.84	72.35
6925.00	7.84	76.07	6864.30	-91.60	214.51	674.96	0.26	708.22	72.37
6950.00	7.98	75.94	6889.06	-91.82	215.34	678.29	0.58	711.66	72.39
6975.00	8.00	76.08	6913.82	-92.05	216.18	681.67	0.11	715.13	72.40
7000.00	8.38	76.11	6938.56	-92.28	217.04	685.13	1.53	718.68	72.42
7025.00	8.65	75.49	6963.29	-92.54	217.95	688.72	1.15	722.38	72.44
7050.00	8.69	75.96	6988.00	-92.81	218.88	692.37	0.31	726.14	72.46
7075.00	8.87	75.94	7012.71	-93.07	219.80	696.07	0.71	729.95	72.47
7100.00	8.93	75.67	7037.41	-93.34	220.75	699.82	0.32	733.81	72.49
7125.00	8.99	75.94	7062.10	-93.61	221.71	703.59	0.29	737.70	72.51
7150.00	9.13	75.92	7086.79	-93.87	222.67	707.41	0.56	741.63	72.53
7175.00	9.17	77.71	7111.47	-94.08	223.57	711.29	1.15	745.60	72.55
7200.00	9.92	81.23	7136.13	-94.10	224.32	715.36	3.79	749.71	72.59
7225.00	10.01	81.98	7160.75	-93.96	224.96	719.64	0.64	753.98	72.64
7250.00	10.10	82.24	7185.36	-93.79	225.56	723.97	0.40	758.29	72.70

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	10.14	81.99	7209.98	-93.61	226.16	728.32	0.23	762.62	72.75
7300.00	10.07	82.42	7234.59	-93.43	226.75	732.66	0.41	766.95	72.80
7325.00	10.22	82.48	7259.20	-93.22	227.33	737.03	0.60	771.29	72.86
7350.00	10.23	82.17	7283.80	-93.03	227.92	741.42	0.23	775.67	72.91
7375.00	10.59	81.93	7308.39	-92.85	228.55	745.90	1.45	780.13	72.96
7400.00	10.88	81.58	7332.95	-92.69	229.22	750.51	1.21	784.73	73.02
7425.00	10.84	81.78	7357.50	-92.54	229.90	755.17	0.23	789.39	73.07
7450.00	10.95	81.71	7382.05	-92.38	230.58	759.84	0.42	794.06	73.12
7475.00	10.97	81.55	7406.60	-92.22	231.27	764.54	0.15	798.76	73.17
7500.00	10.85	81.23	7431.14	-92.09	231.98	769.22	0.54	803.44	73.22
7525.00	10.51	80.10	7455.71	-92.02	232.73	773.79	1.60	808.03	73.26
7550.00	10.27	79.90	7480.30	-92.01	233.51	778.23	0.95	812.51	73.30
7575.00	10.29	78.87	7504.90	-92.04	234.33	782.62	0.74	816.95	73.33
7600.00	10.34	78.85	7529.50	-92.11	235.20	787.01	0.20	821.40	73.36
7625.00	10.33	79.82	7554.09	-92.15	236.03	791.42	0.69	825.87	73.39
7650.00	10.45	78.91	7578.68	-92.18	236.86	795.85	0.80	830.35	73.43
7675.00	10.48	79.31	7603.26	-92.24	237.72	800.31	0.32	834.87	73.46
7700.00	10.63	78.85	7627.84	-92.30	238.59	804.81	0.67	839.43	73.49
7725.00	10.57	78.88	7652.41	-92.37	239.47	809.32	0.24	844.01	73.52
7750.00	10.59	79.28	7676.99	-92.43	240.34	813.83	0.30	848.58	73.55
7775.00	10.56	78.39	7701.57	-92.51	241.23	818.33	0.67	853.14	73.58
7800.00	10.60	78.51	7726.14	-92.61	242.15	822.83	0.20	857.72	73.60
7825.00	10.51	77.75	7750.72	-92.75	243.09	827.31	0.68	862.28	73.63
7850.00	10.51	77.44	7775.30	-92.92	244.07	831.76	0.23	866.83	73.65
7875.00	10.45	76.56	7799.88	-93.14	245.09	836.19	0.69	871.37	73.66
7900.00	10.39	76.52	7824.47	-93.40	246.15	840.59	0.26	875.89	73.68
7925.00	10.42	76.87	7849.06	-93.65	247.19	844.98	0.29	880.39	73.69
7950.00	10.43	76.99	7873.65	-93.87	248.21	849.39	0.09	884.91	73.71
7975.00	10.39	76.70	7898.23	-94.11	249.24	853.79	0.27	889.42	73.73
8000.00	10.42	75.51	7922.82	-94.40	250.32	858.17	0.87	893.93	73.74
8025.00	10.13	75.76	7947.42	-94.72	251.43	862.49	1.15	898.39	73.75
8050.00	10.13	75.76	7972.03	-95.03	252.51	866.75	0.00	902.78	73.76

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	10.12	75.32	7996.64	-95.36	253.61	871.01	0.31	907.18	73.77
8100.00	9.87	75.30	8021.26	-95.70	254.71	875.20	1.00	911.51	73.77
8125.00	9.86	74.90	8045.89	-96.05	255.81	879.34	0.28	915.79	73.78
8150.00	9.69	74.33	8070.53	-96.43	256.93	883.44	0.79	920.04	73.78
8175.00	9.64	74.99	8095.18	-96.81	258.04	887.48	0.49	924.24	73.79
8200.00	9.71	74.98	8119.82	-97.16	259.13	891.54	0.30	928.44	73.79
8225.00	9.74	75.34	8144.46	-97.50	260.21	895.62	0.26	932.66	73.80
8250.00	9.86	74.30	8169.10	-97.87	261.33	899.73	0.85	936.91	73.80
8275.00	9.72	74.97	8193.73	-98.25	262.46	903.83	0.70	941.16	73.81
8300.00	9.80	74.97	8218.37	-98.61	263.55	907.92	0.32	945.40	73.81
8325.00	9.82	74.45	8243.00	-98.99	264.68	912.03	0.36	949.66	73.82
8350.00	9.95	73.66	8267.63	-99.42	265.86	916.16	0.75	953.95	73.82
8375.00	9.59	74.47	8292.27	-99.84	267.02	920.23	1.54	958.19	73.82
8400.00	9.56	74.52	8316.92	-100.23	268.13	924.24	0.12	962.35	73.82
8425.00	9.62	74.54	8341.57	-100.61	269.24	928.25	0.22	966.51	73.82
8450.00	9.80	74.20	8366.22	-101.01	270.38	932.31	0.76	970.73	73.83
8475.00	9.83	73.26	8390.85	-101.46	271.57	936.40	0.66	974.99	73.83
8500.00	9.75	73.27	8415.49	-101.94	272.80	940.47	0.33	979.24	73.82
8525.00	9.79	73.41	8440.12	-102.42	274.01	944.53	0.20	983.48	73.82
8550.00	9.68	73.21	8464.76	-102.90	275.23	948.58	0.47	987.70	73.82
8575.00	9.67	71.82	8489.41	-103.43	276.49	952.59	0.93	991.91	73.81
8600.00	9.64	72.00	8514.05	-104.01	277.79	956.58	0.20	996.10	73.81
8625.00	9.49	72.20	8538.71	-104.56	279.07	960.53	0.61	1000.25	73.80
8650.00	9.31	72.81	8563.37	-105.08	280.30	964.42	0.80	1004.33	73.79
8675.00	9.35	71.72	8588.04	-105.61	281.53	968.29	0.73	1008.38	73.79
8700.00	9.37	72.20	8612.71	-106.17	282.79	972.15	0.32	1012.45	73.78
8725.00	9.42	72.16	8637.37	-106.71	284.04	976.04	0.20	1016.53	73.77
8750.00	9.24	71.59	8662.04	-107.27	285.30	979.89	0.81	1020.58	73.77
8775.00	9.15	71.88	8686.72	-107.83	286.56	983.69	0.41	1024.58	73.76
8800.00	9.33	71.69	8711.39	-108.39	287.81	987.50	0.73	1028.59	73.75
8825.00	9.44	71.15	8736.06	-108.98	289.11	991.37	0.55	1032.66	73.74
8850.00	9.31	70.95	8760.73	-109.60	290.43	995.22	0.52	1036.73	73.73

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	8.98	70.83	8785.41	-110.22	291.73	998.98	1.34	1040.70	73.72
8900.00	8.83	71.62	8810.11	-110.80	292.98	1002.64	0.78	1044.57	73.71
8925.00	8.80	70.79	8834.81	-111.37	294.21	1006.26	0.52	1048.39	73.70
8950.00	8.62	71.18	8859.52	-111.95	295.45	1009.84	0.77	1052.18	73.69
8975.00	8.43	71.26	8884.25	-112.50	296.64	1013.35	0.76	1055.88	73.68
9000.00	8.46	71.61	8908.98	-113.04	297.81	1016.83	0.23	1059.55	73.68
9025.00	8.41	71.27	8933.71	-113.57	298.98	1020.31	0.27	1063.21	73.67
9050.00	8.32	70.26	8958.44	-114.14	300.17	1023.74	0.69	1066.84	73.66
9075.00	8.23	67.77	8983.18	-114.81	301.46	1027.10	1.48	1070.43	73.64
9100.00	8.49	64.73	9007.91	-115.67	302.93	1030.43	2.04	1074.03	73.62
9125.00	8.54	65.02	9032.64	-116.62	304.50	1033.78	0.28	1077.69	73.59
9150.00	8.60	65.25	9057.36	-117.56	306.07	1037.16	0.26	1081.38	73.56
9175.00	8.65	64.60	9082.08	-118.53	307.65	1040.56	0.45	1085.09	73.53
9200.00	8.63	64.58	9106.79	-119.51	309.27	1043.95	0.10	1088.80	73.50
9225.00	8.74	64.68	9131.51	-120.50	310.88	1047.36	0.45	1092.53	73.47
9250.00	8.38	64.77	9156.23	-121.47	312.47	1050.72	1.44	1096.20	73.44
9275.00	7.97	64.71	9180.97	-122.39	313.99	1053.94	1.65	1099.72	73.41
9300.00	7.61	63.49	9205.74	-123.31	315.47	1056.99	1.59	1103.06	73.38
9325.00	7.22	61.75	9230.53	-124.26	316.95	1059.85	1.79	1106.23	73.35
9350.00	7.13	61.47	9255.34	-125.23	318.44	1062.60	0.37	1109.29	73.32
9375.00	7.72	61.43	9280.13	-126.25	319.98	1065.44	2.35	1112.45	73.28
9400.00	8.83	61.96	9304.87	-127.37	321.68	1068.61	4.44	1115.98	73.25
9425.00	10.12	64.28	9329.53	-128.54	323.54	1072.28	5.38	1120.03	73.21
9450.00	11.08	66.63	9354.10	-129.68	325.45	1076.46	4.22	1124.58	73.18
9475.00	11.96	68.06	9378.59	-130.75	327.37	1081.07	3.70	1129.55	73.15
9500.00	12.16	68.96	9403.04	-131.77	329.28	1085.93	1.10	1134.76	73.13
9525.00	12.08	69.05	9427.49	-132.76	331.16	1090.83	0.34	1139.99	73.11
9550.00	12.01	68.91	9451.93	-133.74	333.03	1095.70	0.29	1145.20	73.09
9575.00	11.72	68.37	9476.40	-134.73	334.90	1100.49	1.27	1150.32	73.07
9600.00	11.37	67.23	9500.89	-135.77	336.79	1105.12	1.66	1155.30	73.05
9625.00	11.23	66.11	9525.41	-136.88	338.73	1109.62	1.04	1160.17	73.02
9650.00	11.52	65.99	9549.92	-138.05	340.73	1114.13	1.16	1165.06	72.99

SURVEY REPORT

EIDER 23 FEDERAL #702H

KEEPER GYRO SURVEY

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	11.96	65.69	9574.40	-139.28	342.82	1118.77	1.80	1170.11	72.96
9700.00	12.14	65.43	9598.85	-140.57	344.98	1123.52	0.73	1175.29	72.93
9725.00	11.94	64.64	9623.30	-141.89	347.18	1128.25	1.02	1180.45	72.90
9750.00	11.61	63.06	9647.77	-143.29	349.42	1132.83	1.87	1185.49	72.86
9775.00	11.40	61.86	9672.27	-144.78	351.73	1137.25	1.26	1190.40	72.81
9800.00	10.85	60.51	9696.80	-146.32	354.05	1141.47	2.43	1195.12	72.77
9825.00	10.65	59.51	9721.36	-147.90	356.38	1145.51	1.09	1199.67	72.72
9850.00	10.86	59.85	9745.92	-149.50	358.74	1149.54	0.85	1204.22	72.67
9875.00	11.13	61.58	9770.46	-151.06	361.07	1153.70	1.72	1208.88	72.62
9900.00	11.24	67.06	9794.99	-152.35	363.17	1158.06	4.27	1213.67	72.59
9925.00	11.21	69.19	9819.51	-153.34	364.98	1162.58	1.66	1218.52	72.57
9950.00	10.96	77.71	9844.04	-153.87	366.35	1167.17	6.62	1223.32	72.57
9975.00	10.85	83.00	9868.59	-153.82	367.14	1171.83	4.02	1228.00	72.60
10000.00	10.81	84.06	9893.15	-153.52	367.67	1176.50	0.81	1232.61	72.65
10025.00	10.81	83.97	9917.70	-153.17	368.16	1181.16	0.07	1237.21	72.69
10050.00	10.81	84.13	9942.26	-152.83	368.64	1185.83	0.12	1241.81	72.73
10075.00	10.83	83.96	9966.82	-152.48	369.13	1190.49	0.14	1246.41	72.77
10100.00	10.75	84.58	9991.37	-152.12	369.60	1195.15	0.56	1250.99	72.82
10125.00	10.82	84.88	10015.93	-151.71	370.03	1199.80	0.37	1255.57	72.86
10150.00	10.77	85.13	10040.49	-151.29	370.44	1204.47	0.27	1260.15	72.90
10175.00	10.57	85.53	10065.06	-150.84	370.81	1209.08	0.84	1264.67	72.95
10200.00	10.33	85.67	10089.64	-150.38	371.16	1213.61	0.96	1269.09	72.99
10225.00	9.88	86.28	10114.26	-149.91	371.47	1217.98	1.88	1273.37	73.04
10250.00	9.49	86.11	10138.90	-149.44	371.75	1222.18	1.56	1277.46	73.08
10275.00	9.07	86.44	10163.57	-148.99	372.01	1226.20	1.69	1281.39	73.12
10300.00	8.79	86.85	10188.27	-148.53	372.24	1230.07	1.13	1285.16	73.16
10325.00	8.65	86.77	10212.98	-148.07	372.45	1233.86	0.58	1288.84	73.20
10350.00	8.43	87.20	10237.70	-147.60	372.64	1237.56	0.89	1292.45	73.24
10375.00	8.20	87.92	10262.44	-147.11	372.80	1241.18	1.01	1295.95	73.28
10400.00	8.16	89.13	10287.19	-146.57	372.89	1244.73	0.71	1299.39	73.32
10425.00	8.17	94.69	10311.93	-145.83	372.77	1248.28	3.16	1302.75	73.37
10450.00	8.18	97.20	10336.68	-144.84	372.40	1251.81	1.43	1306.03	73.43

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	7.97	99.41	10361.43	-143.73	371.90	1255.29	1.51	1309.22	73.50
10500.00	7.19	100.90	10386.21	-142.58	371.32	1258.53	3.22	1312.16	73.56
10525.00	6.47	101.25	10411.04	-141.51	370.75	1261.45	2.88	1314.80	73.62
10550.00	6.17	102.33	10435.88	-140.48	370.19	1264.14	1.26	1317.23	73.68
10575.00	5.66	104.65	10460.75	-139.44	369.59	1266.65	2.27	1319.47	73.73
10600.00	5.02	111.30	10485.64	-138.35	368.88	1268.86	3.55	1321.39	73.79
10625.00	4.14	107.49	10510.56	-137.36	368.21	1270.74	3.72	1323.01	73.84
10650.00	3.85	107.90	10535.50	-136.55	367.68	1272.40	1.18	1324.46	73.88
10675.00	3.81	108.65	10560.44	-135.75	367.16	1273.99	0.26	1325.84	73.92
10700.00	3.36	107.72	10585.40	-135.01	366.67	1275.47	1.84	1327.13	73.96
10725.00	3.09	108.16	10610.36	-134.35	366.24	1276.81	1.08	1328.29	74.00
10750.00	3.10	108.04	10635.32	-133.71	365.82	1278.09	0.07	1329.41	74.03
10775.00	2.88	111.29	10660.29	-133.06	365.38	1279.32	1.13	1330.47	74.06
10800.00	2.06	125.55	10685.26	-132.41	364.89	1280.27	4.07	1331.25	74.09
10825.00	1.34	156.64	10710.25	-131.80	364.36	1280.75	4.57	1331.57	74.12
10850.00	1.36	167.39	10735.25	-131.22	363.80	1280.93	1.02	1331.59	74.14
10875.00	1.31	163.90	10760.24	-130.64	363.24	1281.07	0.39	1331.57	74.17
10900.00	0.70	196.78	10785.23	-130.22	362.82	1281.11	3.25	1331.49	74.19
10925.00	0.64	239.32	10810.23	-130.03	362.60	1280.94	1.97	1331.28	74.19
10950.00	0.66	242.42	10835.23	-129.94	362.46	1280.70	0.16	1331.00	74.20
10975.00	0.54	300.26	10860.23	-129.97	362.45	1280.47	2.35	1330.78	74.20
11000.00	1.09	331.31	10885.23	-130.27	362.72	1280.25	2.77	1330.64	74.18
11025.00	1.02	335.10	10910.22	-130.72	363.13	1280.05	0.42	1330.56	74.16
11050.00	1.21	344.39	10935.22	-131.19	363.59	1279.88	1.07	1330.52	74.14
11075.00	1.61	16.31	10960.21	-131.77	364.18	1279.91	3.46	1330.71	74.12
11100.00	2.12	29.26	10985.20	-132.44	364.92	1280.23	2.62	1331.23	74.09
11125.00	2.37	30.00	11010.18	-133.19	365.77	1280.72	1.00	1331.92	74.06
11150.00	2.54	33.39	11035.16	-133.99	366.68	1281.28	0.90	1332.71	74.03
11175.00	2.53	31.72	11060.13	-134.80	367.61	1281.87	0.30	1333.54	74.00
11200.00	2.51	29.80	11085.11	-135.63	368.55	1282.43	0.34	1334.34	73.97
11225.00	2.29	30.49	11110.09	-136.42	369.46	1282.96	0.91	1335.10	73.94
11250.00	2.31	26.40	11135.07	-137.21	370.34	1283.44	0.67	1335.80	73.90

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	1.97	24.91	11160.05	-137.97	371.18	1283.84	1.38	1336.42	73.87
11300.00	1.66	18.22	11185.04	-138.64	371.92	1284.14	1.52	1336.91	73.85
11325.00	1.68	20.78	11210.03	-139.27	372.60	1284.38	0.31	1337.33	73.82
11350.00	1.61	18.65	11235.01	-139.89	373.27	1284.62	0.37	1337.75	73.80
11375.00	1.77	24.82	11260.00	-140.51	373.96	1284.90	0.99	1338.21	73.77
11400.00	1.80	27.94	11284.99	-141.14	374.66	1285.24	0.40	1338.74	73.75
11425.00	1.87	30.35	11309.98	-141.76	375.35	1285.63	0.43	1339.31	73.72
11450.00	1.80	47.38	11334.97	-142.28	375.97	1286.13	2.19	1339.95	73.70
11475.00	2.02	64.21	11359.95	-142.60	376.43	1286.81	2.40	1340.74	73.69
11500.00	2.01	69.32	11384.94	-142.80	376.77	1287.62	0.72	1341.61	73.69
11525.00	1.84	66.77	11409.92	-142.97	377.09	1288.40	0.77	1342.45	73.69
11550.00	1.49	63.25	11434.91	-143.16	377.39	1289.06	1.47	1343.16	73.68
11560.34	1.29	62.12	11445.25	-143.23	377.51	1289.28	1.90	1343.41	73.68

NORTHERN DELAWARE BASIN

LEA COUNTY, NM

BULLDOG

EIDER 23 FEDERAL #702H

OWB

Design: AWP

Standard Survey Report

20 November, 2019

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well EIDER 23 FEDERAL #702H
Project:	LEA COUNTY, NM	TVD Reference:	KB=30' @ 3597.3usft (Scan Quest)
Site:	BULLDOG	MD Reference:	KB=30' @ 3597.3usft (Scan Quest)
Well:	EIDER 23 FEDERAL #702H	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	EIDER 23 FEDERAL #702H					
Well Position	+N/-S	0.0 usft	Northing:	440,462.50 usft	Latitude:	32° 12' 32.624 N
	+E/-W	0.0 usft	Easting:	713,606.20 usft	Longitude:	103° 38' 33.738 W
Position Uncertainty		3.0 usft	Wellhead Elevation:	usft	Ground Level:	3,567.3 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/18/2019	6.73	60.01	47,680.56218244

Design	AWP				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	169.80	

Survey Program	Date 11/20/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	11,560.3	GYRO-INTERMEDIATE (OWB)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4
11,844.0	20,082.0	MWD-CURVE/LATERAL (OWB)	MWD+IFR1+FDIR	OWSG MWD + IFR1 + FDIR Correction

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.35	16.20	100.0	0.3	0.1	-0.3	0.35	0.35	0.00
125.0	0.36	10.31	125.0	0.4	0.1	-0.4	0.15	0.04	-23.56
150.0	0.45	21.51	150.0	0.6	0.2	-0.6	0.48	0.36	44.80
175.0	0.58	20.35	175.0	0.8	0.3	-0.8	0.52	0.52	-4.64
200.0	0.67	21.21	200.0	1.1	0.3	-1.0	0.36	0.36	3.44
225.0	0.72	18.13	225.0	1.4	0.4	-1.3	0.25	0.20	-12.32
250.0	0.76	13.69	250.0	1.7	0.5	-1.6	0.28	0.16	-17.76
275.0	0.73	5.77	275.0	2.0	0.6	-1.9	0.43	-0.12	-31.68
300.0	0.75	7.59	300.0	2.3	0.6	-2.2	0.12	0.08	7.28

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well EIDER 23 FEDERAL #702H
Project:	LEA COUNTY, NM	TVD Reference:	KB=30' @ 3597.3usft (Scan Quest)
Site:	BULLDOG	MD Reference:	KB=30' @ 3597.3usft (Scan Quest)
Well:	EIDER 23 FEDERAL #702H	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	0.74	11.84	325.0	2.6	0.7	-2.5	0.22	-0.04	17.00
350.0	0.79	13.64	350.0	3.0	0.8	-2.8	0.22	0.20	7.20
375.0	0.84	13.23	375.0	3.3	0.8	-3.1	0.20	0.20	-1.64
400.0	0.87	7.18	400.0	3.7	0.9	-3.5	0.38	0.12	-24.20
425.0	0.82	4.64	425.0	4.0	0.9	-3.8	0.25	-0.20	-10.16
450.0	0.76	7.55	450.0	4.4	1.0	-4.1	0.29	-0.24	11.64
475.0	0.78	9.73	475.0	4.7	1.0	-4.5	0.14	0.08	8.72
500.0	0.86	13.03	500.0	5.1	1.1	-4.8	0.37	0.32	13.20
525.0	0.89	5.57	525.0	5.4	1.2	-5.1	0.47	0.12	-29.84
550.0	0.82	6.15	550.0	5.8	1.2	-5.5	0.28	-0.28	2.32
575.0	0.76	6.36	575.0	6.2	1.2	-5.8	0.24	-0.24	0.84
600.0	0.80	14.11	600.0	6.5	1.3	-6.2	0.45	0.16	31.00
625.0	0.87	14.51	625.0	6.8	1.4	-6.5	0.28	0.28	1.60
650.0	0.86	5.65	650.0	7.2	1.5	-6.8	0.54	-0.04	-35.44
675.0	0.79	7.13	674.9	7.6	1.5	-7.2	0.29	-0.28	5.92
700.0	0.78	8.67	699.9	7.9	1.5	-7.5	0.09	-0.04	6.16
725.0	0.85	10.88	724.9	8.3	1.6	-7.8	0.31	0.28	8.84
750.0	0.94	5.36	749.9	8.6	1.7	-8.2	0.50	0.36	-22.08
775.0	0.93	2.02	774.9	9.1	1.7	-8.6	0.22	-0.04	-13.36
800.0	0.92	359.97	799.9	9.5	1.7	-9.0	0.14	-0.04	-8.20
825.0	0.92	357.99	824.9	9.9	1.7	-9.4	0.13	0.00	-7.92
850.0	0.93	2.77	849.9	10.3	1.7	-9.8	0.31	0.04	19.12
875.0	1.01	1.51	874.9	10.7	1.7	-10.2	0.33	0.32	-5.04
900.0	1.11	355.25	899.9	11.1	1.7	-10.7	0.61	0.40	-25.04
925.0	1.18	344.21	924.9	11.6	1.6	-11.2	0.92	0.28	-44.16
950.0	1.19	339.38	949.9	12.1	1.4	-11.7	0.40	0.04	-19.32
975.0	1.21	337.49	974.9	12.6	1.2	-12.2	0.18	0.08	-7.56
1,000.0	1.25	339.55	999.9	13.1	1.0	-12.7	0.24	0.16	8.24
1,025.0	1.41	336.14	1,024.9	13.6	0.8	-13.3	0.71	0.64	-13.64
1,050.0	1.40	334.10	1,049.9	14.2	0.6	-13.9	0.20	-0.04	-8.16
1,075.0	1.36	331.89	1,074.9	14.7	0.3	-14.5	0.27	-0.16	-8.84
1,100.0	1.30	336.07	1,099.9	15.3	0.0	-15.0	0.46	-0.24	16.72
1,125.0	1.40	338.00	1,124.9	15.8	-0.2	-15.6	0.44	0.40	7.72
1,150.0	1.45	339.39	1,149.9	16.4	-0.4	-16.2	0.24	0.20	5.56
1,175.0	1.42	338.43	1,174.8	17.0	-0.6	-16.8	0.15	-0.12	-3.84
1,200.0	1.39	341.17	1,199.8	17.5	-0.8	-17.4	0.29	-0.12	10.96
1,225.0	1.46	343.86	1,224.8	18.1	-1.0	-18.0	0.39	0.28	10.76
1,250.0	1.49	343.78	1,249.8	18.8	-1.2	-18.7	0.12	0.12	-0.32
1,275.0	1.24	346.33	1,274.8	19.3	-1.4	-19.3	1.03	-1.00	10.20
1,300.0	0.53	45.07	1,299.8	19.7	-1.4	-19.6	4.26	-2.84	234.96
1,325.0	0.61	70.79	1,324.8	19.8	-1.1	-19.7	1.06	0.32	102.88
1,350.0	0.71	72.67	1,349.8	19.9	-0.9	-19.7	0.41	0.40	7.52
1,375.0	0.71	66.26	1,374.8	20.0	-0.6	-19.8	0.32	0.00	-25.64

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well EIDER 23 FEDERAL #702H
Project:	LEA COUNTY, NM	TVD Reference:	KB=30' @ 3597.3usft (Scan Quest)
Site:	BULLDOG	MD Reference:	KB=30' @ 3597.3usft (Scan Quest)
Well:	EIDER 23 FEDERAL #702H	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)
1,400.0	0.64	82.20	1,399.8	20.1	-0.3	-19.8	0.80	-0.28	63.76
1,425.0	0.93	122.40	1,424.8	20.0	0.0	-19.7	2.42	1.16	160.80
1,450.0	1.56	139.82	1,449.8	19.6	0.4	-19.2	2.91	2.52	69.68
1,475.0	1.81	141.52	1,474.8	19.0	0.9	-18.6	1.02	1.00	6.80
1,500.0	1.78	141.56	1,499.8	18.4	1.4	-17.9	0.12	-0.12	0.16
1,525.0	1.70	142.39	1,524.8	17.8	1.8	-17.2	0.34	-0.32	3.32
1,550.0	1.76	145.40	1,549.8	17.2	2.3	-16.6	0.44	0.24	12.04
1,575.0	1.86	144.83	1,574.7	16.6	2.7	-15.8	0.41	0.40	-2.28
1,600.0	1.78	143.15	1,599.7	15.9	3.2	-15.1	0.38	-0.32	-6.72
1,625.0	1.79	142.28	1,624.7	15.3	3.7	-14.4	0.12	0.04	-3.48
1,650.0	1.78	145.48	1,649.7	14.7	4.1	-13.7	0.40	-0.04	12.80
1,675.0	1.87	146.69	1,674.7	14.0	4.6	-13.0	0.39	0.36	4.84
1,700.0	1.90	144.06	1,699.7	13.4	5.0	-12.3	0.37	0.12	-10.52
1,725.0	1.85	143.12	1,724.7	12.7	5.5	-11.5	0.23	-0.20	-3.76
1,750.0	1.80	144.24	1,749.7	12.1	6.0	-10.8	0.25	-0.20	4.48
1,775.0	1.85	145.64	1,774.6	11.4	6.4	-10.1	0.27	0.20	5.60
1,800.0	1.90	145.87	1,799.6	10.7	6.9	-9.3	0.20	0.20	0.92
1,825.0	1.88	143.20	1,824.6	10.1	7.4	-8.6	0.36	-0.08	-10.68
1,850.0	1.76	146.52	1,849.6	9.4	7.8	-7.9	0.64	-0.48	13.28
1,875.0	1.50	154.42	1,874.6	8.8	8.2	-7.2	1.37	-1.04	31.60
1,900.0	1.08	185.49	1,899.6	8.3	8.3	-6.7	3.20	-1.68	124.28
1,925.0	0.91	205.89	1,924.6	7.8	8.2	-6.3	1.56	-0.68	81.60
1,950.0	0.89	221.28	1,949.6	7.5	8.0	-6.0	0.97	-0.08	61.56
1,975.0	1.02	229.40	1,974.6	7.2	7.7	-5.8	0.75	0.52	32.48
2,000.0	1.07	225.43	1,999.6	6.9	7.3	-5.5	0.35	0.20	-15.88
2,025.0	1.02	225.11	2,024.6	6.6	7.0	-5.3	0.20	-0.20	-1.28
2,050.0	0.97	226.83	2,049.6	6.3	6.7	-5.0	0.23	-0.20	6.88
2,075.0	1.03	233.48	2,074.6	6.0	6.4	-4.8	0.52	0.24	26.60
2,100.0	1.07	229.86	2,099.6	5.7	6.0	-4.6	0.31	0.16	-14.48
2,125.0	1.02	229.16	2,124.5	5.4	5.7	-4.4	0.21	-0.20	-2.80
2,150.0	0.94	232.50	2,149.5	5.2	5.3	-4.1	0.39	-0.32	13.36
2,175.0	1.02	238.86	2,174.5	4.9	5.0	-4.0	0.54	0.32	25.44
2,200.0	1.04	232.85	2,199.5	4.7	4.6	-3.8	0.44	0.08	-24.04
2,225.0	0.97	231.48	2,224.5	4.4	4.3	-3.6	0.30	-0.28	-5.48
2,250.0	0.90	238.81	2,249.5	4.2	3.9	-3.4	0.55	-0.28	29.32
2,275.0	1.04	239.70	2,274.5	4.0	3.6	-3.3	0.56	0.56	3.56
2,300.0	0.99	233.43	2,299.5	3.7	3.2	-3.1	0.49	-0.20	-25.08
2,325.0	0.95	236.70	2,324.5	3.5	2.9	-2.9	0.27	-0.16	13.08
2,350.0	0.94	240.71	2,349.5	3.3	2.5	-2.8	0.27	-0.04	16.04
2,375.0	1.03	240.33	2,374.5	3.0	2.1	-2.6	0.36	0.36	-1.52
2,400.0	0.98	235.43	2,399.5	2.8	1.8	-2.5	0.40	-0.20	-19.60
2,425.0	0.71	231.98	2,424.5	2.6	1.5	-2.3	1.10	-1.08	-13.80
2,450.0	0.42	206.15	2,449.5	2.4	1.3	-2.2	1.52	-1.16	-103.32

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well EIDER 23 FEDERAL #702H
Project:	LEA COUNTY, NM	TVD Reference:	KB=30' @ 3597.3usft (Scan Quest)
Site:	BULLDOG	MD Reference:	KB=30' @ 3597.3usft (Scan Quest)
Well:	EIDER 23 FEDERAL #702H	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	0.79	119.26	2,474.5	2.3	1.4	-2.0	3.50	1.48	-347.56
2,500.0	1.10	102.80	2,499.5	2.1	1.8	-1.8	1.64	1.24	-65.84
2,525.0	1.06	99.74	2,524.5	2.0	2.3	-1.6	0.28	-0.16	-12.24
2,550.0	1.08	105.86	2,549.5	1.9	2.7	-1.4	0.46	0.08	24.48
2,575.0	1.14	102.78	2,574.5	1.8	3.2	-1.2	0.34	0.24	-12.32
2,600.0	1.12	100.42	2,599.5	1.7	3.7	-1.0	0.20	-0.08	-9.44
2,625.0	1.36	93.99	2,624.5	1.6	4.2	-0.9	1.11	0.96	-25.72
2,650.0	1.94	79.45	2,649.5	1.7	4.9	-0.8	2.84	2.32	-58.16
2,675.0	2.30	71.14	2,674.4	1.9	5.8	-0.9	1.89	1.44	-33.24
2,700.0	2.68	70.59	2,699.4	2.3	6.8	-1.0	1.52	1.52	-2.20
2,725.0	3.31	66.50	2,724.4	2.8	8.0	-1.3	2.66	2.52	-16.36
2,750.0	4.35	66.03	2,749.3	3.4	9.6	-1.7	4.16	4.16	-1.88
2,775.0	4.94	66.10	2,774.3	4.3	11.4	-2.2	2.36	2.36	0.28
2,800.0	5.22	65.63	2,799.2	5.2	13.4	-2.7	1.13	1.12	-1.88
2,825.0	5.64	67.70	2,824.0	6.1	15.6	-3.2	1.85	1.68	8.28
2,850.0	6.90	69.63	2,848.9	7.1	18.2	-3.8	5.11	5.04	7.72
2,875.0	7.16	69.42	2,873.7	8.2	21.0	-4.3	1.05	1.04	-0.84
2,900.0	7.22	70.36	2,898.5	9.2	24.0	-4.9	0.53	0.24	3.76
2,925.0	7.40	73.44	2,923.3	10.2	27.0	-5.3	1.72	0.72	12.32
2,950.0	7.51	78.73	2,948.1	11.0	30.1	-5.5	2.78	0.44	21.16
2,975.0	7.58	80.27	2,972.9	11.6	33.4	-5.5	0.86	0.28	6.16
3,000.0	7.76	80.74	2,997.7	12.2	36.6	-5.5	0.76	0.72	1.88
3,025.0	8.49	80.37	3,022.4	12.7	40.1	-5.4	2.93	2.92	-1.48
3,050.0	9.70	78.44	3,047.1	13.5	44.0	-5.5	4.99	4.84	-7.72
3,075.0	10.11	77.92	3,071.7	14.3	48.2	-5.6	1.68	1.64	-2.08
3,100.0	10.23	77.85	3,096.3	15.3	52.5	-5.7	0.48	0.48	-0.28
3,125.0	10.36	77.80	3,120.9	16.2	56.9	-5.9	0.52	0.52	-0.20
3,150.0	10.45	77.48	3,145.5	17.2	61.3	-6.1	0.43	0.36	-1.28
3,175.0	10.64	76.64	3,170.1	18.2	65.8	-6.3	0.98	0.76	-3.36
3,200.0	10.63	76.63	3,194.7	19.3	70.3	-6.5	0.04	-0.04	-0.04
3,225.0	10.46	76.70	3,219.2	20.3	74.7	-6.8	0.68	-0.68	0.28
3,250.0	10.48	76.89	3,243.8	21.4	79.1	-7.0	0.16	0.08	0.76
3,275.0	10.60	76.75	3,268.4	22.4	83.6	-7.3	0.49	0.48	-0.56
3,300.0	10.83	76.76	3,293.0	23.5	88.1	-7.5	0.92	0.92	0.04
3,325.0	10.71	76.74	3,317.5	24.5	92.7	-7.8	0.48	-0.48	-0.08
3,350.0	10.60	76.84	3,342.1	25.6	97.2	-8.0	0.45	-0.44	0.40
3,375.0	10.52	76.46	3,366.7	26.7	101.6	-8.2	0.42	-0.32	-1.52
3,400.0	10.36	73.23	3,391.3	27.8	106.0	-8.6	2.43	-0.64	-12.92
3,425.0	10.37	70.21	3,415.8	29.3	110.3	-9.3	2.17	0.04	-12.08
3,450.0	10.12	68.89	3,440.4	30.8	114.4	-10.1	1.37	-1.00	-5.28
3,475.0	9.99	69.38	3,465.1	32.4	118.5	-10.9	0.62	-0.52	1.96
3,500.0	9.88	68.82	3,489.7	33.9	122.5	-11.7	0.59	-0.44	-2.24
3,525.0	9.85	69.29	3,514.3	35.4	126.5	-12.5	0.34	-0.12	1.88
3,550.0	9.71	68.62	3,539.0	37.0	130.5	-13.3	0.72	-0.56	-2.68

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well EIDER 23 FEDERAL #702H
Project:	LEA COUNTY, NM	TVD Reference:	KB=30' @ 3597.3usft (Scan Quest)
Site:	BULLDOG	MD Reference:	KB=30' @ 3597.3usft (Scan Quest)
Well:	EIDER 23 FEDERAL #702H	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)
3,575.0	9.56	68.55	3,563.6	38.5	134.4	-14.1	0.60	-0.60	-0.28
3,600.0	9.52	69.00	3,588.3	40.0	138.3	-14.9	0.34	-0.16	1.80
3,625.0	9.51	69.38	3,612.9	41.5	142.1	-15.6	0.25	-0.04	1.52
3,650.0	9.51	68.70	3,637.6	42.9	146.0	-16.4	0.45	0.00	-2.72
3,675.0	9.45	69.62	3,662.2	44.4	149.8	-17.2	0.65	-0.24	3.68
3,700.0	9.51	70.02	3,686.9	45.8	153.7	-17.9	0.36	0.24	1.60
3,725.0	9.47	69.74	3,711.5	47.2	157.6	-18.6	0.24	-0.16	-1.12
3,750.0	9.45	69.98	3,736.2	48.6	161.4	-19.3	0.18	-0.08	0.96
3,775.0	9.56	69.27	3,760.9	50.1	165.3	-20.0	0.64	0.44	-2.84
3,800.0	9.23	69.87	3,785.5	51.5	169.1	-20.8	1.38	-1.32	2.40
3,825.0	9.09	70.65	3,810.2	52.9	172.9	-21.4	0.75	-0.56	3.12
3,850.0	9.13	70.71	3,834.9	54.2	176.6	-22.0	0.16	0.16	0.24
3,875.0	9.05	69.86	3,859.6	55.5	180.3	-22.7	0.63	-0.32	-3.40
3,900.0	8.85	70.74	3,884.3	56.8	184.0	-23.3	0.97	-0.80	3.52
3,925.0	8.86	70.15	3,909.0	58.1	187.6	-24.0	0.37	0.04	-2.36
3,950.0	8.67	69.43	3,933.7	59.4	191.2	-24.6	0.88	-0.76	-2.88
3,975.0	8.75	69.59	3,958.4	60.7	194.7	-25.3	0.33	0.32	0.64
4,000.0	8.76	69.89	3,983.1	62.1	198.3	-26.0	0.19	0.04	1.20
4,025.0	8.89	69.25	4,007.8	63.4	201.9	-26.6	0.65	0.52	-2.56
4,050.0	8.76	69.86	4,032.5	64.7	205.5	-27.3	0.64	-0.52	2.44
4,075.0	9.10	69.59	4,057.2	66.1	209.1	-28.0	1.37	1.36	-1.08
4,100.0	9.22	70.12	4,081.9	67.4	212.9	-28.7	0.59	0.48	2.12
4,125.0	9.46	70.93	4,106.6	68.8	216.7	-29.3	1.09	0.96	3.24
4,150.0	9.80	71.92	4,131.2	70.1	220.6	-30.0	1.51	1.36	3.96
4,175.0	10.14	74.49	4,155.8	71.4	224.8	-30.5	2.24	1.36	10.28
4,200.0	10.49	75.22	4,180.4	72.6	229.1	-30.8	1.49	1.40	2.92
4,225.0	10.40	75.55	4,205.0	73.7	233.5	-31.2	0.43	-0.36	1.32
4,250.0	10.36	76.62	4,229.6	74.8	237.9	-31.5	0.79	-0.16	4.28
4,275.0	10.38	78.43	4,254.2	75.8	242.3	-31.7	1.31	0.08	7.24
4,300.0	10.38	78.99	4,278.8	76.6	246.7	-31.7	0.40	0.00	2.24
4,325.0	10.26	79.38	4,303.4	77.5	251.1	-31.8	0.56	-0.48	1.56
4,350.0	10.26	79.41	4,328.0	78.3	255.5	-31.8	0.02	0.00	0.12
4,375.0	10.15	80.81	4,352.6	79.1	259.8	-31.8	1.09	-0.44	5.60
4,400.0	10.14	80.91	4,377.2	79.8	264.2	-31.7	0.08	-0.04	0.40
4,425.0	10.11	80.97	4,401.8	80.4	268.5	-31.6	0.13	-0.12	0.24
4,450.0	10.20	80.61	4,426.4	81.1	272.9	-31.6	0.44	0.36	-1.44
4,475.0	10.36	80.43	4,451.0	81.9	277.3	-31.5	0.65	0.64	-0.72
4,500.0	10.18	80.78	4,475.6	82.6	281.7	-31.4	0.76	-0.72	1.40
4,525.0	10.50	81.97	4,500.2	83.3	286.1	-31.3	1.54	1.28	4.76
4,550.0	11.12	81.57	4,524.8	84.0	290.7	-31.1	2.50	2.48	-1.60
4,575.0	11.45	82.96	4,549.3	84.6	295.6	-30.9	1.71	1.32	5.56
4,600.0	11.49	82.81	4,573.8	85.2	300.5	-30.7	0.20	0.16	-0.60
4,625.0	11.51	82.24	4,598.3	85.9	305.5	-30.4	0.46	0.08	-2.28

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well EIDER 23 FEDERAL #702H
Project:	LEA COUNTY, NM	TVD Reference:	KB=30' @ 3597.3usft (Scan Quest)
Site:	BULLDOG	MD Reference:	KB=30' @ 3597.3usft (Scan Quest)
Well:	EIDER 23 FEDERAL #702H	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	11.42	82.62	4,622.8	86.5	310.4	-30.2	0.47	-0.36	1.52
4,675.0	11.48	82.03	4,647.3	87.2	315.3	-30.0	0.53	0.24	-2.36
4,700.0	11.59	80.57	4,671.8	88.0	320.2	-29.9	1.25	0.44	-5.84
4,725.0	11.57	80.59	4,696.3	88.8	325.2	-29.8	0.08	-0.08	0.08
4,750.0	11.35	80.18	4,720.8	89.6	330.1	-29.7	0.94	-0.88	-1.64
4,775.0	11.37	79.90	4,745.3	90.5	334.9	-29.7	0.23	0.08	-1.12
4,800.0	11.18	78.69	4,769.8	91.4	339.7	-29.8	1.21	-0.76	-4.84
4,825.0	11.06	74.66	4,794.3	92.5	344.4	-30.0	3.15	-0.48	-16.12
4,850.0	10.77	71.18	4,818.9	93.9	349.0	-30.6	2.88	-1.16	-13.92
4,875.0	10.49	69.49	4,843.4	95.4	353.3	-31.3	1.68	-1.12	-6.76
4,900.0	10.51	68.37	4,868.0	97.0	357.5	-32.2	0.82	0.08	-4.48
4,925.0	10.23	67.62	4,892.6	98.7	361.7	-33.1	1.24	-1.12	-3.00
4,950.0	10.24	67.07	4,917.2	100.4	365.8	-34.1	0.39	0.04	-2.20
4,975.0	10.17	67.11	4,941.8	102.2	369.9	-35.1	0.28	-0.28	0.16
5,000.0	10.01	67.42	4,966.4	103.9	373.9	-36.0	0.68	-0.64	1.24
5,025.0	10.00	68.81	4,991.1	105.5	378.0	-36.9	0.97	-0.04	5.56
5,050.0	10.01	69.39	5,015.7	107.0	382.0	-37.7	0.41	0.04	2.32
5,075.0	10.10	69.28	5,040.3	108.6	386.1	-38.5	0.37	0.36	-0.44
5,100.0	9.95	69.24	5,064.9	110.1	390.2	-39.3	0.60	-0.60	-0.16
5,125.0	10.06	69.66	5,089.5	111.6	394.2	-40.1	0.53	0.44	1.68
5,150.0	10.19	69.27	5,114.1	113.2	398.4	-40.9	0.59	0.52	-1.56
5,175.0	10.29	69.24	5,138.7	114.8	402.5	-41.7	0.40	0.40	-0.12
5,200.0	10.23	69.32	5,163.3	116.3	406.7	-42.5	0.25	-0.24	0.32
5,225.0	10.42	68.88	5,187.9	117.9	410.9	-43.3	0.82	0.76	-1.76
5,250.0	10.32	68.53	5,212.5	119.6	415.1	-44.2	0.47	-0.40	-1.40
5,275.0	10.42	69.11	5,237.1	121.2	419.3	-45.0	0.58	0.40	2.32
5,300.0	10.42	68.93	5,261.7	122.8	423.5	-45.9	0.13	0.00	-0.72
5,325.0	10.41	68.49	5,286.3	124.4	427.7	-46.7	0.32	-0.04	-1.76
5,350.0	10.59	68.65	5,310.9	126.1	431.9	-47.6	0.73	0.72	0.64
5,375.0	10.47	68.03	5,335.5	127.8	436.2	-48.5	0.66	-0.48	-2.48
5,400.0	10.55	68.01	5,360.0	129.5	440.4	-49.5	0.32	0.32	-0.08
5,425.0	10.63	67.78	5,384.6	131.2	444.7	-50.4	0.36	0.32	-0.92
5,450.0	10.46	67.36	5,409.2	133.0	448.9	-51.4	0.75	-0.68	-1.68
5,475.0	10.40	67.06	5,433.8	134.7	453.1	-52.4	0.32	-0.24	-1.20
5,500.0	10.29	66.36	5,458.4	136.5	457.2	-53.4	0.67	-0.44	-2.80
5,525.0	10.44	66.64	5,483.0	138.3	461.3	-54.4	0.63	0.60	1.12
5,550.0	10.43	66.38	5,507.6	140.1	465.5	-55.5	0.19	-0.04	-1.04
5,575.0	10.14	68.40	5,532.1	141.8	469.6	-56.4	1.85	-1.16	8.08
5,600.0	10.07	70.13	5,556.8	143.4	473.7	-57.2	1.25	-0.28	6.92
5,625.0	10.01	70.56	5,581.4	144.8	477.8	-57.9	0.38	-0.24	1.72
5,650.0	10.02	70.33	5,606.0	146.3	481.9	-58.7	0.16	0.04	-0.92
5,675.0	10.26	69.64	5,630.6	147.8	486.0	-59.4	1.08	0.96	-2.76
5,700.0	10.24	70.06	5,655.2	149.3	490.2	-60.2	0.31	-0.08	1.68

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: EIDER 23 FEDERAL #702H
Wellbore: OWB
Design: AWP

Local Co-ordinate Reference: Well EIDER 23 FEDERAL #702H
TVD Reference: KB=30' @ 3597.3usft (Scan Quest)
MD Reference: KB=30' @ 3597.3usft (Scan Quest)
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)
5,725.0	10.18	70.19	5,679.8	150.8	494.4	-60.9	0.26	-0.24	0.52
5,750.0	10.20	69.82	5,704.4	152.4	498.5	-61.7	0.27	0.08	-1.48
5,775.0	10.18	70.14	5,729.0	153.9	502.7	-62.4	0.24	-0.08	1.28
5,800.0	10.20	68.83	5,753.6	155.4	506.8	-63.2	0.93	0.08	-5.24
5,825.0	10.13	68.22	5,778.2	157.0	510.9	-64.1	0.51	-0.28	-2.44
5,850.0	10.16	67.81	5,802.8	158.7	515.0	-65.0	0.31	0.12	-1.64
5,875.0	10.07	67.87	5,827.5	160.3	519.1	-65.9	0.36	-0.36	0.24
5,900.0	10.24	67.21	5,852.1	162.0	523.1	-66.8	0.82	0.68	-2.64
5,925.0	10.03	67.01	5,876.7	163.7	527.2	-67.8	0.85	-0.84	-0.80
5,950.0	9.53	68.61	5,901.3	165.3	531.1	-68.7	2.28	-2.00	6.40
5,975.0	9.47	68.21	5,926.0	166.9	535.0	-69.5	0.36	-0.24	-1.60
6,000.0	9.28	68.63	5,950.6	168.4	538.8	-70.3	0.81	-0.76	1.68
6,025.0	9.29	68.58	5,975.3	169.8	542.5	-71.1	0.05	0.04	-0.20
6,050.0	9.24	68.05	6,000.0	171.3	546.3	-71.9	0.40	-0.20	-2.12
6,075.0	9.35	68.72	6,024.7	172.8	550.0	-72.7	0.62	0.44	2.68
6,100.0	9.34	68.98	6,049.3	174.3	553.8	-73.5	0.17	-0.04	1.04
6,125.0	9.37	68.48	6,074.0	175.7	557.6	-74.2	0.35	0.12	-2.00
6,150.0	9.49	68.17	6,098.7	177.3	561.4	-75.0	0.52	0.48	-1.24
6,175.0	9.49	68.80	6,123.3	178.8	565.2	-75.9	0.42	0.00	2.52
6,200.0	9.47	69.69	6,148.0	180.2	569.1	-76.6	0.59	-0.08	3.56
6,225.0	9.54	69.74	6,172.6	181.7	572.9	-77.3	0.28	0.28	0.20
6,250.0	9.51	69.98	6,197.3	183.1	576.8	-78.0	0.20	-0.12	0.96
6,275.0	9.59	70.76	6,221.9	184.5	580.7	-78.7	0.61	0.32	3.12
6,300.0	9.53	71.26	6,246.6	185.8	584.7	-79.4	0.41	-0.24	2.00
6,325.0	9.54	71.99	6,271.2	187.1	588.6	-79.9	0.49	0.04	2.92
6,350.0	9.52	72.34	6,295.9	188.4	592.5	-80.5	0.25	-0.08	1.40
6,375.0	9.55	71.62	6,320.6	189.7	596.5	-81.1	0.49	0.12	-2.88
6,400.0	9.60	71.43	6,345.2	191.0	600.4	-81.7	0.24	0.20	-0.76
6,425.0	9.62	72.83	6,369.9	192.3	604.4	-82.2	0.94	0.08	5.60
6,450.0	9.61	71.38	6,394.5	193.6	608.4	-82.8	0.97	-0.04	-5.80
6,475.0	9.50	70.91	6,419.2	194.9	612.3	-83.4	0.54	-0.44	-1.88
6,500.0	9.52	70.27	6,443.8	196.3	616.2	-84.1	0.43	0.08	-2.56
6,525.0	9.36	69.89	6,468.5	197.7	620.0	-84.8	0.69	-0.64	-1.52
6,550.0	9.21	69.43	6,493.1	199.1	623.8	-85.5	0.67	-0.60	-1.84
6,575.0	9.12	69.51	6,517.8	200.5	627.5	-86.2	0.36	-0.36	0.32
6,600.0	8.85	70.77	6,542.5	201.8	631.2	-86.8	1.34	-1.08	5.04
6,625.0	8.70	70.97	6,567.2	203.0	634.8	-87.4	0.61	-0.60	0.80
6,650.0	8.51	71.24	6,591.9	204.3	638.4	-88.0	0.78	-0.76	1.08
6,675.0	8.40	71.43	6,616.7	205.4	641.8	-88.5	0.45	-0.44	0.76
6,700.0	8.24	72.27	6,641.4	206.6	645.3	-89.0	0.80	-0.64	3.36
6,725.0	8.08	73.62	6,666.2	207.6	648.7	-89.5	1.00	-0.64	5.40
6,750.0	8.05	73.87	6,690.9	208.6	652.0	-89.8	0.18	-0.12	1.00
6,775.0	8.00	74.51	6,715.7	209.5	655.4	-90.2	0.41	-0.20	2.56
6,800.0	7.71	75.36	6,740.4	210.4	658.7	-90.5	1.25	-1.16	3.40

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well EIDER 23 FEDERAL #702H
Project:	LEA COUNTY, NM	TVD Reference:	KB=30' @ 3597.3usft (Scan Quest)
Site:	BULLDOG	MD Reference:	KB=30' @ 3597.3usft (Scan Quest)
Well:	EIDER 23 FEDERAL #702H	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)
6,825.0	7.70	75.47	6,765.2	211.3	661.9	-90.7	0.07	-0.04	0.44
6,850.0	7.64	75.86	6,790.0	212.1	665.2	-91.0	0.32	-0.24	1.56
6,875.0	7.68	76.32	6,814.8	212.9	668.4	-91.2	0.29	0.16	1.84
6,900.0	7.77	76.08	6,839.5	213.7	671.7	-91.4	0.38	0.36	-0.96
6,925.0	7.84	76.07	6,864.3	214.5	675.0	-91.6	0.28	0.28	-0.04
6,950.0	7.98	75.94	6,889.1	215.3	678.3	-91.8	0.56	0.56	-0.52
6,975.0	8.00	76.08	6,913.8	216.2	681.7	-92.1	0.11	0.08	0.56
7,000.0	8.38	76.11	6,938.6	217.0	685.1	-92.3	1.52	1.52	0.12
7,025.0	8.65	75.49	6,963.3	217.9	688.7	-92.6	1.14	1.08	-2.48
7,050.0	8.69	75.96	6,988.0	218.9	692.4	-92.8	0.33	0.16	1.88
7,075.0	8.87	75.94	7,012.7	219.8	696.1	-93.1	0.72	0.72	-0.08
7,100.0	8.93	75.67	7,037.4	220.8	699.8	-93.3	0.29	0.24	-1.08
7,125.0	8.99	75.94	7,062.1	221.7	703.6	-93.6	0.29	0.24	1.08
7,150.0	9.13	75.92	7,086.8	222.7	707.4	-93.9	0.56	0.56	-0.08
7,175.0	9.17	77.71	7,111.5	223.6	711.3	-94.1	1.15	0.16	7.16
7,200.0	9.92	81.23	7,136.1	224.3	715.4	-94.1	3.80	3.00	14.08
7,225.0	10.01	81.98	7,160.7	225.0	719.6	-94.0	0.63	0.36	3.00
7,250.0	10.10	82.24	7,185.4	225.6	724.0	-93.8	0.40	0.36	1.04
7,275.0	10.14	81.99	7,210.0	226.2	728.3	-93.6	0.24	0.16	-1.00
7,300.0	10.07	82.42	7,234.6	226.8	732.7	-93.4	0.41	-0.28	1.72
7,325.0	10.22	82.48	7,259.2	227.3	737.0	-93.2	0.60	0.60	0.24
7,350.0	10.23	82.17	7,283.8	227.9	741.4	-93.0	0.22	0.04	-1.24
7,375.0	10.59	81.93	7,308.4	228.5	745.9	-92.9	1.45	1.44	-0.96
7,400.0	10.88	81.58	7,333.0	229.2	750.5	-92.7	1.19	1.16	-1.40
7,425.0	10.84	81.78	7,357.5	229.9	755.2	-92.5	0.22	-0.16	0.80
7,450.0	10.95	81.71	7,382.1	230.6	759.8	-92.4	0.44	0.44	-0.28
7,475.0	10.97	81.55	7,406.6	231.3	764.5	-92.2	0.15	0.08	-0.64
7,500.0	10.85	81.23	7,431.1	232.0	769.2	-92.1	0.54	-0.48	-1.28
7,525.0	10.51	80.10	7,455.7	232.7	773.8	-92.0	1.60	-1.36	-4.52
7,550.0	10.27	79.90	7,480.3	233.5	778.2	-92.0	0.97	-0.96	-0.80
7,575.0	10.29	78.87	7,504.9	234.3	782.6	-92.0	0.74	0.08	-4.12
7,600.0	10.34	78.85	7,529.5	235.2	787.0	-92.1	0.20	0.20	-0.08
7,625.0	10.33	79.82	7,554.1	236.0	791.4	-92.2	0.70	-0.04	3.88
7,650.0	10.45	78.91	7,578.7	236.9	795.9	-92.2	0.81	0.48	-3.64
7,675.0	10.48	79.31	7,603.3	237.7	800.3	-92.2	0.31	0.12	1.60
7,700.0	10.63	78.85	7,627.8	238.6	804.8	-92.3	0.69	0.60	-1.84
7,725.0	10.57	78.88	7,652.4	239.5	809.3	-92.4	0.24	-0.24	0.12
7,750.0	10.59	79.28	7,677.0	240.3	813.8	-92.4	0.30	0.08	1.60
7,775.0	10.56	78.39	7,701.6	241.2	818.3	-92.5	0.66	-0.12	-3.56
7,800.0	10.60	78.51	7,726.1	242.1	822.8	-92.6	0.18	0.16	0.48
7,825.0	10.51	77.75	7,750.7	243.1	827.3	-92.8	0.66	-0.36	-3.04
7,850.0	10.51	77.44	7,775.3	244.1	831.8	-92.9	0.23	0.00	-1.24
7,875.0	10.45	76.56	7,799.9	245.1	836.2	-93.2	0.68	-0.24	-3.52

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: EIDER 23 FEDERAL #702H
Wellbore: OWB
Design: AWP

Local Co-ordinate Reference: Well EIDER 23 FEDERAL #702H
TVD Reference: KB=30' @ 3597.3usft (Scan Quest)
MD Reference: KB=30' @ 3597.3usft (Scan Quest)
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	10.39	76.52	7,824.5	246.1	840.6	-93.4	0.24	-0.24	-0.16
7,925.0	10.42	76.87	7,849.1	247.2	845.0	-93.7	0.28	0.12	1.40
7,950.0	10.43	76.99	7,873.6	248.2	849.4	-93.9	0.10	0.04	0.48
7,975.0	10.39	76.70	7,898.2	249.2	853.8	-94.1	0.26	-0.16	-1.16
8,000.0	10.42	75.51	7,922.8	250.3	858.2	-94.4	0.87	0.12	-4.76
8,025.0	10.13	75.76	7,947.4	251.4	862.5	-94.7	1.17	-1.16	1.00
8,050.0	10.13	75.76	7,972.0	252.5	866.8	-95.0	0.00	0.00	0.00
8,075.0	10.12	75.32	7,996.6	253.6	871.0	-95.4	0.31	-0.04	-1.76
8,100.0	9.87	75.30	8,021.3	254.7	875.2	-95.7	1.00	-1.00	-0.08
8,125.0	9.86	74.90	8,045.9	255.8	879.3	-96.1	0.28	-0.04	-1.60
8,150.0	9.69	74.33	8,070.5	256.9	883.4	-96.4	0.78	-0.68	-2.28
8,175.0	9.64	74.99	8,095.2	258.0	887.5	-96.8	0.49	-0.20	2.64
8,200.0	9.71	74.98	8,119.8	259.1	891.5	-97.2	0.28	0.28	-0.04
8,225.0	9.74	75.34	8,144.5	260.2	895.6	-97.5	0.27	0.12	1.44
8,250.0	9.86	74.30	8,169.1	261.3	899.7	-97.9	0.86	0.48	-4.16
8,275.0	9.72	74.97	8,193.7	262.5	903.8	-98.3	0.72	-0.56	2.68
8,300.0	9.80	74.97	8,218.4	263.6	907.9	-98.6	0.32	0.32	0.00
8,325.0	9.82	74.45	8,243.0	264.7	912.0	-99.0	0.36	0.08	-2.08
8,350.0	9.95	73.66	8,267.6	265.9	916.2	-99.4	0.75	0.52	-3.16
8,375.0	9.59	74.47	8,292.3	267.0	920.2	-99.9	1.54	-1.44	3.24
8,400.0	9.56	74.52	8,316.9	268.1	924.2	-100.2	0.12	-0.12	0.20
8,425.0	9.62	74.54	8,341.6	269.2	928.3	-100.6	0.24	0.24	0.08
8,450.0	9.80	74.20	8,366.2	270.4	932.3	-101.0	0.76	0.72	-1.36
8,475.0	9.83	73.26	8,390.8	271.6	936.4	-101.5	0.65	0.12	-3.76
8,500.0	9.75	73.27	8,415.5	272.8	940.5	-102.0	0.32	-0.32	0.04
8,525.0	9.79	73.41	8,440.1	274.0	944.5	-102.4	0.19	0.16	0.56
8,550.0	9.68	73.21	8,464.8	275.2	948.6	-102.9	0.46	-0.44	-0.80
8,575.0	9.67	71.82	8,489.4	276.5	952.6	-103.4	0.94	-0.04	-5.56
8,600.0	9.64	72.00	8,514.1	277.8	956.6	-104.0	0.17	-0.12	0.72
8,625.0	9.49	72.20	8,538.7	279.1	960.5	-104.6	0.61	-0.60	0.80
8,650.0	9.31	72.81	8,563.4	280.3	964.4	-105.1	0.82	-0.72	2.44
8,675.0	9.35	71.72	8,588.0	281.5	968.3	-105.6	0.72	0.16	-4.36
8,700.0	9.37	72.20	8,612.7	282.8	972.2	-106.2	0.32	0.08	1.92
8,725.0	9.42	72.16	8,637.4	284.0	976.0	-106.7	0.20	0.20	-0.16
8,750.0	9.24	71.59	8,662.0	285.3	979.9	-107.3	0.81	-0.72	-2.28
8,775.0	9.15	71.88	8,686.7	286.6	983.7	-107.8	0.40	-0.36	1.16
8,800.0	9.33	71.69	8,711.4	287.8	987.5	-108.4	0.73	0.72	-0.76
8,825.0	9.44	71.15	8,736.1	289.1	991.4	-109.0	0.56	0.44	-2.16
8,850.0	9.31	70.95	8,760.7	290.4	995.2	-109.6	0.54	-0.52	-0.80
8,875.0	8.98	70.83	8,785.4	291.7	999.0	-110.2	1.32	-1.32	-0.48
8,900.0	8.83	71.62	8,810.1	293.0	1,002.6	-110.8	0.77	-0.60	3.16
8,925.0	8.80	70.79	8,834.8	294.2	1,006.3	-111.4	0.52	-0.12	-3.32
8,950.0	8.62	71.18	8,859.5	295.4	1,009.8	-112.0	0.76	-0.72	1.56

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well EIDER 23 FEDERAL #702H
Project:	LEA COUNTY, NM	TVD Reference:	KB=30' @ 3597.3usft (Scan Quest)
Site:	BULLDOG	MD Reference:	KB=30' @ 3597.3usft (Scan Quest)
Well:	EIDER 23 FEDERAL #702H	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	8.43	71.26	8,884.2	296.6	1,013.4	-112.5	0.76	-0.76	0.32
9,000.0	8.46	71.61	8,909.0	297.8	1,016.8	-113.0	0.24	0.12	1.40
9,025.0	8.41	71.27	8,933.7	299.0	1,020.3	-113.6	0.28	-0.20	-1.36
9,050.0	8.32	70.26	8,958.4	300.2	1,023.7	-114.2	0.69	-0.36	-4.04
9,075.0	8.23	67.77	8,983.2	301.5	1,027.1	-114.8	1.48	-0.36	-9.96
9,100.0	8.49	64.73	9,007.9	302.9	1,030.4	-115.7	2.05	1.04	-12.16
9,125.0	8.54	65.02	9,032.6	304.5	1,033.8	-116.6	0.26	0.20	1.16
9,150.0	8.60	65.25	9,057.4	306.1	1,037.2	-117.6	0.28	0.24	0.92
9,175.0	8.65	64.60	9,082.1	307.6	1,040.6	-118.5	0.44	0.20	-2.60
9,200.0	8.63	64.58	9,106.8	309.3	1,043.9	-119.5	0.08	-0.08	-0.08
9,225.0	8.74	64.68	9,131.5	310.9	1,047.4	-120.5	0.44	0.44	0.40
9,250.0	8.38	64.77	9,156.2	312.5	1,050.7	-121.5	1.44	-1.44	0.36
9,275.0	7.97	64.71	9,181.0	314.0	1,053.9	-122.4	1.64	-1.64	-0.24
9,300.0	7.61	63.49	9,205.7	315.5	1,057.0	-123.3	1.58	-1.44	-4.88
9,325.0	7.22	61.75	9,230.5	316.9	1,059.9	-124.3	1.80	-1.56	-6.96
9,350.0	7.13	61.47	9,255.3	318.4	1,062.6	-125.2	0.39	-0.36	-1.12
9,375.0	7.72	61.43	9,280.1	320.0	1,065.4	-126.3	2.36	2.36	-0.16
9,400.0	8.83	61.96	9,304.9	321.7	1,068.6	-127.4	4.45	4.44	2.12
9,425.0	10.12	64.28	9,329.5	323.5	1,072.3	-128.6	5.38	5.16	9.28
9,450.0	11.08	66.63	9,354.1	325.4	1,076.5	-129.7	4.21	3.84	9.40
9,475.0	11.96	68.06	9,378.6	327.4	1,081.1	-130.8	3.70	3.52	5.72
9,500.0	12.16	68.96	9,403.0	329.3	1,085.9	-131.8	1.10	0.80	3.60
9,525.0	12.08	69.05	9,427.5	331.2	1,090.8	-132.8	0.33	-0.32	0.36
9,550.0	12.01	68.91	9,451.9	333.0	1,095.7	-133.7	0.30	-0.28	-0.56
9,575.0	11.72	68.37	9,476.4	334.9	1,100.5	-134.7	1.24	-1.16	-2.16
9,600.0	11.37	67.23	9,500.9	336.8	1,105.1	-135.8	1.67	-1.40	-4.56
9,625.0	11.23	66.11	9,525.4	338.7	1,109.6	-136.9	1.04	-0.56	-4.48
9,650.0	11.52	65.99	9,549.9	340.7	1,114.1	-138.1	1.16	1.16	-0.48
9,675.0	11.96	65.69	9,574.4	342.8	1,118.8	-139.3	1.78	1.76	-1.20
9,700.0	12.14	65.43	9,598.8	345.0	1,123.5	-140.6	0.75	0.72	-1.04
9,725.0	11.94	64.64	9,623.3	347.2	1,128.2	-141.9	1.04	-0.80	-3.16
9,750.0	11.61	63.06	9,647.8	349.4	1,132.8	-143.3	1.85	-1.32	-6.32
9,775.0	11.40	61.86	9,672.3	351.7	1,137.2	-144.8	1.27	-0.84	-4.80
9,800.0	10.85	60.51	9,696.8	354.0	1,141.5	-146.3	2.43	-2.20	-5.40
9,825.0	10.65	59.51	9,721.4	356.4	1,145.5	-147.9	1.09	-0.80	-4.00
9,850.0	10.86	59.85	9,745.9	358.7	1,149.5	-149.5	0.88	0.84	1.36
9,875.0	11.13	61.58	9,770.5	361.1	1,153.7	-151.1	1.71	1.08	6.92
9,900.0	11.24	67.06	9,795.0	363.2	1,158.1	-152.4	4.27	0.44	21.92
9,925.0	11.21	69.19	9,819.5	365.0	1,162.6	-153.3	1.66	-0.12	8.52
9,950.0	10.96	77.71	9,844.0	366.3	1,167.2	-153.9	6.62	-1.00	34.08
9,975.0	10.85	83.00	9,868.6	367.1	1,171.8	-153.8	4.03	-0.44	21.16
10,000.0	10.81	84.06	9,893.1	367.7	1,176.5	-153.5	0.81	-0.16	4.24
10,025.0	10.81	83.97	9,917.7	368.2	1,181.2	-153.2	0.07	0.00	-0.36
10,050.0	10.81	84.13	9,942.3	368.6	1,185.8	-152.8	0.12	0.00	0.64

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well EIDER 23 FEDERAL #702H
Project:	LEA COUNTY, NM	TVD Reference:	KB=30' @ 3597.3usft (Scan Quest)
Site:	BULLDOG	MD Reference:	KB=30' @ 3597.3usft (Scan Quest)
Well:	EIDER 23 FEDERAL #702H	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	10.83	83.96	9,966.8	369.1	1,190.5	-152.5	0.15	0.08	-0.68
10,100.0	10.75	84.58	9,991.4	369.6	1,195.2	-152.1	0.56	-0.32	2.48
10,125.0	10.82	84.88	10,015.9	370.0	1,199.8	-151.7	0.36	0.28	1.20
10,150.0	10.77	85.13	10,040.5	370.4	1,204.5	-151.3	0.27	-0.20	1.00
10,175.0	10.57	85.53	10,065.1	370.8	1,209.1	-150.9	0.85	-0.80	1.60
10,200.0	10.33	85.67	10,089.6	371.2	1,213.6	-150.4	0.97	-0.96	0.56
10,225.0	9.88	86.28	10,114.3	371.5	1,218.0	-149.9	1.85	-1.80	2.44
10,250.0	9.49	86.11	10,138.9	371.7	1,222.2	-149.5	1.56	-1.56	-0.68
10,275.0	9.07	86.44	10,163.6	372.0	1,226.2	-149.0	1.69	-1.68	1.32
10,300.0	8.79	86.85	10,188.3	372.2	1,230.1	-148.5	1.15	-1.12	1.64
10,325.0	8.65	86.77	10,213.0	372.4	1,233.9	-148.1	0.56	-0.56	-0.32
10,350.0	8.43	87.20	10,237.7	372.6	1,237.6	-147.6	0.92	-0.88	1.72
10,375.0	8.20	87.92	10,262.4	372.8	1,241.2	-147.1	1.01	-0.92	2.88
10,400.0	8.16	89.13	10,287.2	372.9	1,244.7	-146.6	0.71	-0.16	4.84
10,425.0	8.17	94.69	10,311.9	372.8	1,248.3	-145.8	3.16	0.04	22.24
10,450.0	8.18	97.20	10,336.7	372.4	1,251.8	-144.9	1.43	0.04	10.04
10,475.0	7.97	99.41	10,361.4	371.9	1,255.3	-143.7	1.50	-0.84	8.84
10,500.0	7.19	100.90	10,386.2	371.3	1,258.5	-142.6	3.22	-3.12	5.96
10,525.0	6.47	101.25	10,411.0	370.7	1,261.5	-141.5	2.88	-2.88	1.40
10,550.0	6.17	102.33	10,435.9	370.2	1,264.1	-140.5	1.29	-1.20	4.32
10,575.0	5.66	104.65	10,460.7	369.6	1,266.7	-139.5	2.25	-2.04	9.28
10,600.0	5.02	111.30	10,485.6	368.9	1,268.9	-138.4	3.56	-2.56	26.60
10,625.0	4.14	107.49	10,510.6	368.2	1,270.7	-137.4	3.72	-3.52	-15.24
10,650.0	3.85	107.90	10,535.5	367.7	1,272.4	-136.6	1.17	-1.16	1.64
10,675.0	3.81	108.65	10,560.4	367.2	1,274.0	-135.8	0.26	-0.16	3.00
10,700.0	3.36	107.72	10,585.4	366.7	1,275.5	-135.0	1.81	-1.80	-3.72
10,725.0	3.09	108.16	10,610.4	366.2	1,276.8	-134.4	1.08	-1.08	1.76
10,750.0	3.10	108.04	10,635.3	365.8	1,278.1	-133.7	0.05	0.04	-0.48
10,775.0	2.88	111.29	10,660.3	365.4	1,279.3	-133.1	1.11	-0.88	13.00
10,800.0	2.06	125.55	10,685.3	364.9	1,280.3	-132.4	4.07	-3.28	57.04
10,825.0	1.34	156.64	10,710.3	364.4	1,280.8	-131.8	4.58	-2.88	124.36
10,850.0	1.36	167.39	10,735.2	363.8	1,280.9	-131.2	1.01	0.08	43.00
10,875.0	1.31	163.90	10,760.2	363.2	1,281.1	-130.7	0.38	-0.20	-13.96
10,900.0	0.70	196.78	10,785.2	362.8	1,281.1	-130.2	3.26	-2.44	131.52
10,925.0	0.64	239.32	10,810.2	362.6	1,281.0	-130.0	1.96	-0.24	170.16
10,950.0	0.66	242.42	10,835.2	362.5	1,280.7	-130.0	0.16	0.08	12.40
10,975.0	0.54	300.26	10,860.2	362.5	1,280.5	-130.0	2.36	-0.48	231.36
11,000.0	1.09	331.31	10,885.2	362.7	1,280.3	-130.3	2.75	2.20	124.20
11,025.0	1.02	335.10	10,910.2	363.1	1,280.1	-130.7	0.40	-0.28	15.16
11,050.0	1.21	344.39	10,935.2	363.6	1,279.9	-131.2	1.05	0.76	37.16
11,075.0	1.61	16.31	10,960.2	364.2	1,279.9	-131.8	3.46	1.60	127.68
11,100.0	2.12	29.26	10,985.2	364.9	1,280.2	-132.5	2.63	2.04	51.80
11,125.0	2.37	30.00	11,010.2	365.8	1,280.7	-133.2	1.01	1.00	2.96

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well EIDER 23 FEDERAL #702H
Project:	LEA COUNTY, NM	TVD Reference:	KB=30' @ 3597.3usft (Scan Quest)
Site:	BULLDOG	MD Reference:	KB=30' @ 3597.3usft (Scan Quest)
Well:	EIDER 23 FEDERAL #702H	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	2.54	33.39	11,035.2	366.7	1,281.3	-134.0	0.89	0.68	13.56
11,175.0	2.53	31.72	11,060.1	367.6	1,281.9	-134.8	0.30	-0.04	-6.68
11,200.0	2.51	29.80	11,085.1	368.6	1,282.4	-135.6	0.35	-0.08	-7.68
11,225.0	2.29	30.49	11,110.1	369.5	1,283.0	-136.4	0.89	-0.88	2.76
11,250.0	2.31	26.40	11,135.1	370.3	1,283.4	-137.2	0.66	0.08	-16.36
11,275.0	1.97	24.91	11,160.0	371.2	1,283.9	-138.0	1.38	-1.36	-5.96
11,300.0	1.66	18.22	11,185.0	371.9	1,284.1	-138.7	1.50	-1.24	-26.76
11,325.0	1.68	20.78	11,210.0	372.6	1,284.4	-139.3	0.31	0.08	10.24
11,350.0	1.61	18.65	11,235.0	373.3	1,284.6	-139.9	0.37	-0.28	-8.52
11,375.0	1.77	24.82	11,260.0	374.0	1,284.9	-140.5	0.97	0.64	24.68
11,400.0	1.80	27.94	11,285.0	374.7	1,285.3	-141.2	0.41	0.12	12.48
11,425.0	1.87	30.35	11,310.0	375.4	1,285.6	-141.8	0.42	0.28	9.64
11,450.0	1.80	47.38	11,335.0	376.0	1,286.1	-142.3	2.19	-0.28	68.12
11,475.0	2.02	64.21	11,360.0	376.4	1,286.8	-142.6	2.40	0.88	67.32
11,500.0	2.01	69.32	11,384.9	376.8	1,287.6	-142.8	0.72	-0.04	20.44
11,525.0	1.84	66.77	11,409.9	377.1	1,288.4	-143.0	0.76	-0.68	-10.20
11,550.0	1.49	63.25	11,434.9	377.4	1,289.1	-143.2	1.46	-1.40	-14.08
11,560.3	1.29	62.12	11,445.2	377.5	1,289.3	-143.3	1.95	-1.93	-10.93
11,844.0	2.30	223.09	11,728.8	374.8	1,288.2	-140.8	1.25	0.36	56.75
FIRST GORDON MWD SVY @ 11844'MD									
11,907.0	2.51	190.34	11,791.8	372.6	1,287.1	-138.8	2.18	0.33	-51.98
11,939.0	5.11	163.02	11,823.7	370.5	1,287.4	-136.7	9.69	8.13	-85.38
11,970.0	9.01	161.02	11,854.5	366.9	1,288.6	-132.9	12.60	12.58	-6.45
12,002.0	11.86	159.81	11,886.0	361.4	1,290.5	-127.2	8.93	8.91	-3.78
12,034.0	14.99	152.30	11,917.1	354.7	1,293.6	-120.0	11.18	9.78	-23.47
12,047.9	16.58	148.39	11,930.5	351.4	1,295.5	-116.5	13.76	11.44	-28.13
FTP @ 12049.7'MD / 11930.5'TVD									
12,066.0	18.74	144.29	11,947.7	346.8	1,298.5	-111.4	13.76	11.93	-22.65
12,098.0	22.20	148.78	11,977.7	337.5	1,304.7	-101.1	11.87	10.81	14.03
12,130.0	24.76	153.12	12,007.0	326.3	1,310.8	-89.1	9.65	8.00	13.56
12,162.0	28.06	154.64	12,035.7	313.6	1,317.1	-75.4	10.53	10.31	4.75
12,194.0	29.95	155.49	12,063.7	299.5	1,323.6	-60.4	6.04	5.91	2.66
12,226.0	32.09	157.70	12,091.1	284.4	1,330.2	-44.3	7.57	6.69	6.91
12,258.0	35.68	160.91	12,117.7	267.7	1,336.4	-26.8	12.53	11.22	10.03
12,289.0	37.69	163.40	12,142.5	250.0	1,342.1	-8.4	8.07	6.48	8.03
12,321.0	40.53	167.93	12,167.3	230.5	1,347.1	11.7	12.59	8.88	14.16
12,353.0	43.45	171.77	12,191.1	209.4	1,350.8	33.1	12.15	9.13	12.00
12,385.0	44.80	175.81	12,214.1	187.3	1,353.2	55.3	9.75	4.22	12.63
12,417.0	45.43	178.96	12,236.7	164.6	1,354.3	77.8	7.25	1.97	9.84
12,449.0	46.94	181.30	12,258.8	141.6	1,354.2	100.5	7.08	4.72	7.31
12,481.0	48.71	181.66	12,280.3	117.9	1,353.6	123.7	5.59	5.53	1.13
12,513.0	51.50	182.85	12,300.9	93.3	1,352.6	147.7	9.17	8.72	3.72
12,545.0	54.79	184.42	12,320.0	67.8	1,351.0	172.5	11.00	10.28	4.91
12,577.0	56.27	184.26	12,338.2	41.5	1,349.0	198.1	4.64	4.63	-0.50

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well EIDER 23 FEDERAL #702H
Project:	LEA COUNTY, NM	TVD Reference:	KB=30' @ 3597.3usft (Scan Quest)
Site:	BULLDOG	MD Reference:	KB=30' @ 3597.3usft (Scan Quest)
Well:	EIDER 23 FEDERAL #702H	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)
12,608.0	56.40	184.25	12,355.3	15.7	1,347.1	223.0	0.42	0.42	-0.03
12,640.0	58.57	184.17	12,372.5	-11.2	1,345.1	249.2	6.78	6.78	-0.25
12,672.0	62.67	183.54	12,388.2	-39.0	1,343.2	276.2	12.93	12.81	-1.97
12,704.0	66.77	182.27	12,401.9	-67.9	1,341.8	304.4	13.31	12.81	-3.97
12,736.0	69.36	182.05	12,413.9	-97.5	1,340.6	333.4	8.12	8.09	-0.69
12,768.0	71.08	183.09	12,424.7	-127.6	1,339.3	362.7	6.18	5.38	3.25
12,799.0	73.80	183.83	12,434.0	-157.1	1,337.5	391.5	9.06	8.77	2.39
12,831.0	77.79	184.75	12,441.9	-188.0	1,335.2	421.5	12.78	12.47	2.88
12,863.0	81.32	184.29	12,447.7	-219.4	1,332.7	451.9	11.12	11.03	-1.44
12,895.0	81.54	184.09	12,452.5	-251.0	1,330.4	482.6	0.92	0.69	-0.63
12,927.0	82.81	184.08	12,456.8	-282.6	1,328.1	513.3	3.97	3.97	-0.03
12,958.0	84.99	183.65	12,460.1	-313.3	1,326.1	543.2	7.17	7.03	-1.39
12,990.0	89.88	181.72	12,461.5	-345.3	1,324.6	574.3	16.43	15.28	-6.03
13,085.0	93.48	180.02	12,458.7	-440.2	1,323.1	667.5	4.19	3.79	-1.79
13,180.0	94.89	180.36	12,451.8	-534.9	1,322.8	760.7	1.53	1.48	0.36
13,276.0	92.85	182.42	12,445.3	-630.7	1,320.5	854.5	3.02	-2.13	2.15
13,370.0	92.72	185.28	12,440.8	-724.3	1,314.2	945.6	3.04	-0.14	3.04
13,466.0	92.33	183.45	12,436.5	-820.0	1,306.9	1,038.4	1.95	-0.41	-1.91
13,560.0	90.02	184.51	12,434.6	-913.7	1,300.4	1,129.5	2.70	-2.46	1.13
13,654.0	89.26	184.47	12,435.2	-1,007.4	1,293.0	1,220.5	0.81	-0.81	-0.04
13,748.0	92.05	182.73	12,434.1	-1,101.2	1,287.1	1,311.7	3.50	2.97	-1.85
13,842.0	91.26	181.86	12,431.4	-1,195.1	1,283.3	1,403.5	1.25	-0.84	-0.93
13,937.0	92.75	181.37	12,428.1	-1,290.0	1,280.7	1,496.4	1.65	1.57	-0.52
14,032.0	88.93	179.91	12,426.7	-1,385.0	1,279.6	1,589.7	4.30	-4.02	-1.54
14,126.0	89.66	180.38	12,427.9	-1,479.0	1,279.4	1,682.1	0.92	0.78	0.50
14,220.0	89.33	180.21	12,428.7	-1,573.0	1,278.9	1,774.6	0.39	-0.35	-0.18
14,315.0	86.91	177.69	12,431.8	-1,667.9	1,280.6	1,868.3	3.68	-2.55	-2.65
14,410.0	85.12	177.48	12,438.4	-1,762.6	1,284.6	1,962.2	1.90	-1.88	-0.22
14,505.0	86.36	176.42	12,445.5	-1,857.2	1,289.7	2,056.2	1.72	1.31	-1.12
14,600.0	89.39	177.86	12,449.0	-1,952.0	1,294.4	2,150.3	3.53	3.19	1.52
14,695.0	88.50	178.36	12,450.7	-2,046.9	1,297.5	2,244.3	1.07	-0.94	0.53
14,790.0	90.34	175.69	12,451.7	-2,141.7	1,302.4	2,338.5	3.41	1.94	-2.81
14,885.0	93.24	173.89	12,448.7	-2,236.3	1,311.1	2,433.1	3.59	3.05	-1.89
14,980.0	95.54	176.65	12,441.5	-2,330.7	1,318.9	2,527.4	3.78	2.42	2.91
15,075.0	96.30	178.91	12,431.7	-2,425.1	1,322.5	2,621.0	2.50	0.80	2.38
15,170.0	97.69	177.47	12,420.1	-2,519.3	1,325.5	2,714.2	2.10	1.46	-1.52
15,265.0	95.44	180.55	12,409.2	-2,613.7	1,327.1	2,807.4	4.00	-2.37	3.24
15,360.0	98.67	186.09	12,397.5	-2,707.7	1,321.7	2,899.0	6.71	3.40	5.83
15,454.0	94.92	189.29	12,386.4	-2,800.2	1,309.2	2,987.8	5.23	-3.99	3.40
15,549.0	87.84	184.20	12,384.1	-2,894.4	1,298.1	3,078.6	9.18	-7.45	-5.36
15,644.0	87.70	180.99	12,387.8	-2,989.3	1,293.8	3,171.1	3.38	-0.15	-3.38
15,739.0	87.72	179.33	12,391.6	-3,084.2	1,293.5	3,264.5	1.75	0.02	-1.75
15,834.0	83.19	177.03	12,399.2	-3,178.8	1,296.5	3,358.1	5.34	-4.77	-2.42

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: EIDER 23 FEDERAL #702H
Wellbore: OWB
Design: AWP

Local Co-ordinate Reference: Well EIDER 23 FEDERAL #702H
TVD Reference: KB=30' @ 3597.3usft (Scan Quest)
MD Reference: KB=30' @ 3597.3usft (Scan Quest)
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)
15,929.0	84.13	176.56	12,409.6	-3,273.1	1,301.8	3,451.9	1.10	0.99	-0.49
16,024.0	89.75	177.21	12,414.7	-3,367.8	1,306.9	3,546.0	5.96	5.92	0.68
16,118.0	88.78	175.64	12,415.9	-3,461.6	1,312.8	3,639.3	1.96	-1.03	-1.67
16,212.0	87.67	178.73	12,418.8	-3,555.4	1,317.4	3,732.5	3.49	-1.18	3.29
16,306.0	88.75	181.31	12,421.8	-3,649.3	1,317.4	3,824.9	2.97	1.15	2.74
16,400.0	91.13	180.94	12,421.9	-3,743.3	1,315.5	3,917.1	2.56	2.53	-0.39
16,494.0	89.48	180.67	12,421.4	-3,837.3	1,314.2	4,009.4	1.78	-1.76	-0.29
16,588.0	90.43	177.91	12,421.4	-3,931.3	1,315.4	4,102.1	3.11	1.01	-2.94
16,683.0	88.32	175.31	12,422.5	-4,026.1	1,321.0	4,196.4	3.52	-2.22	-2.74
16,777.0	90.45	175.27	12,423.5	-4,119.8	1,328.7	4,289.9	2.27	2.27	-0.04
16,871.0	89.72	176.08	12,423.3	-4,213.5	1,335.8	4,383.5	1.16	-0.78	0.86
16,965.0	87.72	180.66	12,425.4	-4,307.4	1,338.5	4,476.3	5.32	-2.13	4.87
17,059.0	90.67	179.93	12,426.8	-4,401.4	1,338.0	4,568.8	3.23	3.14	-0.78
17,154.0	93.71	180.46	12,423.1	-4,496.3	1,337.7	4,662.1	3.25	3.20	0.56
17,248.0	92.83	178.90	12,417.8	-4,590.1	1,338.2	4,754.6	1.90	-0.94	-1.66
17,342.0	92.47	179.43	12,413.4	-4,684.0	1,339.6	4,847.2	0.68	-0.38	0.56
17,436.0	90.59	178.40	12,410.9	-4,778.0	1,341.3	4,940.0	2.28	-2.00	-1.10
17,530.0	87.57	176.51	12,412.4	-4,871.9	1,345.5	5,033.1	3.79	-3.21	-2.01
17,625.0	93.72	179.45	12,411.4	-4,966.7	1,348.9	5,127.1	7.17	6.47	3.09
17,719.0	95.16	178.61	12,404.1	-5,060.4	1,350.4	5,219.6	1.77	1.53	-0.89
17,813.0	95.10	181.01	12,395.7	-5,154.1	1,350.8	5,311.8	2.54	-0.06	2.55
17,908.0	92.79	184.36	12,389.1	-5,248.7	1,346.3	5,404.2	4.28	-2.43	3.53
18,003.0	92.53	183.82	12,384.7	-5,343.4	1,339.5	5,496.1	0.63	-0.27	-0.57
18,098.0	88.01	181.98	12,384.3	-5,438.2	1,334.7	5,588.6	5.14	-4.76	-1.94
18,193.0	87.63	178.72	12,387.9	-5,533.1	1,334.2	5,681.9	3.45	-0.40	-3.43
18,288.0	89.46	176.67	12,390.3	-5,628.0	1,338.0	5,776.0	2.89	1.93	-2.16
18,383.0	90.40	177.69	12,390.4	-5,722.9	1,342.7	5,870.2	1.46	0.99	1.07
18,478.0	91.91	179.55	12,388.5	-5,817.8	1,344.9	5,964.1	2.52	1.59	1.96
18,573.0	91.94	178.39	12,385.3	-5,912.8	1,346.6	6,057.8	1.22	0.03	-1.22
18,667.0	89.77	180.15	12,383.9	-6,006.7	1,347.8	6,150.5	2.97	-2.31	1.87
18,762.0	89.32	181.10	12,384.7	-6,101.7	1,346.8	6,243.8	1.11	-0.47	1.00
18,857.0	89.62	180.33	12,385.5	-6,196.7	1,345.6	6,337.1	0.87	0.32	-0.81
18,952.0	88.56	181.99	12,387.1	-6,291.7	1,343.7	6,430.2	2.07	-1.12	1.75
19,047.0	88.86	181.74	12,389.2	-6,386.6	1,340.6	6,523.1	0.41	0.32	-0.26
19,142.0	89.33	180.32	12,390.7	-6,481.6	1,338.9	6,616.2	1.57	0.49	-1.49
19,237.0	89.36	179.81	12,391.8	-6,576.6	1,338.8	6,709.7	0.54	0.03	-0.54
19,332.0	89.23	179.31	12,393.0	-6,671.6	1,339.5	6,803.3	0.54	-0.14	-0.53
19,427.0	89.18	179.50	12,394.3	-6,766.5	1,340.5	6,897.0	0.21	-0.05	0.20
19,522.0	92.93	179.35	12,392.5	-6,861.5	1,341.5	6,990.6	3.95	3.95	-0.16
19,617.0	94.12	177.93	12,386.7	-6,956.3	1,343.7	7,084.3	1.95	1.25	-1.49
19,712.0	93.75	177.58	12,380.2	-7,051.0	1,347.4	7,178.2	0.54	-0.39	-0.37
19,806.0	89.10	177.12	12,377.8	-7,144.8	1,351.8	7,271.3	4.97	-4.95	-0.49
19,901.0	87.40	181.25	12,380.7	-7,239.8	1,353.1	7,365.0	4.70	-1.79	4.35

Survey Report

Company: NORTHERN DELAWARE BASIN	Local Co-ordinate Reference: Well EIDER 23 FEDERAL #702H
Project: LEA COUNTY, NM	TVD Reference: KB=30' @ 3597.3usft (Scan Quest)
Site: BULLDOG	MD Reference: KB=30' @ 3597.3usft (Scan Quest)
Well: EIDER 23 FEDERAL #702H	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)
19,995.0	86.84	178.68	12,385.4	-7,333.6	1,353.2	7,457.4	2.79	-0.60	-2.73
20,023.0	87.10	178.00	12,386.9	-7,361.6	1,354.0	7,485.0	2.60	0.93	-2.43
LAST MWD SVY @ 20023'MD									
20,033.2	87.10	178.00	12,387.4	-7,371.8	1,354.3	7,495.1	0.00	0.00	0.00
LTP @ 20033.2'MD / 12387.4'TVD									
20,082.0	87.10	178.00	12,389.9	-7,420.5	1,356.0	7,543.3	0.00	0.00	0.00
PTD @ 20082'MD									

Design Targets

Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- Shape									
5750' VS - Eider 23 F	0.81	359.76	12,400.0	-5,603.5	1,327.6	434,859.03	714,933.79	32° 11' 37.089 N	103° 38' 18.708 W
- actual wellpath misses target center by 13.5usft at 18263.3usft MD (12390.0 TVD, -5603.4 N, 1336.7 E)									
- Point									
LTP EIDER FEDERAL	0.00	0.00	12,404.5	-7,371.9	1,335.1	433,090.60	714,941.30	32° 11' 19.588 N	103° 38' 18.753 W
- actual wellpath misses target center by 25.7usft at 20033.2usft MD (12387.4 TVD, -7371.8 N, 1354.3 E)									
- Point									
PBHL EIDER FEDER	-0.58	359.76	12,405.0	-7,421.9	1,335.3	433,040.60	714,941.50	32° 11' 19.094 N	103° 38' 18.755 W
- actual wellpath misses target center by 25.7usft at 20082.0usft MD (12389.9 TVD, -7420.5 N, 1356.0 E)									
- Rectangle (sides W100.0 H1,774.4 D20.0)									
FTP EIDER FEDERAL	0.00	0.00	12,456.0	119.4	1,303.4	440,581.90	714,909.60	32° 12' 33.722 N	103° 38' 18.559 W
- actual wellpath misses target center by 148.4usft at 12580.5usft MD (12340.1 TVD, 38.6 N, 1348.8 E)									
- Circle (radius 50.0)									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
11,844.0	11,728.8	374.8	1,288.2	FIRST GORDON MWD SVY @ 11844'MD
12,047.9	11,930.5	351.4	1,295.5	FTP @ 12049.7'MD / 11930.5'TVD
20,023.0	12,386.9	-7,361.6	1,354.0	LAST MWD SVY @ 20023'MD
20,033.2	12,387.4	-7,371.8	1,354.3	LTP @ 20033.2'MD / 12387.4'TVD
20,082.0	12,389.9	-7,420.5	1,356.0	PTD @ 20082'MD

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------