COG

SURVEY REPORT

GERONIMO FEDERAL COM 11H NORAM 21 2/12/2017

Scientific Drilling

The **Ultimate Partner** In Wellbore Placement

SURVEY REPORT

GERONIMO FEDERAL COM 11H DEFINITIVE GYRO SURVEY

CUSTOMER	COG	SDI JOB NO.	417451
PROJECT	Geronimo Federal Com 11H	SDI DISTRICT	Midland
FIELD	Geronimo Federal Com 11H	SDI KIT/UNIT	

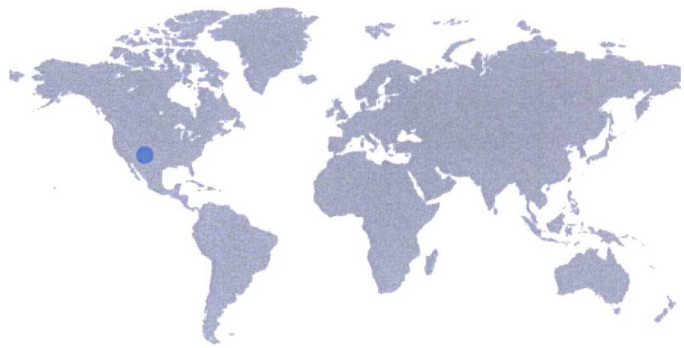
HOBBS OCD
JUN 29 2017
RECEIVED

SITE INFORMATION

Site Name	Geronimo Federal Com 11H	Section	
Lat/Long	32.6401619° N, 103.7093156° W	Township	
Northing	597,166.4 ft	Range	
Easting	692,087.8 ft		

MAP INFORMATION

North Reference	Grid North
Grid Correction	-0.34 deg
System	US State Plane 1927
Datum	North American Datum 1927 (Clarke 1866)
Map Zone	New Mexico East: 3001



WELL INFORMATION

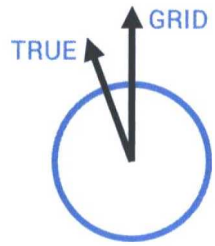
Lat/Long	32.6401619° N, 103.7093156° W
Northing	597,166.4 ft
Easting	692,087.8 ft
UWI	30-025-43503

DEPTH AND ELEVATION REFERENCE

Ground Level	3600 ft above Mean Sea Level
Reference Datum	KB
Reference Height	29 ft above G.L.
Reference Elevation	3629 ft

VERTICAL SECTION REFERENCE

+N/-S	0 ft
+E/-W	0 ft
Proposal Direction	180.04°
Calculation Method	Minimum Curvature



LOCAL GRAVITY REFERENCE INFORMATION

Local Gravity	998.516 mG [computed]
True to Grid	subtract 0.34°

WELL NOTES

Wireline Gyro Survey
4 1/2 Drill Pipe

OPERATORS

C. Booher

SDI Operator Name (Printed) SIGNATURE DATE

© 2017 Scientific Drilling International

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DIST ft	CLOSURE DIR deg
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid	0.00	0.00
100.00	0.53	56.30	100.00	-0.26	0.26	0.38	0.53	0.46	56.30
125.00	0.50	63.09	125.00	-0.37	0.37	0.58	0.26	0.69	57.39
150.00	0.49	49.61	150.00	-0.49	0.49	0.76	0.47	0.90	57.16
175.00	0.50	52.07	175.00	-0.63	0.63	0.93	0.09	1.12	55.94
200.00	0.52	46.61	199.99	-0.77	0.77	1.09	0.22	1.34	54.84
225.00	0.51	42.27	224.99	-0.93	0.93	1.25	0.16	1.56	53.35
250.00	0.51	45.94	249.99	-1.09	1.09	1.41	0.13	1.78	52.20
275.00	0.53	44.29	274.99	-1.25	1.25	1.57	0.10	2.00	51.40
300.00	0.50	50.20	299.99	-1.40	1.40	1.73	0.24	2.23	50.98
325.00	0.47	51.78	324.99	-1.54	1.53	1.89	0.14	2.44	50.97
350.00	0.57	37.96	349.99	-1.70	1.70	2.05	0.66	2.66	50.40
375.00	0.49	40.07	374.99	-1.88	1.88	2.20	0.33	2.89	49.48
400.00	0.37	54.58	399.99	-2.01	2.01	2.33	0.65	3.08	49.28
425.00	0.41	51.59	424.99	-2.11	2.11	2.47	0.19	3.25	49.48
450.00	0.42	51.21	449.99	-2.23	2.22	2.61	0.03	3.43	49.58
475.00	0.43	50.28	474.99	-2.34	2.34	2.75	0.03	3.61	49.64
500.00	0.32	64.29	499.98	-2.43	2.43	2.89	0.56	3.77	49.92
525.00	0.31	69.56	524.98	-2.49	2.48	3.01	0.12	3.91	50.51
550.00	0.29	77.26	549.98	-2.52	2.52	3.14	0.18	4.03	51.23
575.00	0.30	80.70	574.98	-2.55	2.55	3.27	0.07	4.14	52.06
600.00	0.24	84.32	599.98	-2.56	2.56	3.38	0.25	4.24	52.85
625.00	0.31	85.90	624.98	-2.57	2.57	3.50	0.31	4.34	53.71
650.00	0.28	88.85	649.98	-2.58	2.58	3.63	0.16	4.45	54.62
675.00	0.28	84.81	674.98	-2.59	2.58	3.75	0.08	4.55	55.43
700.00	0.27	78.15	699.98	-2.60	2.60	3.87	0.13	4.66	56.07
725.00	0.30	80.85	724.98	-2.63	2.62	3.99	0.15	4.77	56.66
750.00	0.31	83.08	749.98	-2.65	2.64	4.12	0.06	4.90	57.33
775.00	0.31	88.80	774.98	-2.66	2.65	4.26	0.12	5.01	58.07
800.00	0.26	95.37	799.98	-2.65	2.65	4.38	0.24	5.12	58.84
825.00	0.22	99.16	824.98	-2.64	2.64	4.48	0.17	5.20	59.55
850.00	0.14	82.21	849.98	-2.63	2.63	4.56	0.39	5.27	60.01

© 2017 Scientific Drilling International

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	0.10	91.28	874.98	-2.64	2.64	4.61	0.17	5.31	60.26
900.00	0.11	103.93	899.98	-2.63	2.63	4.66	0.11	5.35	60.55
925.00	0.01	217.92	924.98	-2.62	2.62	4.68	0.46	5.36	60.74
950.00	0.10	335.05	949.98	-2.64	2.64	4.67	0.42	5.36	60.51
975.00	0.22	347.84	974.98	-2.71	2.71	4.65	0.47	5.38	59.79
1000.00	0.19	344.32	999.98	-2.80	2.79	4.63	0.12	5.41	58.90
1025.00	0.16	346.36	1024.98	-2.87	2.87	4.61	0.10	5.43	58.11
1050.00	0.20	332.67	1049.98	-2.94	2.94	4.58	0.21	5.44	57.30
1075.00	0.25	332.51	1074.98	-3.03	3.03	4.54	0.22	5.45	56.28
1100.00	0.34	347.56	1099.98	-3.15	3.15	4.49	0.48	5.49	54.98
1125.00	0.28	348.19	1124.98	-3.29	3.28	4.47	0.25	5.54	53.68
1150.00	0.24	339.35	1149.98	-3.40	3.39	4.43	0.22	5.58	52.58
1175.00	0.18	336.24	1174.98	-3.48	3.48	4.40	0.26	5.61	51.66
1200.00	0.32	344.68	1199.98	-3.58	3.58	4.37	0.56	5.65	50.63
1225.00	0.23	347.03	1224.98	-3.70	3.70	4.34	0.33	5.70	49.54
1250.00	0.30	351.63	1249.98	-3.82	3.81	4.31	0.29	5.76	48.52
1275.00	0.32	344.15	1274.98	-3.95	3.95	4.29	0.17	5.83	47.37
1300.00	0.35	343.71	1299.98	-4.09	4.09	4.25	0.15	5.89	46.09
1325.00	0.35	344.50	1324.98	-4.24	4.23	4.20	0.03	5.97	44.79
1350.00	0.20	0.49	1349.98	-4.35	4.35	4.18	0.65	6.04	43.87
1375.00	0.09	334.38	1374.98	-4.42	4.41	4.18	0.53	6.08	43.41
1400.00	0.07	7.82	1399.98	-4.45	4.45	4.17	0.19	6.09	43.16
1425.00	0.09	195.06	1424.98	-4.44	4.44	4.17	0.62	6.09	43.17
1450.00	0.06	304.33	1449.98	-4.43	4.43	4.15	0.47	6.07	43.14
1475.00	0.18	172.84	1474.98	-4.40	4.40	4.15	0.88	6.04	43.31
1500.00	0.30	182.90	1499.98	-4.30	4.30	4.15	0.50	5.97	44.00
1525.00	0.07	181.10	1524.98	-4.22	4.22	4.14	0.92	5.91	44.51
1550.00	0.28	186.58	1549.98	-4.14	4.14	4.14	0.87	5.85	44.98
1575.00	0.16	208.73	1574.98	-4.05	4.05	4.11	0.58	5.77	45.47
1600.00	0.13	230.20	1599.98	-4.00	4.00	4.07	0.26	5.71	45.55
1625.00	0.27	185.78	1624.97	-3.92	3.92	4.04	0.80	5.63	45.91
1650.00	0.22	193.90	1649.97	-3.82	3.81	4.03	0.25	5.55	46.56

© 2017 Scientific Drilling International

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	0.25	197.34	1674.97	-3.72	3.71	4.00	0.15	5.46	47.12
1700.00	0.20	198.79	1699.97	-3.62	3.62	3.97	0.24	5.37	47.63
1725.00	0.16	249.87	1724.97	-3.57	3.57	3.92	0.63	5.30	47.70
1750.00	0.30	187.84	1749.97	-3.49	3.49	3.88	1.07	5.22	48.02
1775.00	0.18	207.02	1774.97	-3.39	3.39	3.85	0.58	5.13	48.65
1800.00	0.28	203.68	1799.97	-3.30	3.30	3.81	0.42	5.04	49.11
1825.00	0.32	189.60	1824.97	-3.18	3.18	3.77	0.32	4.93	49.93
1850.00	0.12	252.19	1849.97	-3.10	3.10	3.74	1.13	4.86	50.34
1875.00	0.27	194.23	1874.97	-3.04	3.03	3.70	0.93	4.78	50.65
1900.00	0.21	195.52	1899.97	-2.93	2.93	3.67	0.25	4.70	51.40
1925.00	0.06	166.28	1924.97	-2.88	2.87	3.66	0.64	4.66	51.88
1950.00	0.07	161.46	1949.97	-2.85	2.85	3.67	0.03	4.65	52.21
1975.00	0.05	213.71	1974.97	-2.83	2.82	3.67	0.21	4.63	52.42
2000.00	0.04	330.20	1999.97	-2.83	2.82	3.66	0.29	4.62	52.36
2025.00	0.10	135.49	2024.97	-2.82	2.81	3.67	0.57	4.63	52.53
2050.00	0.18	17.41	2049.97	-2.84	2.84	3.70	1.00	4.66	52.53
2075.00	0.07	67.10	2074.97	-2.88	2.88	3.73	0.59	4.71	52.30
2100.00	0.12	57.49	2099.97	-2.90	2.90	3.76	0.21	4.75	52.37
2125.00	0.13	45.24	2124.97	-2.94	2.94	3.81	0.12	4.81	52.36
2150.00	0.17	64.54	2149.97	-2.98	2.97	3.86	0.25	4.87	52.41
2175.00	0.34	45.37	2174.97	-3.04	3.04	3.95	0.74	4.98	52.39
2200.00	0.42	38.45	2199.97	-3.17	3.16	4.06	0.38	5.15	52.05
2225.00	0.45	27.95	2224.97	-3.33	3.32	4.16	0.34	5.32	51.38
2250.00	0.51	41.64	2249.97	-3.50	3.49	4.28	0.52	5.52	50.79
2275.00	0.55	33.89	2274.97	-3.68	3.68	4.42	0.32	5.75	50.26
2300.00	0.47	38.95	2299.97	-3.86	3.85	4.55	0.37	5.96	49.75
2325.00	0.45	40.19	2324.97	-4.01	4.01	4.68	0.08	6.16	49.42
2350.00	0.49	47.21	2349.97	-4.16	4.15	4.82	0.28	6.36	49.24
2375.00	0.59	43.08	2374.97	-4.32	4.32	4.99	0.45	6.60	49.09
2400.00	0.72	42.72	2399.96	-4.54	4.53	5.18	0.52	6.88	48.83
2425.00	0.75	42.92	2424.96	-4.77	4.77	5.40	0.10	7.20	48.56
2450.00	0.83	45.96	2449.96	-5.02	5.01	5.64	0.38	7.55	48.38

© 2017 Scientific Drilling International

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	0.83	48.95	2474.96	-5.26	5.26	5.91	0.17	7.91	48.34
2500.00	0.93	49.34	2499.95	-5.52	5.51	6.20	0.40	8.30	48.37
2525.00	1.01	49.92	2524.95	-5.79	5.79	6.52	0.33	8.72	48.44
2550.00	1.01	59.06	2549.95	-6.05	6.04	6.88	0.64	9.16	48.72
2575.00	1.04	61.95	2574.94	-6.27	6.26	7.27	0.25	9.60	49.27
2600.00	1.10	58.55	2599.94	-6.50	6.49	7.68	0.35	10.06	49.78
2625.00	1.15	58.56	2624.93	-6.76	6.75	8.10	0.20	10.54	50.19
2650.00	1.10	58.59	2649.93	-7.01	7.01	8.52	0.23	11.03	50.56
2675.00	1.13	58.83	2674.92	-7.26	7.26	8.93	0.14	11.51	50.90
2700.00	1.14	59.14	2699.92	-7.52	7.51	9.36	0.06	12.00	51.23
2725.00	0.93	59.20	2724.91	-7.75	7.75	9.75	0.84	12.45	51.52
2750.00	0.55	59.07	2749.91	-7.92	7.91	10.02	1.52	12.77	51.71
2775.00	0.25	60.22	2774.91	-8.01	8.00	10.18	1.19	12.94	51.82
2800.00	0.05	77.09	2799.91	-8.04	8.03	10.23	0.82	13.01	51.88
2825.00	0.03	329.99	2824.91	-8.05	8.04	10.24	0.28	13.02	51.87
2850.00	0.11	322.64	2849.91	-8.07	8.07	10.22	0.31	13.02	51.73
2875.00	0.11	352.96	2874.91	-8.12	8.11	10.21	0.23	13.04	51.53
2900.00	0.09	331.76	2899.91	-8.16	8.15	10.19	0.16	13.05	51.36
2925.00	0.06	326.75	2924.91	-8.19	8.18	10.18	0.13	13.06	51.21
2950.00	0.08	15.46	2949.91	-8.21	8.21	10.17	0.24	13.07	51.11
2975.00	0.07	351.94	2974.91	-8.25	8.24	10.18	0.12	13.09	51.01
3000.00	0.18	318.04	2999.91	-8.29	8.28	10.15	0.52	13.10	50.78
3025.00	0.20	347.16	3024.91	-8.36	8.35	10.11	0.39	13.12	50.44
3050.00	0.22	344.07	3049.91	-8.45	8.44	10.09	0.10	13.16	50.07
3075.00	0.13	334.46	3074.91	-8.52	8.52	10.06	0.37	13.18	49.76
3100.00	0.12	338.91	3099.91	-8.57	8.57	10.04	0.07	13.20	49.53
3125.00	0.25	343.47	3124.91	-8.65	8.64	10.02	0.51	13.23	49.21
3150.00	0.26	342.06	3149.91	-8.76	8.75	9.98	0.08	13.27	48.77
3175.00	0.32	345.62	3174.91	-8.88	8.87	9.95	0.22	13.33	48.28
3200.00	0.38	335.72	3199.91	-9.02	9.01	9.90	0.35	13.39	47.68
3225.00	0.23	323.68	3224.91	-9.14	9.13	9.83	0.63	13.42	47.12
3250.00	0.19	341.25	3249.91	-9.22	9.21	9.79	0.32	13.44	46.75

© 2017 Scientific Drilling International

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	0.23	336.83	3274.91	-9.30	9.29	9.76	0.17	13.48	46.39
3300.00	0.23	339.51	3299.91	-9.39	9.39	9.72	0.05	13.51	45.99
3325.00	0.37	329.02	3324.91	-9.51	9.50	9.66	0.56	13.55	45.47
3350.00	0.35	341.21	3349.91	-9.65	9.65	9.59	0.31	13.60	44.85
3375.00	0.38	334.11	3374.91	-9.80	9.79	9.53	0.21	13.67	44.24
3400.00	0.49	332.56	3399.91	-9.97	9.96	9.45	0.46	13.73	43.49
3425.00	0.44	330.01	3424.91	-10.14	10.14	9.35	0.23	13.79	42.69
3450.00	0.53	331.13	3449.90	-10.33	10.32	9.25	0.39	13.86	41.86
3475.00	0.52	327.26	3474.90	-10.53	10.52	9.13	0.16	13.93	40.96
3500.00	0.55	332.22	3499.90	-10.73	10.72	9.01	0.22	14.01	40.07
3525.00	0.59	334.43	3524.90	-10.95	10.94	8.90	0.19	14.11	39.14
3550.00	0.57	335.20	3549.90	-11.18	11.17	8.80	0.07	14.22	38.22
3575.00	0.60	344.78	3574.90	-11.41	11.41	8.71	0.40	14.35	37.36
3600.00	0.68	2.97	3599.90	-11.69	11.68	8.68	0.87	14.55	36.62
3625.00	0.83	7.25	3624.90	-12.01	12.01	8.71	0.65	14.84	35.97
3650.00	0.86	12.97	3649.89	-12.38	12.37	8.78	0.37	15.17	35.36
3675.00	1.00	14.22	3674.89	-12.77	12.77	8.87	0.54	15.55	34.80
3700.00	1.01	15.55	3699.89	-13.20	13.19	8.99	0.10	15.96	34.27
3725.00	1.07	16.51	3724.88	-13.63	13.62	9.11	0.27	16.39	33.77
3750.00	1.04	15.11	3749.88	-14.08	14.07	9.24	0.15	16.83	33.29
3775.00	1.06	14.35	3774.87	-14.52	14.51	9.35	0.08	17.27	32.80
3800.00	1.05	15.21	3799.87	-14.96	14.96	9.47	0.07	17.70	32.34
3825.00	1.12	4.79	3824.86	-15.43	15.42	9.55	0.84	18.14	31.77
3850.00	0.98	2.89	3849.86	-15.89	15.88	9.58	0.60	18.55	31.11
3875.00	0.99	3.84	3874.86	-16.31	16.31	9.61	0.07	18.93	30.51
3900.00	1.00	1.50	3899.85	-16.75	16.74	9.63	0.17	19.31	29.91
3925.00	1.00	0.15	3924.85	-17.18	17.18	9.64	0.10	19.69	29.29
3950.00	0.94	4.61	3949.84	-17.60	17.60	9.65	0.40	20.07	28.74
3975.00	1.01	357.77	3974.84	-18.03	18.02	9.66	0.55	20.45	28.19
4000.00	1.08	0.85	3999.84	-18.49	18.48	9.65	0.37	20.85	27.59
4025.00	0.99	0.90	4024.83	-18.94	18.93	9.66	0.38	21.25	27.04
4050.00	1.05	1.66	4049.83	-19.38	19.37	9.67	0.25	21.65	26.53

© 2017 Scientific Drilling International

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	0.99	1.43	4074.83	-19.82	19.82	9.68	0.24	22.06	26.04
4100.00	1.01	3.94	4099.82	-20.26	20.25	9.70	0.20	22.46	25.60
4125.00	1.03	0.61	4124.82	-20.70	20.70	9.72	0.24	22.87	25.16
4150.00	1.18	359.67	4149.81	-21.19	21.18	9.72	0.64	23.30	24.66
4175.00	1.11	1.48	4174.81	-21.69	21.68	9.73	0.31	23.76	24.17
4200.00	1.01	6.40	4199.80	-22.15	22.14	9.76	0.56	24.20	23.78
4225.00	0.97	7.72	4224.80	-22.58	22.57	9.81	0.15	24.61	23.50
4250.00	0.98	13.25	4249.80	-22.99	22.99	9.89	0.38	25.02	23.28
4275.00	0.98	10.28	4274.79	-23.41	23.41	9.98	0.20	25.44	23.08
4300.00	1.01	11.85	4299.79	-23.84	23.83	10.06	0.17	25.87	22.88
4325.00	1.11	6.37	4324.78	-24.30	24.29	10.13	0.56	26.32	22.64
4350.00	1.02	11.93	4349.78	-24.75	24.75	10.20	0.56	26.77	22.41
4375.00	1.01	12.00	4374.78	-25.19	25.18	10.30	0.02	27.20	22.24
4400.00	1.06	10.51	4399.77	-25.63	25.62	10.38	0.24	27.65	22.06
4425.00	1.18	7.23	4424.77	-26.11	26.11	10.46	0.54	28.12	21.83
4450.00	1.18	4.36	4449.76	-26.63	26.62	10.51	0.24	28.62	21.55
4475.00	1.21	9.32	4474.76	-27.15	27.14	10.57	0.43	29.13	21.29
4500.00	1.25	9.21	4499.75	-27.68	27.67	10.66	0.16	29.65	21.07
4525.00	1.33	6.63	4524.74	-28.23	28.23	10.74	0.39	30.20	20.83
4550.00	1.36	6.40	4549.74	-28.82	28.81	10.80	0.13	30.77	20.56
4575.00	1.28	8.05	4574.73	-29.39	29.38	10.88	0.35	31.33	20.31
4600.00	1.29	7.94	4599.72	-29.94	29.94	10.95	0.05	31.88	20.10
4625.00	1.23	3.97	4624.72	-30.49	30.48	11.01	0.45	32.41	19.86
4650.00	1.31	7.44	4649.71	-31.04	31.03	11.07	0.45	32.95	19.63
4675.00	1.31	10.93	4674.71	-31.61	31.60	11.16	0.32	33.51	19.45
4700.00	1.32	9.75	4699.70	-32.17	32.16	11.26	0.11	34.08	19.30
4725.00	1.30	6.37	4724.69	-32.74	32.73	11.34	0.32	34.64	19.11
4750.00	1.33	8.02	4749.69	-33.30	33.30	11.41	0.18	35.20	18.92
4775.00	1.25	12.88	4774.68	-33.86	33.85	11.51	0.52	35.75	18.79
4800.00	1.34	10.83	4799.67	-34.41	34.40	11.63	0.38	36.31	18.68
4825.00	1.30	13.94	4824.67	-34.97	34.96	11.75	0.32	36.89	18.58
4850.00	1.32	11.84	4849.66	-35.53	35.52	11.88	0.20	37.46	18.49

© 2017 Scientific Drilling International

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	1.26	9.23	4874.65	-36.08	36.07	11.98	0.32	38.01	18.38
4900.00	1.27	14.75	4899.65	-36.62	36.61	12.10	0.49	38.56	18.29
4925.00	1.37	11.18	4924.64	-37.18	37.17	12.23	0.53	39.13	18.21
4950.00	1.29	16.70	4949.63	-37.75	37.74	12.37	0.61	39.71	18.14
4975.00	1.21	16.10	4974.63	-38.27	38.26	12.52	0.31	40.26	18.12
5000.00	1.31	14.69	4999.62	-38.80	38.79	12.67	0.42	40.81	18.08
5025.00	1.26	16.21	5024.62	-39.34	39.33	12.82	0.23	41.37	18.05
5050.00	1.30	10.56	5049.61	-39.89	39.88	12.94	0.53	41.92	17.98
5075.00	1.30	10.54	5074.60	-40.44	40.44	13.05	0.01	42.49	17.88
5100.00	1.25	11.71	5099.60	-40.99	40.98	13.16	0.22	43.04	17.80
5125.00	1.28	11.63	5124.59	-41.53	41.52	13.27	0.11	43.59	17.72
5150.00	1.31	9.90	5149.58	-42.09	42.08	13.37	0.19	44.15	17.63
5175.00	1.13	14.66	5174.58	-42.61	42.60	13.48	0.83	44.68	17.57
5200.00	1.23	13.67	5199.57	-43.10	43.09	13.61	0.41	45.19	17.53
5225.00	1.26	11.64	5224.57	-43.63	43.62	13.73	0.22	45.73	17.47
5250.00	1.26	12.99	5249.56	-44.17	44.16	13.84	0.12	46.28	17.41
5275.00	1.23	12.10	5274.56	-44.70	44.69	13.96	0.13	46.82	17.35
5300.00	1.24	13.50	5299.55	-45.23	45.22	14.08	0.13	47.36	17.30
5325.00	1.24	12.98	5324.54	-45.75	45.74	14.21	0.05	47.90	17.25
5350.00	1.26	14.68	5349.54	-46.28	46.27	14.34	0.15	48.44	17.22
5375.00	1.26	18.01	5374.53	-46.81	46.80	14.49	0.29	48.99	17.21
5400.00	1.16	22.68	5399.53	-47.30	47.29	14.67	0.56	49.52	17.24
5425.00	1.17	24.02	5424.52	-47.77	47.76	14.88	0.13	50.02	17.30
5450.00	1.21	21.32	5449.52	-48.25	48.24	15.08	0.27	50.54	17.35
5475.00	1.14	23.53	5474.51	-48.72	48.71	15.27	0.35	51.05	17.41
5500.00	0.94	27.59	5499.51	-49.14	49.12	15.47	0.83	51.50	17.48
5525.00	0.99	21.01	5524.50	-49.52	49.51	15.64	0.49	51.92	17.53
5550.00	0.90	20.21	5549.50	-49.91	49.90	15.78	0.37	52.33	17.55
5575.00	0.79	24.23	5574.50	-50.25	50.24	15.92	0.50	52.70	17.59
5600.00	0.73	23.33	5599.49	-50.55	50.54	16.06	0.25	53.03	17.62
5625.00	0.54	32.00	5624.49	-50.80	50.79	16.18	0.84	53.30	17.67
5650.00	0.45	48.80	5649.49	-50.96	50.95	16.32	0.68	53.50	17.76

© 2017 Scientific Drilling International

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	0.40	49.51	5674.49	-51.09	51.07	16.46	0.22	53.66	17.86
5700.00	0.34	76.58	5699.49	-51.16	51.15	16.60	0.73	53.77	17.98
5725.00	0.35	65.03	5724.49	-51.21	51.20	16.74	0.28	53.86	18.10
5750.00	0.39	47.81	5749.49	-51.30	51.29	16.87	0.47	53.99	18.21
5775.00	0.34	46.09	5774.49	-51.41	51.39	16.99	0.19	54.13	18.29
5800.00	0.42	40.45	5799.49	-51.53	51.51	17.10	0.34	54.28	18.36
5825.00	0.43	49.38	5824.49	-51.66	51.64	17.23	0.27	54.44	18.45
5850.00	0.36	49.30	5849.49	-51.77	51.76	17.36	0.30	54.59	18.54
5875.00	0.31	33.06	5874.49	-51.88	51.86	17.45	0.41	54.72	18.60
5900.00	0.14	27.47	5899.49	-51.96	51.95	17.51	0.68	54.82	18.62
5925.00	0.13	357.38	5924.49	-52.02	52.00	17.52	0.29	54.88	18.62
5950.00	0.20	310.18	5949.49	-52.07	52.06	17.48	0.60	54.92	18.56
5975.00	0.19	317.57	5974.49	-52.13	52.12	17.42	0.11	54.95	18.48
6000.00	0.44	325.54	5999.49	-52.24	52.23	17.34	0.99	55.03	18.37
6025.00	0.45	337.65	6024.49	-52.41	52.40	17.25	0.38	55.16	18.22
6050.00	0.27	325.15	6049.49	-52.55	52.54	17.18	0.79	55.27	18.11
6075.00	0.33	329.03	6074.49	-52.66	52.65	17.11	0.26	55.36	18.00
6100.00	0.24	335.10	6099.48	-52.77	52.76	17.05	0.36	55.44	17.91
6125.00	0.24	339.27	6124.48	-52.86	52.85	17.01	0.08	55.52	17.84
6150.00	0.24	306.68	6149.48	-52.94	52.93	16.95	0.54	55.58	17.75
6175.00	0.33	291.94	6174.48	-53.00	52.99	16.84	0.47	55.60	17.63
6200.00	0.48	309.10	6199.48	-53.09	53.08	16.69	0.75	55.64	17.45
6225.00	0.35	293.47	6224.48	-53.19	53.18	16.54	0.68	55.69	17.27
6250.00	0.53	301.39	6249.48	-53.28	53.27	16.37	0.75	55.73	17.08
6275.00	0.37	304.52	6274.48	-53.39	53.38	16.20	0.63	55.78	16.89
6300.00	0.34	301.37	6299.48	-53.47	53.46	16.07	0.16	55.82	16.74
6325.00	0.36	293.31	6324.48	-53.54	53.53	15.94	0.22	55.85	16.58
6350.00	0.41	314.70	6349.48	-53.63	53.62	15.80	0.60	55.90	16.42
6375.00	0.51	300.67	6374.48	-53.75	53.74	15.64	0.62	55.97	16.23
6400.00	0.62	316.46	6399.48	-53.91	53.90	15.45	0.75	56.07	16.00
6425.00	0.64	313.13	6424.48	-54.10	54.09	15.26	0.17	56.20	15.75
6450.00	0.62	320.99	6449.47	-54.30	54.29	15.07	0.35	56.35	15.51

© 2017 Scientific Drilling International

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	0.61	319.15	6474.47	-54.51	54.50	14.90	0.10	56.50	15.29
6500.00	0.65	319.00	6499.47	-54.72	54.71	14.72	0.17	56.65	15.06
6525.00	0.80	325.69	6524.47	-54.97	54.96	14.53	0.70	56.85	14.81
6550.00	0.75	322.36	6549.47	-55.24	55.23	14.33	0.29	57.06	14.54
6575.00	0.67	325.21	6574.47	-55.49	55.48	14.15	0.32	57.26	14.30
6600.00	0.80	323.19	6599.46	-55.75	55.74	13.96	0.52	57.46	14.06
6625.00	0.82	329.82	6624.46	-56.04	56.04	13.76	0.38	57.70	13.80
6650.00	0.96	324.18	6649.46	-56.37	56.36	13.55	0.66	57.97	13.52
6675.00	0.89	321.92	6674.45	-56.69	56.68	13.31	0.33	58.22	13.21
6700.00	0.88	326.01	6699.45	-57.00	56.99	13.08	0.25	58.47	12.93
6725.00	0.90	329.70	6724.45	-57.33	57.32	12.88	0.25	58.75	12.66
6750.00	1.10	327.51	6749.44	-57.70	57.69	12.65	0.80	59.06	12.37
6775.00	1.17	326.79	6774.44	-58.12	58.11	12.38	0.27	59.41	12.03
6800.00	1.15	329.10	6799.43	-58.55	58.54	12.11	0.20	59.78	11.69
6825.00	1.07	329.45	6824.43	-58.96	58.95	11.87	0.34	60.13	11.38
6850.00	1.08	329.66	6849.43	-59.36	59.36	11.63	0.04	60.48	11.09
6875.00	1.13	329.30	6874.42	-59.78	59.77	11.38	0.22	60.84	10.78
6900.00	1.11	328.89	6899.42	-60.20	60.19	11.13	0.10	61.21	10.48
6925.00	1.20	327.81	6924.41	-60.62	60.62	10.87	0.38	61.58	10.17
6950.00	1.16	325.96	6949.41	-61.06	61.05	10.59	0.21	61.96	9.84
6975.00	1.21	330.56	6974.40	-61.50	61.49	10.32	0.42	62.35	9.52
7000.00	1.16	327.93	6999.40	-61.94	61.93	10.05	0.28	62.74	9.22
7025.00	1.24	326.65	7024.39	-62.38	62.38	9.77	0.33	63.14	8.90
7050.00	1.37	329.57	7049.38	-62.87	62.86	9.47	0.58	63.57	8.56
7075.00	1.51	330.65	7074.38	-63.41	63.40	9.15	0.55	64.06	8.22
7100.00	1.51	325.48	7099.37	-63.97	63.96	8.81	0.54	64.57	7.84
7125.00	1.53	326.93	7124.36	-64.52	64.51	8.44	0.17	65.06	7.45
7150.00	1.67	329.35	7149.35	-65.11	65.11	8.07	0.64	65.61	7.07
7175.00	1.80	328.09	7174.34	-65.76	65.75	7.68	0.53	66.20	6.66
7200.00	1.74	327.54	7199.32	-66.41	66.41	7.26	0.23	66.80	6.24
7225.00	1.80	328.14	7224.31	-67.07	67.06	6.85	0.25	67.41	5.83
7250.00	1.75	327.38	7249.30	-67.72	67.72	6.44	0.24	68.02	5.43

© 2017 Scientific Drilling International

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	1.72	326.52	7274.29	-68.36	68.35	6.03	0.16	68.62	5.04
7300.00	1.66	328.27	7299.28	-68.98	68.97	5.63	0.33	69.20	4.67
7325.00	1.61	329.12	7324.27	-69.59	69.58	5.26	0.20	69.78	4.32
7350.00	1.62	330.76	7349.26	-70.20	70.19	4.91	0.19	70.36	4.00
7375.00	1.48	333.56	7374.25	-70.79	70.79	4.59	0.63	70.94	3.71
7400.00	1.55	336.82	7399.24	-71.39	71.39	4.31	0.44	71.52	3.46
7425.00	1.54	335.88	7424.23	-72.01	72.00	4.04	0.11	72.12	3.21
7450.00	1.43	339.05	7449.22	-72.60	72.60	3.80	0.55	72.70	2.99
7475.00	1.49	343.79	7474.22	-73.21	73.20	3.59	0.55	73.29	2.81
7500.00	1.46	341.73	7499.21	-73.82	73.82	3.40	0.26	73.90	2.64
7525.00	1.56	342.90	7524.20	-74.45	74.45	3.20	0.45	74.51	2.46
7550.00	1.31	351.47	7549.19	-75.06	75.05	3.06	1.33	75.12	2.34
7575.00	1.27	350.30	7574.18	-75.61	75.61	2.97	0.21	75.67	2.25
7600.00	1.38	355.50	7599.18	-76.18	76.18	2.90	0.65	76.24	2.18
7625.00	1.33	359.08	7624.17	-76.77	76.77	2.87	0.38	76.82	2.14
7650.00	1.41	1.73	7649.16	-77.37	77.37	2.88	0.39	77.42	2.13
7675.00	1.40	11.24	7674.16	-77.98	77.98	2.95	0.93	78.03	2.16
7700.00	1.42	10.27	7699.15	-78.58	78.58	3.06	0.12	78.64	2.23
7725.00	1.52	14.52	7724.14	-79.21	79.20	3.20	0.59	79.27	2.31
7750.00	1.65	18.37	7749.13	-79.87	79.86	3.40	0.66	79.94	2.43
7775.00	1.73	25.72	7774.12	-80.55	80.54	3.67	0.92	80.63	2.61
7800.00	1.92	28.78	7799.11	-81.25	81.25	4.04	0.86	81.35	2.84
7825.00	1.89	30.17	7824.09	-81.97	81.97	4.45	0.22	82.09	3.10
7850.00	1.90	34.49	7849.08	-82.67	82.67	4.89	0.58	82.81	3.38
7875.00	1.60	37.56	7874.07	-83.29	83.29	5.34	1.26	83.46	3.67
7900.00	0.80	45.29	7899.06	-83.69	83.69	5.67	3.29	83.88	3.88
7925.00	0.58	37.99	7924.06	-83.91	83.91	5.87	0.94	84.12	4.00
7950.00	0.59	33.29	7949.06	-84.12	84.12	6.02	0.20	84.33	4.09
7975.00	0.68	28.47	7974.06	-84.36	84.36	6.16	0.42	84.58	4.18
8000.00	0.82	13.00	7999.06	-84.67	84.66	6.28	0.97	84.89	4.24
8025.00	1.08	8.91	8024.05	-85.07	85.07	6.35	1.06	85.30	4.27
8050.00	1.33	354.82	8049.05	-85.59	85.59	6.36	1.54	85.82	4.25

© 2017 Scientific Drilling International

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DIST ft	CLOSURE DIR deg
8075.00	1.43	353.31	8074.04	-86.19	86.19	6.30	0.45	86.42	4.18
8100.00	1.79	349.98	8099.03	-86.89	86.88	6.19	1.46	87.10	4.08
8125.00	1.64	348.10	8124.02	-87.62	87.62	6.05	0.62	87.83	3.95
8150.00	1.88	348.93	8149.01	-88.38	88.37	5.90	0.96	88.57	3.82
8175.00	1.86	349.61	8173.99	-89.18	89.17	5.75	0.12	89.36	3.69
8200.00	1.89	348.94	8198.98	-89.98	89.98	5.60	0.15	90.15	3.56
8225.00	2.00	348.76	8223.97	-90.82	90.81	5.43	0.44	90.97	3.42
8250.00	1.90	348.65	8248.95	-91.65	91.65	5.26	0.39	91.80	3.29
8275.00	1.80	349.38	8273.94	-92.44	92.44	5.11	0.41	92.58	3.16
8300.00	1.80	349.23	8298.93	-93.22	93.21	4.96	0.02	93.35	3.05
8325.00	1.83	347.43	8323.91	-93.99	93.99	4.80	0.26	94.11	2.93
8350.00	1.97	350.07	8348.90	-94.81	94.80	4.64	0.67	94.92	2.80
8375.00	2.04	356.16	8373.88	-95.68	95.67	4.54	0.90	95.78	2.72
8400.00	2.15	357.99	8398.87	-96.59	96.59	4.49	0.51	96.69	2.66
8425.00	2.08	357.11	8423.85	-97.51	97.51	4.45	0.32	97.61	2.61
8450.00	1.89	359.25	8448.83	-98.38	98.38	4.42	0.81	98.48	2.58
8475.00	1.84	359.97	8473.82	-99.19	99.19	4.42	0.22	99.29	2.55
8500.00	1.87	357.33	8498.81	-100.00	100.00	4.40	0.36	100.10	2.52
8525.00	1.93	355.07	8523.79	-100.83	100.83	4.34	0.39	100.92	2.47
8550.00	2.18	350.96	8548.78	-101.72	101.72	4.23	1.14	101.80	2.38
8575.00	2.10	346.42	8573.76	-102.63	102.63	4.05	0.74	102.71	2.26
8600.00	2.04	343.73	8598.74	-103.51	103.50	3.82	0.46	103.57	2.11
8625.00	2.05	341.79	8623.73	-104.36	104.35	3.56	0.28	104.41	1.95
8650.00	2.03	342.62	8648.71	-105.20	105.20	3.28	0.14	105.25	1.79
8675.00	1.95	337.44	8673.70	-106.02	106.01	2.99	0.78	106.06	1.61
8700.00	1.63	335.04	8698.69	-106.73	106.73	2.68	1.33	106.76	1.44
8725.00	1.19	322.90	8723.68	-107.26	107.26	2.37	2.11	107.28	1.27
8750.00	1.17	317.30	8748.67	-107.65	107.65	2.04	0.47	107.67	1.09
8775.00	1.17	313.14	8773.67	-108.01	108.01	1.68	0.34	108.02	0.89
8800.00	1.19	309.84	8798.66	-108.35	108.35	1.30	0.29	108.36	0.69
8825.00	1.11	302.49	8823.66	-108.65	108.65	0.89	0.68	108.65	0.47
8850.00	1.11	305.82	8848.65	-108.92	108.92	0.49	0.26	108.92	0.26

© 2017 Scientific Drilling International

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	1.10	301.85	8873.65	-109.19	109.19	0.09	0.31	109.19	0.05
8900.00	1.07	302.34	8898.64	-109.44	109.44	-0.31	0.12	109.44	359.84
8925.00	0.86	296.81	8923.64	-109.65	109.65	-0.67	0.93	109.65	359.65
8950.00	0.74	295.66	8948.64	-109.80	109.81	-0.99	0.47	109.81	359.48
8975.00	0.76	298.97	8973.64	-109.96	109.96	-1.28	0.19	109.96	359.33
9000.00	0.67	293.86	8998.63	-110.10	110.10	-1.56	0.44	110.11	359.19
9025.00	0.62	300.49	9023.63	-110.22	110.22	-1.81	0.36	110.24	359.06
9050.00	0.87	304.40	9048.63	-110.40	110.40	-2.08	0.99	110.42	358.92
9075.00	0.70	304.38	9073.63	-110.59	110.59	-2.37	0.66	110.62	358.77
9100.00	0.82	310.50	9098.63	-110.79	110.80	-2.63	0.56	110.83	358.64
9125.00	0.76	309.81	9123.62	-111.02	111.02	-2.89	0.22	111.06	358.51
9150.00	0.80	309.24	9148.62	-111.23	111.24	-3.16	0.14	111.28	358.38
9175.00	0.92	315.79	9173.62	-111.49	111.49	-3.43	0.63	111.54	358.24
9200.00	0.83	318.29	9198.61	-111.77	111.77	-3.69	0.38	111.83	358.11
9225.00	0.79	321.85	9223.61	-112.04	112.04	-3.92	0.28	112.11	358.00
9235.00	0.96	326.90	9233.61	-112.16	112.16	-4.01	1.85	112.24	357.95

© 2017 Scientific Drilling International