

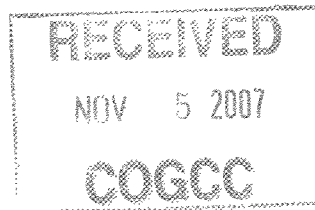
AS Drilled



02054831

ORIGINAL WELLBORE

69713C18



Job Number: 42DEFK0709774

Company: MARATHON

Lease/Well: 697-13C-18

Location: 697-13C PAD
C:\WINSERVE\69713C18.SVY
Rig Name: H&P 319

RKB: 24
DRILLED
G.L. or M.S.L.: 8342

State/Country: COLORADO, U.S.A.

Declination: 10.901

Grid:

File name:

Date/Time: 30-Oct-07 / 13:32

Curve Name: 697-13C-18 AS

Scientific Drilling

WINSERVE SURVEY CALCULATIONS

Minimum Curvature Method

Vertical Section Plane 220.84

Vertical Section Referenced to offset from Wellhead: EW =.00 Ft ,
NS=.00 Ft
Rectangular Coordinates Referenced to Wellhead

Measured CLOSURE Depth Distance FT	Incl CLOSURE Angle Direction Deg	Drift Dogleg Direction Severity Deg/100	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT
.00 GYRO	.00 .00	.00 .00	.00	.00	.00	.00
.54 GYRO	100.00 87.19	.62 .62	87.19	100.00	.03	.54
.90 GYRO	140.00 106.33	.88 2.29	160.31	140.00	-.25	.86
1.20 GYRO	173.00 129.79	.97 1.20	184.48	172.99	-.77	.92
1.68	206.00 152.19	1.58 1.97	194.94	205.98	-1.49	.78
						.61

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GYRO

2.33	236.00	1.85	213.05	235.97	-2.29	.41	1.46
GYRO	169.77	2.01					
3.18	267.00	2.38	225.44	266.95	-3.16	-.32	2.60
GYRO	185.73	2.25					
4.41	299.00	3.26	237.20	298.91	-4.12	-1.56	4.14
GYRO	200.68	3.28					
5.95	329.00	3.78	241.52	328.85	-5.06	-3.14	5.88
GYRO	211.86	1.94					
7.99	359.00	4.75	239.06	358.77	-6.17	-5.08	7.99
	219.46	3.29					
9.11	373.00	4.88	236.09	372.72	-6.80	-6.07	9.11
	221.76	2.01					
10.24	386.00	5.34	233.84	385.67	-7.46	-7.02	10.23
	223.23	3.86					
13.25	417.00	5.87	226.91	416.52	-9.40	-9.34	13.22
	224.82	2.77					
16.68	449.00	6.44	224.80	448.34	-11.79	-11.80	16.63
	225.02	1.92					
20.08	478.00	7.05	225.44	477.14	-14.19	-14.21	20.03
	225.04	2.12					
24.04	509.00	7.61	223.24	507.88	-17.02	-16.97	23.98
	224.92	2.02					
28.15	539.00	8.16	220.51	537.60	-20.09	-19.72	28.09
	224.47	2.22					
42.49	631.00	9.85	217.04	628.46	-31.33	-28.70	42.47
	222.49	1.93					

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Measured CLOSURE Depth Distance FT	Incl CLOSURE Angle Direction Deg	Drift Dogleg Direction Severity Deg/100	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT
723.00 59.58 bha 3	11.74 220.12	211.91 2.30	718.83	-45.56	-38.39	59.57
819.00 79.44	12.31 218.21	213.08 .65	812.72	-62.43	-49.14	79.36
907.00 98.31	12.50 217.58	216.79 .93	898.67	-77.91	-59.96	98.16
999.00 118.49	12.84 217.58	218.33 .52	988.43	-93.91	-72.26	118.30
1088.00 138.57	13.32 218.13	224.30 1.61	1075.13	-109.00	-85.56	138.41
1182.00 160.54	13.80 218.79	221.67 .83	1166.51	-125.13	-100.57	160.43
1277.00 183.67	14.43 219.20	222.40 .69	1258.64	-142.33	-116.09	183.59
1369.00 206.30	14.09 219.55	222.37 .37	1347.80	-159.07	-131.36	206.25
1467.00 230.11	14.06 219.85	222.42 .03	1442.86	-176.67	-147.43	230.07
1562.00 252.83	13.66 220.14	223.87 .56	1535.10	-193.28	-162.99	252.81
1657.00 275.19 added one jnt.hwdp to bha	13.67 220.54	226.28 .60	1627.41	-209.12	-178.88	275.19
1783.00 304.98	13.78 221.02	224.62 .32	1749.81	-230.09	-200.18	304.98
1877.00 327.11	13.49 221.25	224.10 .33	1841.16	-245.94	-215.67	327.10
1972.00 349.61	13.94 221.25	218.50 1.48	1933.46	-262.85	-230.51	349.60
2067.00 372.47	13.94 221.09	218.94 .11	2025.66	-280.71	-244.82	372.47
2161.00 395.03	13.85 221.01	220.16 .33	2116.91	-298.11	-259.20	395.03
2256.00 417.44	13.43 220.98	220.85 .47	2209.23	-315.15	-273.75	417.44
2351.00 439.64	13.64 221.09	225.37 1.13	2301.59	-331.36	-288.93	439.63
2445.00 461.86	13.80 221.32	226.47 .33	2392.91	-346.87	-304.95	461.84
2540.00 484.56	13.92 221.51	224.25 .57	2485.14	-362.86	-321.14	484.52

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2634.00	14.02	223.32	2576.36	-379.24	-336.84	507.19
507.23	221.61	.26				
First long string survey						
2654.00	14.53	221.16	2595.75	-382.89	-340.15	512.11
512.16	221.62	3.69				
2748.00	14.09	224.99	2686.83	-399.86	-356.00	535.32
535.38	221.68	1.11				
2843.00	13.65	219.13	2779.07	-416.74	-371.25	558.06
558.12	221.70	1.55				
2938.00	13.06	214.82	2871.50	-434.24	-384.46	579.94
579.98	221.52	1.22				
3032.00	14.97	212.96	2962.70	-453.15	-397.13	602.53
602.54	221.23	2.09				
3127.00	14.31	218.10	3054.62	-472.69	-411.05	626.41
626.41	221.01	1.53				
3222.00	15.15	220.74	3146.49	-491.33	-426.39	650.55
650.55	220.95	1.13				
3316.00	14.99	219.44	3237.26	-510.03	-442.13	674.99
674.99	220.92	.40				
3411.00	14.21	221.32	3329.19	-528.27	-457.64	698.93
698.93	220.90	.96				
3506.00	14.90	222.19	3421.14	-546.08	-473.54	722.80
722.80	220.93	.76				
3600.00	14.14	223.22	3512.14	-563.40	-489.52	746.36
746.36	220.99	.85				
3695.00	15.13	221.04	3604.06	-581.21	-505.61	770.35
770.35	221.02	1.19				
3789.00	14.23	222.28	3694.99	-599.01	-521.43	794.17
794.17	221.04	1.01				
3884.00	15.11	219.71	3786.89	-617.17	-537.20	818.22
818.22	221.04	1.15				
3979.00	14.78	218.33	3878.68	-636.21	-552.63	842.70
842.71	220.98	.51				
4073.00	14.63	219.17	3969.60	-654.82	-567.56	866.55
866.55	220.92	.28				
4168.00	14.33	221.04	4061.58	-672.98	-582.86	890.30
890.30	220.90	.58				
4263.00	13.87	220.58	4153.72	-690.50	-597.98	913.44
913.44	220.89	.50				

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Measured CLOSURE Depth Distance FT	Incl CLOSURE Angle Direction Deg	Drift Dogleg Direction Severity Deg Deg/100	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT
4357.00	15.00	222.84	4244.75	-707.98	-613.59	936.87
936.87	220.91	1.34				
4452.00	14.58	221.38	4336.61	-725.96	-629.85	961.11
961.11	220.95	.59				
4547.00	13.72	222.79	4428.72	-743.20	-645.41	984.33
984.33	220.97	.98				
4641.00	13.09	222.68	4520.16	-759.21	-660.20	1006.11
1006.11	221.01	.67				
4736.00	12.44	221.80	4612.81	-774.75	-674.31	1027.09
1027.10	221.04	.71				
4831.00	13.20	223.63	4705.44	-790.23	-688.61	1048.15
1048.16	221.07	.91				
4925.00	14.80	223.19	4796.65	-806.75	-704.24	1070.87
1070.88	221.12	1.71				
5020.00	13.50	224.53	4888.77	-823.50	-720.32	1094.06
1094.08	221.18	1.41				
5115.00	11.42	226.11	4981.52	-837.93	-734.87	1114.49
1114.52	221.25	2.22				
5210.00	10.78	225.33	5074.75	-850.69	-747.97	1132.72
1132.76	221.32	.69				
5304.00	13.56	218.94	5166.63	-865.45	-761.15	1152.50
1152.54	221.33	3.28				
5399.00	13.54	217.08	5258.98	-882.98	-774.86	1174.73
1174.76	221.27	.46				
5494.00	13.07	220.06	5351.43	-900.08	-788.47	1196.57
1196.59	221.22	.88				
5588.00	12.32	221.08	5443.14	-915.77	-801.91	1217.22
1217.25	221.21	.83				
5683.00	11.62	222.21	5536.07	-930.50	-814.99	1236.92
1236.95	221.21	.78				
5778.00	11.43	221.28	5629.15	-944.66	-827.63	1255.90
1255.93	221.22	.28				
5872.00	7.79	214.88	5721.82	-956.89	-837.42	1271.56
1271.58	221.19	4.03				
5967.00	4.84	226.68	5816.24	-964.92	-844.02	1281.95
1281.97	221.18	3.38				
6062.00	3.38	223.45	5910.99	-969.70	-848.86	1288.73
1288.76	221.20	1.56				

6158.00	.77	285.40	69713C18 6006.93	-971.59	-851.43	1291.84
1291.87	221.23	3.22				
6252.00	.65	342.93	6100.92	-970.91	-852.20	1291.83
1291.86	221.27	.74				
6347.00	.30	36.88	6195.92	-970.20	-852.21	1291.29
1291.33	221.30	.56				
6442.00	.20	326.62	6290.92	-969.86	-852.15	1291.00
1291.04	221.30	.31				
6537.00	.09	233.30	6385.92	-969.77	-852.30	1291.03
1291.07	221.31	.24				
6631.00	.63	265.04	6479.92	-969.85	-852.87	1291.47
1291.52	221.33	.59				
6726.00	1.08	258.56	6574.91	-970.08	-854.27	1292.55
1292.61	221.37	.48				
6821.00	1.19	245.81	6669.89	-970.66	-856.05	1294.15
1294.22	221.41	.29				
6916.00	1.16	255.61	6764.87	-971.30	-857.88	1295.84
1295.91	221.45	.21				
7010.00	1.26	258.42	6858.85	-971.75	-859.81	1297.44
1297.53	221.50	.12				
7105.00	1.34	286.45	6953.82	-971.64	-861.90	1298.73
1298.83	221.57	.67				
7200.00	1.07	284.66	7048.80	-971.10	-863.83	1299.58
1299.71	221.65	.29				
7295.00	1.07	324.68	7143.79	-970.15	-865.20	1299.75
1299.91	221.73	.77				
7389.00	1.11	31.31	7237.77	-968.66	-865.23	1298.65
1298.82	221.77	1.27				
7484.00	.91	31.22	7332.76	-967.23	-864.36	1297.00
1297.17	221.79	.21				
7579.00	.77	32.20	7427.75	-966.04	-863.63	1295.62
1295.80	221.80	.15				
7673.00	.79	33.30	7521.74	-964.97	-862.94	1294.35
1294.54	221.81	.03				
7768.00	.69	336.87	7616.73	-963.89	-862.80	1293.45
1293.65	221.83	.74				
7862.00	.64	336.06	7710.73	-962.89	-863.24	1292.98
1293.19	221.88	.05				
7957.00	.74	289.67	7805.72	-962.20	-864.03	1292.98
1293.21	221.92	.58				
8052.00	1.00	270.76	7900.71	-961.98	-865.44	1293.73
1293.99	221.98	.40				
8146.00	1.04	243.77	7994.69	-962.35	-867.03	1295.05
1295.32	222.02	.51				

Measured CLOSURE Depth Distance FT	Incl CLOSURE Angle Direction Deg	Drift Dogleg Direction Severity Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT
8241.00	1.38	246.48	8089.67	-963.19	-868.85	1296.87
1297.16	222.05	.36				
8336.00	1.60	225.43	8184.64	-964.58	-870.84	1299.22
1299.53	222.08	.62				
Last survey taken before tool lost signal.						
8430.00	1.52	234.68	8278.61	-966.22	-872.79	1301.74
1302.05	222.09	.28				
Survey pulled from memory log						
8525.00	2.36	252.81	8373.55	-967.52	-875.69	1304.63
1304.97	222.15	1.08				
Survey pulled from memory log						
8654.00	3.45	232.45	8502.39	-970.67	-881.30	1310.68
1311.07	222.24	1.15				
Survey pulled from memory log						
8691.00	3.24	237.87	8539.32	-971.91	-883.07	1312.77
1313.17	222.26	1.03				
Survey pulled from memory log						
8717.00	3.55	239.98	8565.28	-972.70	-884.39	1314.23
1314.65	222.28	1.29				
Survey pulled from memory log						
8810.00	3.62	237.59	8658.10	-975.72	-889.36	1319.77
1320.22	222.35	.18				
Survey pulled from memory log						
8932.00	3.60	247.25	8779.86	-979.26	-896.15	1326.88
1327.42	222.46	.50				
Survey pulled from memory log						
9007.00	3.33	257.10	8854.72	-980.66	-900.44	1330.75
1331.35	222.56	.87				

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Survey pulled from memory log

9158.00	3.16	250.31	9005.48	-983.04	-908.64	1337.91
1338.65	222.75	.28				

Survey pulled from memory log

9280.00	3.69	250.31	9127.26	-985.50	-915.50	1344.26
1345.12	222.89	.43				

projection to bit

9375.00	3.69	250.31	9222.06	-987.56	-921.25	1349.58
1350.55	223.01	.00				