

30-015-41739

COG

SRO STATE COM #41H

ENSIGN #156

7/31/2017

Scientific Drilling

The

In Wellbore Placement

SURVEY REPORT

SRO STATE COM #41H

DEFINITIVE KEEPER GYRO SURVEY

CUSTOMER COG
PROJECT SRO State Com #41H
FIELD SRO State Com #41H

SDI JOB NO. OP.003210
SDI DISTRICT Midland
SDI KIT/UNIT

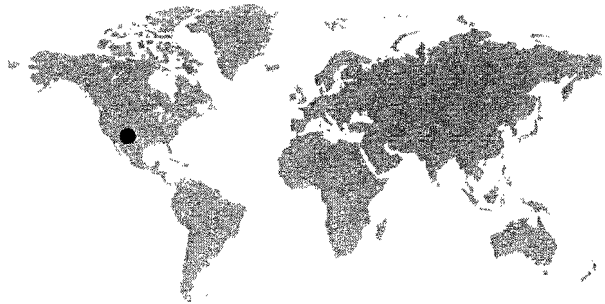
SITE INFORMATION

Site Name SRO State Com #41H
Lat/Long 32.0783025° N, 104.0695036° W
Northing 392,310.5 ft
Easting 581,716.4 ft

Section
Township
Range

MAP INFORMATION

North Reference Grid North
Grid Correction -0.14 deg
System US State Plane 1927
Datum North American Datum 1927 (Clarke 1866)
Map Zone New Mexico East: 3001

**WELL INFORMATION**

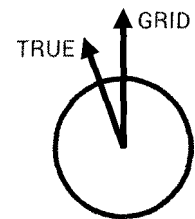
Lat/Long 32.0782914° N, 104.0734428° W
Northing 392,303.5 ft
Easting 580,496.3 ft
UWI 30-015-41739

DEPTH AND ELEVATION REFERENCE

Ground Level 2938.9 ft above Mean Sea
Level
Reference Datum KB
Reference Height 26 ft above G.L.
Reference Elevation 2964.9 ft

VERTICAL SECTION REFERENCE

+N/-S 0 ft
+E/-W 0 ft
Proposal Direction 179.41°
Calculation Method Minimum Curvature

**LOCAL GRAVITY REFERENCE INFORMATION**

Local Gravity 998.533 mG [computed]
True to Grid subtract 0.14°

WELL NOTES

Keeper Gyro Survey ran in 4 1/2" Drill Pipe to 7,512'

OPERATORS

C. Booher

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	0.24	7.97	100.00	-0.21	0.21	0.03	0.24	0.21	7.97
125.00	0.39	15.37	125.00	-0.34	0.34	0.06	0.63	0.35	9.79
150.00	0.52	12.24	150.00	-0.53	0.53	0.11	0.53	0.54	11.17
175.00	0.67	8.42	175.00	-0.79	0.79	0.15	0.61	0.80	10.83
200.00	0.73	6.03	200.00	-1.09	1.09	0.19	0.29	1.11	9.82
225.00	0.85	5.33	224.99	-1.43	1.44	0.22	0.46	1.45	8.83
250.00	0.92	359.89	249.99	-1.82	1.82	0.24	0.43	1.84	7.51
275.00	0.94	3.10	274.99	-2.22	2.22	0.25	0.22	2.24	6.43
300.00	0.97	4.05	299.98	-2.64	2.64	0.28	0.17	2.65	5.98
325.00	1.01	353.08	324.98	-3.07	3.07	0.27	0.77	3.08	4.93
350.00	1.01	359.07	349.98	-3.51	3.51	0.23	0.42	3.52	3.83
375.00	1.05	0.04	374.97	-3.96	3.96	0.23	0.16	3.97	3.35
400.00	0.99	1.84	399.97	-4.40	4.40	0.24	0.25	4.41	3.10
425.00	1.03	355.77	424.96	-4.84	4.85	0.23	0.46	4.85	2.71
450.00	1.05	357.74	449.96	-5.30	5.30	0.20	0.16	5.30	2.20
475.00	1.01	0.16	474.96	-5.75	5.75	0.19	0.25	5.75	1.94
500.00	1.02	3.18	499.95	-6.19	6.19	0.21	0.22	6.19	1.92
525.00	1.03	12.27	524.95	-6.63	6.63	0.27	0.65	6.64	2.31
550.00	1.14	28.54	549.94	-7.06	7.07	0.43	1.30	7.08	3.51
575.00	1.57	42.49	574.94	-7.53	7.54	0.78	2.16	7.58	5.94
600.00	1.49	40.51	599.93	-8.02	8.04	1.23	0.39	8.13	8.67
625.00	1.46	41.99	624.92	-8.50	8.52	1.65	0.18	8.68	10.96
650.00	1.57	43.46	649.91	-8.98	9.01	2.10	0.46	9.25	13.12
675.00	1.47	42.04	674.90	-9.47	9.49	2.55	0.41	9.83	15.03
700.00	1.61	44.33	699.89	-9.95	9.98	3.01	0.59	10.43	16.78
725.00	1.55	39.95	724.88	-10.46	10.49	3.47	0.53	11.05	18.31
750.00	1.60	43.99	749.87	-10.96	11.00	3.93	0.49	11.68	19.66
775.00	1.60	42.53	774.86	-11.47	11.51	4.41	0.16	12.33	20.96
800.00	1.65	43.10	799.85	-11.98	12.03	4.89	0.22	12.99	22.13
825.00	1.68	40.17	824.84	-12.52	12.58	5.38	0.35	13.68	23.14
850.00	1.66	38.40	849.83	-13.08	13.14	5.84	0.22	14.38	23.95

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS "/100ft	CLOSURE DIST ft	CLOSURE DIR deg
875.00	1.70	39.88	874.82	-13.64	13.71	6.30	0.25	15.09	24.68
900.00	1.61	38.14	899.81	-14.20	14.27	6.75	0.43	15.79	25.33
925.00	1.61	41.09	924.80	-14.73	14.81	7.20	0.33	16.47	25.93
950.00	1.57	38.35	949.79	-15.26	15.34	7.64	0.34	17.14	26.49
975.00	1.57	38.72	974.78	-15.79	15.88	8.07	0.04	17.81	26.95
1000.00	1.61	39.40	999.77	-16.33	16.42	8.51	0.17	18.49	27.40
1025.00	1.58	38.30	1024.76	-16.86	16.96	8.94	0.17	19.17	27.81
1050.00	1.48	35.66	1049.75	-17.39	17.49	9.35	0.48	19.83	28.12
1075.00	1.46	37.77	1074.75	-17.90	18.00	9.73	0.24	20.46	28.39
1100.00	1.38	36.13	1099.74	-18.39	18.50	10.10	0.33	21.08	28.64
1125.00	1.42	37.61	1124.73	-18.88	18.99	10.47	0.21	21.68	28.87
1150.00	1.33	36.96	1149.72	-19.35	19.46	10.83	0.37	22.27	29.09
1175.00	1.28	34.45	1174.72	-19.81	19.93	11.16	0.30	22.84	29.26
1200.00	1.12	30.40	1199.71	-20.25	20.37	11.44	0.74	23.36	29.33
1225.00	1.14	31.46	1224.71	-20.67	20.79	11.70	0.13	23.85	29.37
1250.00	1.21	31.85	1249.70	-21.10	21.23	11.97	0.28	24.37	29.41
1275.00	1.25	33.49	1274.70	-21.55	21.68	12.26	0.20	24.90	29.48
1300.00	1.02	28.32	1299.69	-21.97	22.10	12.51	1.00	25.39	29.52
1325.00	1.01	31.28	1324.69	-22.35	22.48	12.73	0.21	25.84	29.52
1350.00	1.05	33.03	1349.68	-22.73	22.86	12.97	0.19	26.28	29.57
1375.00	0.97	22.80	1374.68	-23.11	23.25	13.18	0.78	26.72	29.54
1400.00	0.95	28.20	1399.68	-23.49	23.63	13.36	0.37	27.14	29.48
1425.00	0.84	22.87	1424.67	-23.84	23.98	13.53	0.55	27.53	29.43
1450.00	0.73	20.52	1449.67	-24.15	24.30	13.65	0.47	27.87	29.33
1475.00	0.73	11.74	1474.67	-24.46	24.60	13.74	0.45	28.18	29.19
1500.00	0.75	12.02	1499.67	-24.78	24.92	13.81	0.07	28.49	28.99
1525.00	0.80	21.17	1524.66	-25.10	25.24	13.90	0.52	28.82	28.85
1550.00	0.76	18.26	1549.66	-25.42	25.56	14.02	0.21	29.15	28.74
1575.00	0.75	12.52	1574.66	-25.73	25.88	14.11	0.31	29.48	28.59
1600.00	0.72	10.22	1599.66	-26.05	26.20	14.17	0.17	29.78	28.41
1625.00	0.77	16.69	1624.66	-26.37	26.51	14.25	0.39	30.10	28.25
1650.00	0.78	16.05	1649.65	-26.69	26.84	14.34	0.05	30.43	28.12

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS "/100ft	CLOSURE DIST ft	CLOSURE DIR deg
1675.00	0.85	17.77	1674.65	-27.03	27.18	14.45	0.27	30.78	27.99
1700.00	0.87	16.18	1699.65	-27.39	27.54	14.56	0.13	31.15	27.86
1725.00	0.97	24.46	1724.64	-27.76	27.91	14.70	0.65	31.54	27.77
1750.00	0.96	27.78	1749.64	-28.13	28.29	14.88	0.22	31.96	27.75
1775.00	1.20	48.27	1774.64	-28.49	28.65	15.17	1.80	32.42	27.91
1800.00	1.23	61.17	1799.63	-28.79	28.95	15.60	1.10	32.89	28.32
1825.00	1.31	81.70	1824.62	-28.95	29.12	16.12	1.84	33.29	28.97
1850.00	1.54	87.38	1849.62	-29.00	29.18	16.74	1.10	33.64	29.85
1875.00	1.75	95.44	1874.61	-28.98	29.16	17.46	1.23	33.98	30.91
1900.00	1.74	96.12	1899.60	-28.89	29.08	18.21	0.08	34.31	32.06
1925.00	1.72	97.33	1924.58	-28.80	28.99	18.96	0.18	34.64	33.19
1950.00	1.77	97.38	1949.57	-28.69	28.90	19.72	0.21	34.98	34.31
1975.00	1.61	96.19	1974.56	-28.60	28.81	20.45	0.65	35.33	35.37
2000.00	1.56	93.15	1999.55	-28.53	28.75	21.14	0.40	35.69	36.32
2025.00	1.52	94.98	2024.54	-28.48	28.70	21.81	0.25	36.05	37.22
2050.00	1.55	94.50	2049.53	-28.42	28.65	22.47	0.12	36.41	38.11
2075.00	1.81	91.91	2074.52	-28.37	28.61	23.21	1.11	36.84	39.05
2100.00	1.97	91.69	2099.51	-28.33	28.58	24.03	0.64	37.34	40.05
2125.00	2.05	92.25	2124.49	-28.30	28.55	24.91	0.33	37.89	41.10
2150.00	1.97	91.91	2149.48	-28.25	28.52	25.79	0.32	38.45	42.12
2175.00	1.83	90.19	2174.46	-28.23	28.51	26.61	0.63	39.00	43.04
2200.00	1.72	90.26	2199.45	-28.22	28.50	27.39	0.43	39.53	43.86
2225.00	1.51	90.76	2224.44	-28.21	28.50	28.09	0.83	40.02	44.59
2250.00	1.43	89.51	2249.43	-28.20	28.49	28.73	0.35	40.47	45.24
2275.00	1.05	83.97	2274.43	-28.22	28.52	29.27	1.58	40.87	45.75
2300.00	0.98	84.14	2299.43	-28.26	28.57	29.71	0.30	41.22	46.13
2325.00	0.82	86.10	2324.42	-28.29	28.60	30.11	0.64	41.53	46.47
2350.00	0.93	89.19	2349.42	-28.30	28.62	30.49	0.48	41.81	46.81
2375.00	0.83	94.34	2374.42	-28.29	28.61	30.87	0.51	42.09	47.18
2400.00	0.78	96.66	2399.41	-28.25	28.57	31.22	0.25	42.32	47.54
2425.00	0.76	100.86	2424.41	-28.20	28.52	31.55	0.24	42.53	47.89
2450.00	0.70	104.79	2449.41	-28.12	28.45	31.86	0.32	42.72	48.24

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS "/100ft	CLOSURE DIST ft	CLOSURE DIR deg
2475.00	0.68	112.52	2474.41	-28.02	28.36	32.14	0.38	42.86	48.58
2500.00	0.72	109.35	2499.41	-27.91	28.25	32.43	0.21	43.01	48.94
2525.00	0.73	118.22	2524.40	-27.78	28.12	32.72	0.45	43.14	49.32
2550.00	0.72	120.25	2549.40	-27.62	27.96	32.99	0.11	43.25	49.72
2575.00	0.78	114.66	2574.40	-27.47	27.81	33.29	0.38	43.38	50.12
2600.00	0.74	117.32	2599.40	-27.32	27.67	33.59	0.22	43.51	50.52
2625.00	0.73	111.59	2624.40	-27.19	27.54	33.88	0.30	43.66	50.90
2650.00	0.69	121.96	2649.39	-27.04	27.40	34.15	0.54	43.78	51.26
2675.00	0.70	124.56	2674.39	-26.88	27.23	34.41	0.14	43.88	51.64
2700.00	0.71	140.87	2699.39	-26.67	27.02	34.63	0.80	43.93	52.03
2725.00	0.80	169.03	2724.39	-26.37	26.73	34.76	1.50	43.85	52.44
2750.00	1.41	188.64	2749.38	-25.90	26.26	34.75	2.83	43.55	52.92
2775.00	1.70	205.75	2774.37	-25.27	25.62	34.54	2.18	43.01	53.43
2800.00	1.91	208.38	2799.36	-24.57	24.92	34.18	0.90	42.30	53.90
2825.00	1.89	207.08	2824.35	-23.84	24.19	33.80	0.18	41.56	54.41
2850.00	1.93	206.91	2849.33	-23.10	23.45	33.42	0.15	40.82	54.94
2875.00	1.93	207.04	2874.32	-22.36	22.70	33.04	0.02	40.08	55.51
2900.00	1.96	206.66	2899.31	-21.60	21.94	32.65	0.11	39.34	56.10
2925.00	2.04	209.58	2924.29	-20.84	21.17	32.24	0.52	38.57	56.71
2950.00	2.06	208.69	2949.27	-20.07	20.39	31.81	0.15	37.78	57.33
2975.00	2.14	211.35	2974.26	-19.28	19.60	31.35	0.51	36.97	57.98
3000.00	2.13	209.65	2999.24	-18.48	18.80	30.88	0.25	36.15	58.66
3025.00	2.25	211.40	3024.22	-17.66	17.98	30.39	0.53	35.31	59.39
3050.00	2.21	210.61	3049.20	-16.84	17.14	29.89	0.19	34.46	60.16
3075.00	2.29	210.45	3074.18	-15.99	16.30	29.39	0.31	33.61	60.99
3100.00	2.25	210.62	3099.16	-15.15	15.45	28.89	0.17	32.76	61.87
3125.00	2.30	210.62	3124.14	-14.30	14.59	28.38	0.22	31.91	62.79
3150.00	2.32	210.47	3149.12	-13.44	13.72	27.87	0.06	31.07	63.79
3175.00	2.37	209.04	3174.10	-12.55	12.84	27.36	0.30	30.22	64.87
3200.00	2.40	208.61	3199.08	-11.65	11.92	26.86	0.15	29.39	66.06
3225.00	2.45	208.74	3224.06	-10.73	11.00	26.36	0.19	28.56	67.35
3250.00	2.48	208.61	3249.04	-9.79	10.06	25.84	0.14	27.73	68.74

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS %/100ft	CLOSURE DIST ft	CLOSURE DIR deg
3275.00	2.50	208.83	3274.01	-8.84	9.10	25.32	0.10	26.90	70.23
3300.00	2.46	207.50	3298.99	-7.89	8.15	24.81	0.29	26.11	71.82
3325.00	2.52	208.59	3323.97	-6.94	7.19	24.30	0.32	25.34	73.52
3350.00	2.48	208.64	3348.94	-5.99	6.23	23.77	0.17	24.58	75.31
3375.00	2.56	209.47	3373.92	-5.03	5.27	23.24	0.33	23.83	77.22
3400.00	2.56	210.52	3398.89	-4.07	4.30	22.68	0.19	23.09	79.25
3425.00	2.43	208.28	3423.87	-3.13	3.36	22.15	0.64	22.40	81.38
3450.00	2.46	209.50	3448.85	-2.20	2.42	21.63	0.24	21.77	83.61
3475.00	2.48	209.10	3473.82	-1.27	1.48	21.11	0.09	21.16	85.98
3500.00	2.50	210.34	3498.80	-0.33	0.54	20.57	0.24	20.57	88.49
3525.00	2.49	209.29	3523.78	0.61	-0.40	20.03	0.19	20.03	91.15
3550.00	2.48	209.00	3548.75	1.55	-1.35	19.50	0.05	19.54	93.96
3575.00	2.44	207.88	3573.73	2.49	-2.29	18.99	0.26	19.12	96.89
3600.00	2.38	209.50	3598.71	3.41	-3.22	18.48	0.36	18.76	99.87
3625.00	2.22	208.24	3623.69	4.28	-4.10	18.00	0.69	18.46	102.82
3650.00	1.96	202.92	3648.67	5.10	-4.92	17.60	1.29	18.27	105.60
3675.00	1.77	198.07	3673.66	5.85	-5.68	17.31	0.98	18.22	108.15
3700.00	1.58	192.62	3698.65	6.56	-6.38	17.12	1.00	18.27	110.44
3725.00	1.28	182.60	3723.64	7.17	-7.00	17.03	1.56	18.41	112.33
3750.00	1.19	182.10	3748.63	7.71	-7.54	17.01	0.36	18.60	113.89
3775.00	1.23	182.16	3773.63	8.24	-8.06	16.99	0.15	18.81	115.39
3800.00	1.21	180.93	3798.62	8.77	-8.60	16.98	0.12	19.03	116.85
3825.00	1.18	174.79	3823.62	9.29	-9.12	16.99	0.53	19.28	118.21
3850.00	1.24	178.14	3848.61	9.82	-9.64	17.03	0.38	19.57	119.52
3875.00	1.22	179.45	3873.60	10.35	-10.18	17.04	0.13	19.85	120.85
3900.00	1.21	175.69	3898.60	10.88	-10.71	17.06	0.32	20.14	122.12
3925.00	1.17	178.53	3923.59	11.40	-11.23	17.09	0.28	20.44	123.31
3950.00	1.23	178.28	3948.59	11.93	-11.75	17.10	0.24	20.75	124.49
3975.00	1.22	177.36	3973.58	12.46	-12.28	17.12	0.09	21.07	125.66
4000.00	1.24	176.86	3998.58	13.00	-12.82	17.15	0.07	21.41	126.78
4025.00	1.25	179.33	4023.57	13.54	-13.36	17.17	0.22	21.75	127.89
4050.00	1.25	176.81	4048.56	14.08	-13.91	17.18	0.22	22.11	128.98

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS */100ft	CLOSURE DIST ft	CLOSURE DIR deg
4075.00	1.30	180.12	4073.56	14.64	-14.46	17.20	0.35	22.47	130.06
4100.00	1.26	178.30	4098.55	15.20	-15.02	17.21	0.22	22.84	131.12
4125.00	1.31	176.49	4123.55	15.76	-15.58	17.23	0.26	23.23	132.12
4150.00	1.33	173.25	4148.54	16.33	-16.15	17.28	0.31	23.66	133.07
4175.00	1.31	177.08	4173.53	16.90	-16.73	17.33	0.37	24.09	133.98
4200.00	1.37	175.93	4198.53	17.49	-17.31	17.37	0.28	24.52	134.90
4225.00	1.37	175.91	4223.52	18.09	-17.91	17.41	0.02	24.98	135.80
4250.00	1.35	174.69	4248.51	18.68	-18.50	17.46	0.13	25.44	136.65
4275.00	1.38	177.18	4273.50	19.27	-19.09	17.50	0.26	25.90	137.49
4300.00	1.40	173.51	4298.50	19.87	-19.69	17.55	0.37	26.38	138.29
4325.00	1.39	173.00	4323.49	20.48	-20.30	17.62	0.06	26.88	139.04
4350.00	1.40	179.49	4348.48	21.09	-20.91	17.66	0.63	27.37	139.81
4375.00	1.39	173.39	4373.47	21.70	-21.52	17.70	0.60	27.86	140.56
4400.00	1.29	173.92	4398.47	22.28	-22.10	17.76	0.42	28.35	141.20
4425.00	0.91	158.00	4423.46	22.74	-22.56	17.87	1.92	28.78	141.62
4450.00	0.72	120.33	4448.46	23.01	-22.82	18.08	2.23	29.12	141.61
4475.00	0.68	91.84	4473.46	23.09	-22.91	18.36	1.39	29.36	141.28
4500.00	0.81	83.34	4498.46	23.08	-22.89	18.69	0.68	29.55	140.77
4525.00	0.91	80.36	4523.45	23.03	-22.84	19.06	0.43	29.75	140.15
4550.00	0.76	79.40	4548.45	22.97	-22.77	19.42	0.59	29.93	139.55
4575.00	0.85	81.62	4573.45	22.92	-22.72	19.76	0.39	30.11	138.97
4600.00	0.73	86.02	4598.45	22.88	-22.68	20.11	0.54	30.31	138.44
4625.00	0.74	79.24	4623.44	22.85	-22.64	20.43	0.35	30.49	137.94
4650.00	0.74	85.63	4648.44	22.81	-22.59	20.75	0.33	30.67	137.44
4675.00	0.57	83.96	4673.44	22.78	-22.57	21.03	0.70	30.85	137.02
4700.00	0.58	91.29	4698.44	22.78	-22.56	21.28	0.29	31.01	136.67
4725.00	0.49	99.64	4723.44	22.80	-22.58	21.51	0.47	31.19	136.39
4750.00	0.49	104.03	4748.44	22.85	-22.62	21.72	0.15	31.36	136.16
4775.00	0.41	112.06	4773.44	22.91	-22.68	21.91	0.41	31.53	136.00
4800.00	0.29	165.25	4798.44	23.00	-22.78	22.01	1.32	31.67	135.99
4825.00	0.37	166.21	4823.44	23.14	-22.92	22.04	0.32	31.80	136.12
4850.00	0.38	155.13	4848.44	23.30	-23.07	22.09	0.29	31.94	136.24

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS "/100ft	CLOSURE DIST ft	CLOSURE DIR deg
4875.00	0.55	194.11	4873.43	23.49	-23.26	22.10	1.38	32.09	136.47
4900.00	0.58	194.87	4898.43	23.72	-23.50	22.04	0.14	32.22	136.84
4925.00	0.61	201.73	4923.43	23.97	-23.74	21.96	0.31	32.34	137.24
4950.00	0.72	207.00	4948.43	24.23	-24.01	21.84	0.52	32.45	137.71
4975.00	0.68	203.87	4973.43	24.51	-24.29	21.70	0.23	32.57	138.21
5000.00	0.77	204.94	4998.43	24.80	-24.57	21.57	0.36	32.70	138.72
5025.00	0.93	209.68	5023.42	25.12	-24.90	21.40	0.70	32.84	139.33
5050.00	0.92	212.22	5048.42	25.47	-25.25	21.19	0.17	32.97	139.99
5075.00	1.11	220.49	5073.42	25.82	-25.60	20.93	0.94	33.07	140.74
5100.00	1.03	218.15	5098.41	26.18	-25.97	20.63	0.34	33.17	141.53
5125.00	1.05	217.79	5123.41	26.53	-26.32	20.35	0.06	33.27	142.29
5150.00	1.04	224.43	5148.40	26.87	-26.67	20.06	0.48	33.37	143.05
5175.00	1.04	245.35	5173.40	27.12	-26.92	19.69	1.51	33.35	143.82
5200.00	1.25	283.29	5198.40	27.15	-26.95	19.22	3.09	33.10	144.51
5225.00	1.48	293.65	5223.39	26.95	-26.76	18.66	1.35	32.62	145.12
5250.00	1.57	293.01	5248.38	26.68	-26.50	18.04	0.33	32.06	145.75
5275.00	1.63	292.76	5273.37	26.40	-26.23	17.40	0.27	31.47	146.43
5300.00	1.66	286.57	5298.36	26.16	-25.99	16.73	0.72	30.90	147.23
5325.00	1.61	292.43	5323.35	25.91	-25.75	16.05	0.69	30.34	148.06
5350.00	1.60	292.67	5348.34	25.64	-25.48	15.41	0.07	29.78	148.84
5375.00	1.61	293.79	5373.33	25.35	-25.20	14.76	0.13	29.21	149.64
5400.00	1.67	289.42	5398.32	25.08	-24.94	14.10	0.57	28.65	150.52
5425.00	1.65	289.96	5423.31	24.83	-24.70	13.42	0.11	28.10	151.49
5450.00	1.63	290.53	5448.30	24.58	-24.45	12.75	0.12	27.57	152.47
5475.00	1.59	287.17	5473.29	24.34	-24.22	12.08	0.40	27.07	153.49
5500.00	1.55	286.18	5498.28	24.14	-24.02	11.42	0.22	26.60	154.57
5525.00	1.54	282.85	5523.27	23.97	-23.86	10.77	0.36	26.18	155.70
5550.00	1.50	280.86	5548.26	23.82	-23.72	10.13	0.27	25.79	156.88
5575.00	1.53	279.23	5573.25	23.70	-23.60	9.48	0.23	25.44	158.13
5600.00	1.58	270.42	5598.24	23.64	-23.55	8.80	0.97	25.14	159.51
5625.00	1.50	264.96	5623.23	23.66	-23.57	8.13	0.66	24.94	160.97
5650.00	1.48	261.76	5648.23	23.73	-23.65	7.49	0.34	24.81	162.44

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS "/100ft	CLOSURE DIST ft	CLOSURE DIR deg
5675.00	1.42	258.39	5673.22	23.83	-23.76	6.86	0.43	24.73	163.89
5700.00	1.43	257.63	5698.21	23.95	-23.89	6.26	0.09	24.69	165.32
5725.00	1.53	251.66	5723.20	24.12	-24.06	5.64	0.74	24.71	166.82
5750.00	1.47	249.32	5748.19	24.33	-24.28	5.02	0.35	24.79	168.32
5775.00	1.49	249.27	5773.19	24.55	-24.50	4.42	0.07	24.90	169.78
5800.00	1.45	248.34	5798.18	24.77	-24.74	3.82	0.18	25.03	171.22
5825.00	1.53	249.86	5823.17	25.00	-24.97	3.21	0.37	25.17	172.67
5850.00	1.62	257.09	5848.16	25.19	-25.16	2.55	0.87	25.29	174.21
5875.00	1.72	260.01	5873.15	25.32	-25.31	1.84	0.52	25.37	175.84
5900.00	1.60	261.40	5898.14	25.43	-25.42	1.12	0.49	25.45	177.47
5925.00	1.33	267.56	5923.13	25.49	-25.49	0.49	1.25	25.49	178.90
5950.00	0.66	275.99	5948.13	25.48	-25.49	0.05	2.73	25.49	179.88
5975.00	0.52	285.04	5973.12	25.44	-25.44	-0.20	0.68	25.44	180.46
6000.00	0.34	280.37	5998.12	25.39	-25.40	-0.39	0.74	25.40	180.87
6025.00	0.29	277.72	6023.12	25.37	-25.38	-0.52	0.21	25.38	181.18
6050.00	0.36	264.03	6048.12	25.37	-25.38	-0.66	0.40	25.38	181.50
6075.00	0.39	251.52	6073.12	25.40	-25.41	-0.82	0.35	25.42	181.85
6100.00	0.37	233.22	6098.12	25.47	-25.49	-0.97	0.49	25.50	182.17
6125.00	0.52	226.21	6123.12	25.60	-25.61	-1.11	0.63	25.64	182.49
6150.00	0.55	210.38	6148.12	25.78	-25.79	-1.25	0.60	25.82	182.78
6175.00	0.60	206.35	6173.12	26.00	-26.01	-1.37	0.25	26.05	183.02
6200.00	0.67	213.35	6198.12	26.24	-26.25	-1.51	0.42	26.30	183.29
6225.00	0.83	211.07	6223.12	26.51	-26.53	-1.68	0.65	26.58	183.63
6250.00	0.49	144.68	6248.11	26.75	-26.77	-1.72	3.09	26.82	183.67
6275.00	0.77	210.94	6273.11	26.98	-27.00	-1.74	2.90	27.06	183.69
6300.00	0.90	217.18	6298.11	27.28	-27.30	-1.94	0.64	27.37	184.07
6325.00	1.34	230.01	6323.11	27.62	-27.64	-2.29	2.02	27.74	184.73
6350.00	1.70	230.07	6348.10	28.04	-28.07	-2.80	1.43	28.21	185.69
6375.00	1.98	224.45	6373.08	28.58	-28.62	-3.38	1.33	28.82	186.74
6400.00	2.13	220.17	6398.07	29.24	-29.28	-3.98	0.86	29.55	187.75
6425.00	2.40	213.47	6423.05	30.02	-30.07	-4.57	1.50	30.42	188.65
6450.00	2.51	211.24	6448.03	30.92	-30.97	-5.14	0.58	31.40	189.43

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS */100ft	CLOSURE DIST ft	CLOSURE DIR deg
6475.00	2.44	212.20	6473.00	31.83	-31.89	-5.71	0.33	32.40	190.15
6500.00	2.37	214.46	6497.98	32.70	-32.77	-6.29	0.47	33.36	190.86
6525.00	2.12	218.31	6522.96	33.48	-33.55	-6.86	1.17	34.25	191.56
6550.00	2.07	217.84	6547.94	34.19	-34.27	-7.43	0.19	35.07	192.23
6575.00	2.05	218.74	6572.93	34.89	-34.98	-7.98	0.16	35.88	192.86
6600.00	1.57	222.15	6597.92	35.49	-35.58	-8.49	1.96	36.58	193.42
6625.00	1.74	222.42	6622.91	36.02	-36.11	-8.98	0.68	37.21	193.96
6650.00	1.66	225.15	6647.89	36.55	-36.65	-9.49	0.45	37.86	194.52
6675.00	1.52	231.56	6672.88	37.00	-37.11	-10.01	0.92	38.43	195.09
6700.00	1.63	231.20	6697.88	37.43	-37.54	-10.54	0.44	38.99	195.69
6725.00	1.63	235.36	6722.87	37.84	-37.96	-11.11	0.47	39.55	196.31
6750.00	1.68	235.76	6747.85	38.25	-38.37	-11.71	0.18	40.12	196.97
6775.00	1.87	224.72	6772.84	38.74	-38.87	-12.30	1.57	40.76	197.56
6800.00	2.23	220.08	6797.83	39.39	-39.53	-12.90	1.58	41.58	198.07
6825.00	2.45	209.83	6822.81	40.22	-40.37	-13.48	1.89	42.56	198.46
6850.00	2.44	201.39	6847.78	41.18	-41.33	-13.94	1.44	43.61	198.64
6875.00	2.16	192.11	6872.76	42.13	-42.28	-14.23	1.88	44.61	198.60
6900.00	1.43	174.53	6897.75	42.90	-43.05	-14.30	3.61	45.37	198.37
6925.00	0.66	157.69	6922.75	43.35	-43.50	-14.22	3.30	45.76	198.10
6950.00	0.43	180.72	6947.75	43.57	-43.72	-14.16	1.23	45.96	197.95
6975.00	0.62	217.13	6972.74	43.78	-43.93	-14.25	1.50	46.18	197.97
7000.00	0.85	226.74	6997.74	44.01	-44.16	-14.46	1.04	46.47	198.13
7025.00	1.11	222.11	7022.74	44.31	-44.47	-14.76	1.09	46.85	198.36
7050.00	1.15	216.55	7047.73	44.69	-44.85	-15.07	0.46	47.31	198.58
7075.00	1.07	204.11	7072.73	45.10	-45.26	-15.32	1.01	47.78	198.70
7100.00	1.10	198.35	7097.72	45.54	-45.70	-15.49	0.45	48.26	198.72
7125.00	1.13	197.43	7122.72	46.00	-46.17	-15.64	0.15	48.74	198.71
7150.00	1.52	203.95	7147.71	46.54	-46.70	-15.85	1.65	49.32	198.74
7175.00	1.45	200.96	7172.70	47.13	-47.30	-16.09	0.41	49.96	198.79
7200.00	1.46	198.20	7197.70	47.73	-47.90	-16.30	0.28	50.60	198.80
7225.00	1.33	201.28	7222.69	48.30	-48.47	-16.51	0.59	51.21	198.81
7250.00	1.37	196.57	7247.68	48.85	-49.03	-16.70	0.47	51.79	198.81

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	1.36	197.87	7272.68	49.42	-49.60	-16.88	0.13	52.39	198.79
7300.00	1.41	196.36	7297.67	49.99	-50.17	-17.05	0.25	52.99	198.77
7325.00	1.65	199.08	7322.66	50.62	-50.81	-17.26	1.00	53.66	198.76
7350.00	1.64	204.45	7347.65	51.29	-51.47	-17.52	0.61	54.37	198.80
7375.00	1.54	209.64	7372.64	51.90	-52.09	-17.84	0.70	55.06	198.90
7400.00	1.71	215.12	7397.63	52.49	-52.69	-18.22	0.90	55.75	199.07
7425.00	1.76	225.37	7422.62	53.06	-53.26	-18.70	1.26	56.45	199.35
7450.00	1.77	229.23	7447.61	53.58	-53.78	-19.27	0.48	57.13	199.71
7475.00	1.81	238.44	7472.59	54.03	-54.24	-19.90	1.16	57.77	200.15
7500.00	1.82	244.75	7497.58	54.40	-54.61	-20.59	0.80	58.37	200.66
7512.00	1.95	246.31	7509.57	54.56	-54.78	-20.95	1.20	58.65	200.93