

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

5N-68W-12 Miracle 40-12HZ Pad

Miracle 40C-11HZ

Plan A

Plan: Permit Rev-1

Sperry Drilling Services Proposal Report

15 December, 2014

Well Coordinates: 14,677,319.22 N, 1,655,545.78 E (40° 24' 48.64" N, 104° 56' 44.33" W)

Ground Level: 4,948.00 usft

Local Coordinate Origin:

Centered on Well Miracle 40C-11HZ

Viewing Datum:

RKB = 17' @ 4965.00usft (D Rig)

TVDs to System:

N

North Reference:

True

Unit System:

Dec-Deg - API - US Survey Feet - Custom

Version: 5000.1 Build: 70

HALLIBURTON

Project: WELD-NAD83-UTMFT13N
Site: 5N-68W-12 Miracle 40-12HZ Pad
Well: Miracle 40C-11HZ
Wellbore: Plan A
Design: Permit Rev-1

US ROCKIES WATTENBERG PLANNING

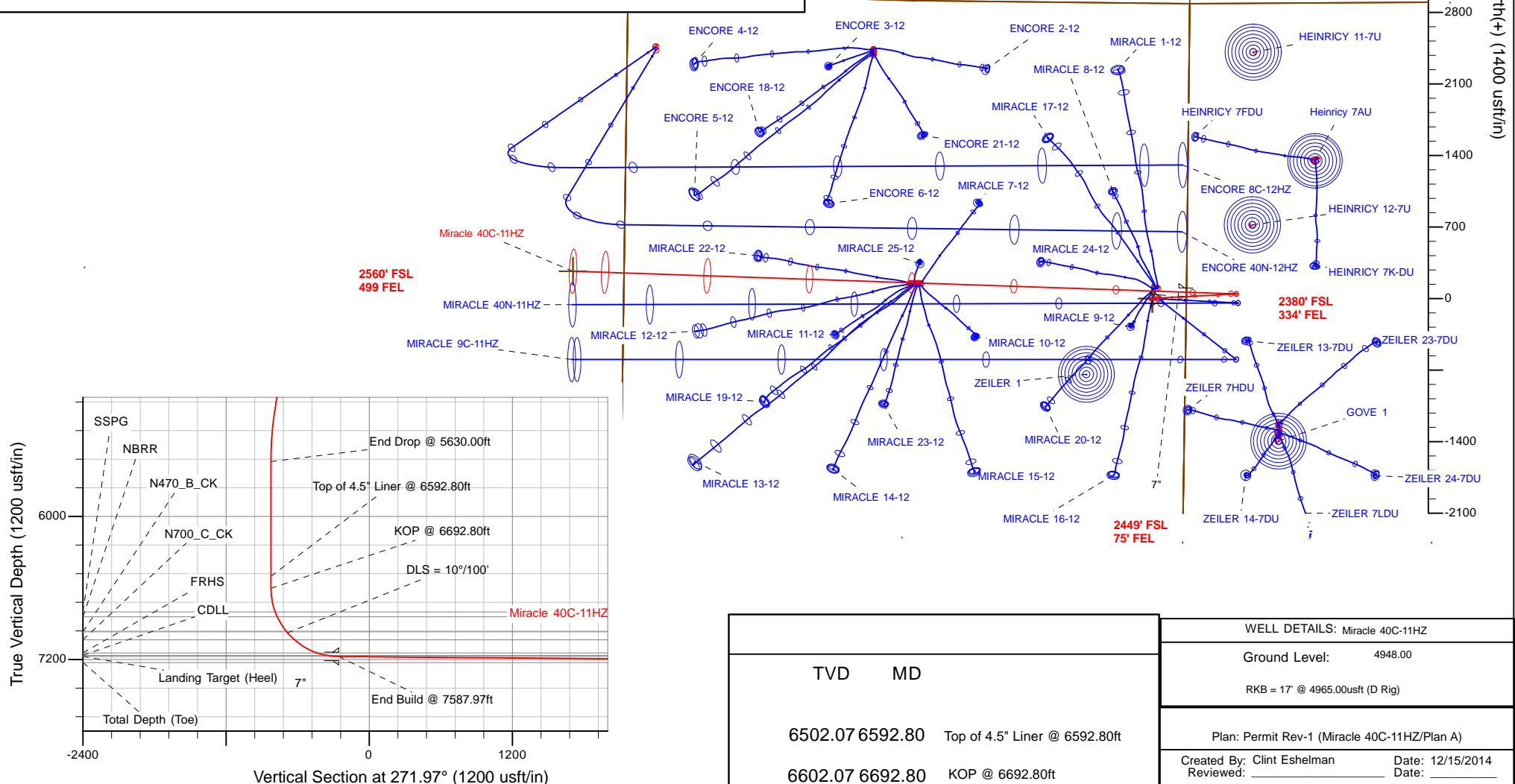
HALLIBURTON
Sperry Drilling

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	50.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	
3	100.00	1.00	275.00	100.00	0.04	-0.43	2.00	275.00	0.44	
4	1080.00	1.00	275.00	1079.85	1.53	-17.47	0.00	0.00	17.52	
5	1130.00	0.00	0.00	1129.85	1.57	-17.91	2.00	180.00	17.95	
6	1230.00	0.00	0.00	1229.85	1.57	-17.91	0.00	0.00	17.95	
7	1880.00	13.00	87.00	1874.28	5.41	55.42	2.00	87.00	-55.20	
8	4980.00	13.00	87.00	4894.83	41.91	751.81	0.00	0.00	-749.92	
9	5630.00	0.00	0.00	5539.27	45.75	825.13	2.00	180.00	-823.07	
10	6692.80	0.00	0.00	6602.07	45.75	825.13	0.00	0.00	-823.07	
11	7587.97	89.52	271.97	7175.00	65.24	257.34	10.00	271.97	-254.95	
12	13513.73	89.52	271.97	7225.00	268.57	-5664.72	0.00	0.00	5670.60	Miracle 40C-11HZ_TOE

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	
5N-R67W-Sec. 7_ Section Lines	0.00	2886.14	366.95	40.421435	-104.944330	Polygon
5N-R68W-Sec. 11_ Section Lines	0.00	0.00	0.00	40.413510	-104.945648	Polygon
5N-R68W-Sec. 12_ Section Lines	0.00	0.00	0.00	40.413510	-104.945648	Polygon
Miracle 40C-11HZ_SHL	0.00	0.00	0.00	40.413510	-104.945648	
Miracle 40C-11HZ_BHL	7225.00	268.57	-5664.72	40.414246	-104.965999	
Miracle 40C-11HZ_TOE	7225.00	268.57	-5664.72	40.414246	-104.965999	Point



Plan Report for Miracle 40C-11HZ - Permit Rev-1

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)	Toolface Azimuth (°)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5N-R68W-Sec. 12_Section Lines - 5N-R67W-Sec. 7_Section Lines - 5N-R68W-Sec. 11_Section Lines - Miracle 40C-11HZ_SHL										
50.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 50.00ft										
100.00	1.00	275.00	100.00	0.04	-0.43	0.44	2.00	2.00	0.00	275.00
End Nudge @ 100.00ft										
200.00	1.00	275.00	199.98	0.19	-2.17	2.18	0.00	0.00	0.00	0.00
245.02	1.00	275.00	245.00	0.26	-2.96	2.96	0.00	0.00	0.00	0.00
Base Fox Hills										
300.00	1.00	275.00	299.97	0.34	-3.91	3.92	0.00	0.00	0.00	0.00
400.00	1.00	275.00	399.95	0.49	-5.65	5.66	0.00	0.00	0.00	0.00
500.00	1.00	275.00	499.94	0.65	-7.39	7.41	0.00	0.00	0.00	0.00
600.00	1.00	275.00	599.92	0.80	-9.13	9.15	0.00	0.00	0.00	0.00
700.00	1.00	275.00	699.91	0.95	-10.87	10.89	0.00	0.00	0.00	0.00
704.00	1.00	275.00	703.91	0.96	-10.94	10.96	0.00	0.00	0.00	0.00
9 5/8"										
704.09	1.00	275.00	704.00	0.96	-10.94	10.96	0.00	0.00	0.00	0.00
Surface Csg Setting Depth										
800.00	1.00	275.00	799.89	1.10	-12.60	12.64	0.00	0.00	0.00	0.00
900.00	1.00	275.00	899.88	1.25	-14.34	14.38	0.00	0.00	0.00	0.00
1,000.00	1.00	275.00	999.86	1.41	-16.08	16.12	0.00	0.00	0.00	0.00
1,080.00	1.00	275.00	1,079.85	1.53	-17.47	17.52	0.00	0.00	0.00	0.00
Begin Drop @ 1080.00ft										
1,100.00	0.60	275.00	1,099.85	1.55	-17.75	17.79	2.00	-2.00	0.00	180.00
1,130.00	0.00	0.00	1,129.85	1.57	-17.91	17.95	2.00	-2.00	0.00	180.00
End Drop @ 1130.00ft										
1,200.00	0.00	0.00	1,199.85	1.57	-17.91	17.95	0.00	0.00	0.00	0.00
1,230.00	0.00	0.00	1,229.85	1.57	-17.91	17.95	0.00	0.00	0.00	0.00
Begin Nudge @ 1230.00ft										
1,300.00	1.40	87.00	1,299.84	1.61	-17.05	17.10	2.00	2.00	0.00	87.00
1,400.00	3.40	87.00	1,399.75	1.83	-12.87	12.93	2.00	2.00	0.00	0.00
1,500.00	5.40	87.00	1,499.45	2.23	-5.21	5.28	2.00	2.00	0.00	0.00
1,600.00	7.40	87.00	1,598.82	2.82	5.92	-5.82	2.00	2.00	0.00	0.00
1,700.00	9.40	87.00	1,697.74	3.58	20.51	-20.37	2.00	2.00	0.00	0.00
1,800.00	11.40	87.00	1,796.09	4.52	38.53	-38.36	2.00	2.00	0.00	0.00
1,880.00	13.00	87.00	1,874.28	5.41	55.42	-55.20	2.00	2.00	0.00	0.00
End Nudge @ 1880.00ft										
1,900.00	13.00	87.00	1,893.77	5.64	59.91	-59.68	0.00	0.00	0.00	0.00
2,000.00	13.00	87.00	1,991.21	6.82	82.37	-82.09	0.00	0.00	0.00	0.00
2,100.00	13.00	87.00	2,088.64	8.00	104.84	-104.50	0.00	0.00	0.00	0.00
2,200.00	13.00	87.00	2,186.08	9.18	127.30	-126.91	0.00	0.00	0.00	0.00
2,300.00	13.00	87.00	2,283.52	10.35	149.77	-149.32	0.00	0.00	0.00	0.00
2,400.00	13.00	87.00	2,380.96	11.53	172.23	-171.73	0.00	0.00	0.00	0.00
2,500.00	13.00	87.00	2,478.39	12.71	194.69	-194.14	0.00	0.00	0.00	0.00
2,600.00	13.00	87.00	2,575.83	13.89	217.16	-216.55	0.00	0.00	0.00	0.00
2,700.00	13.00	87.00	2,673.27	15.06	239.62	-238.96	0.00	0.00	0.00	0.00
2,800.00	13.00	87.00	2,770.70	16.24	262.09	-261.37	0.00	0.00	0.00	0.00
2,900.00	13.00	87.00	2,868.14	17.42	284.55	-283.78	0.00	0.00	0.00	0.00
3,000.00	13.00	87.00	2,965.58	18.60	307.02	-306.20	0.00	0.00	0.00	0.00
3,100.00	13.00	87.00	3,063.01	19.77	329.48	-328.61	0.00	0.00	0.00	0.00
3,200.00	13.00	87.00	3,160.45	20.95	351.94	-351.02	0.00	0.00	0.00	0.00
3,300.00	13.00	87.00	3,257.89	22.13	374.41	-373.43	0.00	0.00	0.00	0.00
3,400.00	13.00	87.00	3,355.33	23.30	396.87	-395.84	0.00	0.00	0.00	0.00
3,464.32	13.00	87.00	3,418.00	24.06	411.32	-410.25	0.00	0.00	0.00	0.00
Parkman										
3,500.00	13.00	87.00	3,452.76	24.48	419.34	-418.25	0.00	0.00	0.00	0.00
3,600.00	13.00	87.00	3,550.20	25.66	441.80	-440.66	0.00	0.00	0.00	0.00

Plan Report for Miracle 40C-11HZ - Permit Rev-1

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)	Toolface Azimuth (°)
3,700.00	13.00	87.00	3,647.64	26.84	464.27	-463.07	0.00	0.00	0.00	0.00
3,800.00	13.00	87.00	3,745.07	28.01	486.73	-485.48	0.00	0.00	0.00	0.00
3,900.00	13.00	87.00	3,842.51	29.19	509.19	-507.89	0.00	0.00	0.00	0.00
4,000.00	13.00	87.00	3,939.95	30.37	531.66	-530.30	0.00	0.00	0.00	0.00
4,100.00	13.00	87.00	4,037.38	31.55	554.12	-552.71	0.00	0.00	0.00	0.00
4,200.00	13.00	87.00	4,134.82	32.72	576.59	-575.12	0.00	0.00	0.00	0.00
4,300.00	13.00	87.00	4,232.26	33.90	599.05	-597.53	0.00	0.00	0.00	0.00
4,400.00	13.00	87.00	4,329.70	35.08	621.52	-619.94	0.00	0.00	0.00	0.00
4,500.00	13.00	87.00	4,427.13	36.25	643.98	-642.35	0.00	0.00	0.00	0.00
4,574.78	13.00	87.00	4,500.00	37.14	660.78	-659.11	0.00	0.00	0.00	0.00
Sussex										
4,600.00	13.00	87.00	4,524.57	37.43	666.44	-664.76	0.00	0.00	0.00	0.00
4,700.00	13.00	87.00	4,622.01	38.61	688.91	-687.17	0.00	0.00	0.00	0.00
4,800.00	13.00	87.00	4,719.44	39.79	711.37	-709.58	0.00	0.00	0.00	0.00
4,900.00	13.00	87.00	4,816.88	40.96	733.84	-732.00	0.00	0.00	0.00	0.00
4,980.00	13.00	87.00	4,894.83	41.91	751.81	-749.92	0.00	0.00	0.00	0.00
Begin Drop @ 4980.00ft										
5,000.00	12.60	87.00	4,914.33	42.14	756.23	-754.34	2.00	-2.00	0.00	180.00
5,100.00	10.60	87.00	5,012.29	43.19	776.31	-774.37	2.00	-2.00	0.00	180.00
5,200.00	8.60	87.00	5,110.88	44.06	792.97	-790.98	2.00	-2.00	0.00	180.00
5,300.00	6.60	87.00	5,210.00	44.75	806.17	-804.16	2.00	-2.00	0.00	180.00
5,400.00	4.60	87.00	5,309.51	45.27	815.92	-813.88	2.00	-2.00	0.00	180.00
5,500.00	2.60	87.00	5,409.31	45.59	822.19	-820.13	2.00	-2.00	0.00	180.00
5,600.00	0.60	87.00	5,509.27	45.74	824.98	-822.92	2.00	-2.00	0.00	180.00
5,630.00	0.00	0.00	5,539.27	45.75	825.13	-823.07	2.00	-2.00	0.00	-180.00
End Drop @ 5630.00ft										
5,700.00	0.00	0.00	5,609.27	45.75	825.13	-823.07	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,709.27	45.75	825.13	-823.07	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,809.27	45.75	825.13	-823.07	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	5,909.27	45.75	825.13	-823.07	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,009.27	45.75	825.13	-823.07	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,109.27	45.75	825.13	-823.07	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,209.27	45.75	825.13	-823.07	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,309.27	45.75	825.13	-823.07	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,409.27	45.75	825.13	-823.07	0.00	0.00	0.00	0.00
6,592.80	0.00	0.00	6,502.07	45.75	825.13	-823.07	0.00	0.00	0.00	0.00
Top of 4.5" Liner @ 6592.80ft										
6,600.00	0.00	0.00	6,509.27	45.75	825.13	-823.07	0.00	0.00	0.00	0.00
6,692.80	0.00	0.00	6,602.07	45.75	825.13	-823.07	0.00	0.00	0.00	0.00
KOP @ 6692.80ft										
6,700.00	0.72	271.97	6,609.27	45.75	825.09	-823.03	10.00	10.00	0.00	271.97
6,800.00	10.72	271.97	6,708.64	46.09	815.14	-813.07	10.00	10.00	0.00	0.00
6,895.96	20.32	271.97	6,801.00	46.97	789.51	-787.43	10.00	10.00	0.00	0.00
SSPG										
6,900.00	20.72	271.97	6,804.78	47.02	788.10	-786.01	10.00	10.00	0.00	0.00
6,939.26	24.65	271.97	6,841.00	47.54	772.97	-770.88	10.00	10.00	0.00	0.00
NBRR										
7,000.00	30.72	271.97	6,894.76	48.51	744.78	-742.67	10.00	10.00	0.00	0.00
7,088.43	39.56	271.97	6,967.00	50.25	693.96	-691.82	10.00	10.00	0.00	0.00
N470_B_CK										
7,100.00	40.72	271.97	6,975.84	50.51	686.50	-684.36	10.00	10.00	0.00	0.00
DLS = 10°/100'										
7,183.59	49.08	271.97	7,035.00	52.53	627.59	-625.41	10.00	10.00	0.00	0.00
N700_C_CK										
7,200.00	50.72	271.97	7,045.57	52.96	615.04	-612.86	10.00	10.00	0.00	0.00
7,300.00	60.72	271.97	7,101.82	55.79	532.57	-530.34	10.00	10.00	0.00	0.00
7,400.00	70.72	271.97	7,142.89	58.92	441.58	-439.30	10.00	10.00	0.00	0.00
7,406.49	71.37	271.97	7,145.00	59.13	435.45	-433.16	10.00	10.00	0.00	0.00

Plan Report for Miracle 40C-11HZ - Permit Rev-1

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)	Toolface Azimuth (°)
FRHS										
7,485.46	79.27	271.97	7,165.00	61.75	359.16	-356.83	10.00	10.00	0.00	0.00
CDLL										
7,500.00	80.72	271.97	7,167.53	62.24	344.85	-342.51	10.00	10.00	0.00	0.00
7,587.97	89.52	271.97	7,175.00	65.24	257.34	-254.94	10.00	10.00	0.00	0.00
End Build @ 7587.97ft - Landing Target (Heel) - 7"										
7,600.00	89.52	271.97	7,175.11	65.66	245.32	-242.91	0.00	0.00	0.00	0.00
7,700.00	89.52	271.97	7,175.95	69.09	145.38	-142.92	0.00	0.00	0.00	0.00
7,800.00	89.52	271.97	7,176.79	72.52	45.44	-42.92	0.00	0.00	0.00	0.00
7,900.00	89.52	271.97	7,177.64	75.95	-54.50	57.07	0.00	0.00	0.00	0.00
8,000.00	89.52	271.97	7,178.48	79.38	-154.43	157.07	0.00	0.00	0.00	0.00
8,100.00	89.52	271.97	7,179.32	82.81	-254.37	257.07	0.00	0.00	0.00	0.00
8,200.00	89.52	271.97	7,180.17	86.24	-354.31	357.06	0.00	0.00	0.00	0.00
8,300.00	89.52	271.97	7,181.01	89.67	-454.25	457.06	0.00	0.00	0.00	0.00
8,400.00	89.52	271.97	7,181.86	93.11	-554.18	557.06	0.00	0.00	0.00	0.00
8,500.00	89.52	271.97	7,182.70	96.54	-654.12	657.05	0.00	0.00	0.00	0.00
8,600.00	89.52	271.97	7,183.54	99.97	-754.06	757.05	0.00	0.00	0.00	0.00
8,700.00	89.52	271.97	7,184.39	103.40	-854.00	857.05	0.00	0.00	0.00	0.00
8,800.00	89.52	271.97	7,185.23	106.83	-953.93	957.04	0.00	0.00	0.00	0.00
8,900.00	89.52	271.97	7,186.07	110.26	-1,053.87	1,057.04	0.00	0.00	0.00	0.00
9,000.00	89.52	271.97	7,186.92	113.69	-1,153.81	1,157.04	0.00	0.00	0.00	0.00
9,100.00	89.52	271.97	7,187.76	117.12	-1,253.75	1,257.03	0.00	0.00	0.00	0.00
9,200.00	89.52	271.97	7,188.61	120.56	-1,353.68	1,357.03	0.00	0.00	0.00	0.00
9,300.00	89.52	271.97	7,189.45	123.99	-1,453.62	1,457.02	0.00	0.00	0.00	0.00
9,400.00	89.52	271.97	7,190.29	127.42	-1,553.56	1,557.02	0.00	0.00	0.00	0.00
9,500.00	89.52	271.97	7,191.14	130.85	-1,653.50	1,657.02	0.00	0.00	0.00	0.00
9,600.00	89.52	271.97	7,191.98	134.28	-1,753.43	1,757.01	0.00	0.00	0.00	0.00
9,700.00	89.52	271.97	7,192.82	137.71	-1,853.37	1,857.01	0.00	0.00	0.00	0.00
9,800.00	89.52	271.97	7,193.67	141.14	-1,953.31	1,957.01	0.00	0.00	0.00	0.00
9,900.00	89.52	271.97	7,194.51	144.57	-2,053.25	2,057.00	0.00	0.00	0.00	0.00
10,000.00	89.52	271.97	7,195.36	148.01	-2,153.18	2,157.00	0.00	0.00	0.00	0.00
10,100.00	89.52	271.97	7,196.20	151.44	-2,253.12	2,257.00	0.00	0.00	0.00	0.00
10,200.00	89.52	271.97	7,197.04	154.87	-2,353.06	2,356.99	0.00	0.00	0.00	0.00
10,300.00	89.52	271.97	7,197.89	158.30	-2,453.00	2,456.99	0.00	0.00	0.00	0.00
10,400.00	89.52	271.97	7,198.73	161.73	-2,552.93	2,556.99	0.00	0.00	0.00	0.00
10,500.00	89.52	271.97	7,199.57	165.16	-2,652.87	2,656.98	0.00	0.00	0.00	0.00
10,600.00	89.52	271.97	7,200.42	168.59	-2,752.81	2,756.98	0.00	0.00	0.00	0.00
10,700.00	89.52	271.97	7,201.26	172.02	-2,852.75	2,856.97	0.00	0.00	0.00	0.00
10,800.00	89.52	271.97	7,202.10	175.46	-2,952.69	2,956.97	0.00	0.00	0.00	0.00
10,900.00	89.52	271.97	7,202.95	178.89	-3,052.62	3,056.97	0.00	0.00	0.00	0.00
11,000.00	89.52	271.97	7,203.79	182.32	-3,152.56	3,156.96	0.00	0.00	0.00	0.00
11,100.00	89.52	271.97	7,204.64	185.75	-3,252.50	3,256.96	0.00	0.00	0.00	0.00
11,200.00	89.52	271.97	7,205.48	189.18	-3,352.44	3,356.96	0.00	0.00	0.00	0.00
11,300.00	89.52	271.97	7,206.32	192.61	-3,452.37	3,456.95	0.00	0.00	0.00	0.00
11,400.00	89.52	271.97	7,207.17	196.04	-3,552.31	3,556.95	0.00	0.00	0.00	0.00
11,500.00	89.52	271.97	7,208.01	199.47	-3,652.25	3,656.95	0.00	0.00	0.00	0.00
11,600.00	89.52	271.97	7,208.85	202.91	-3,752.19	3,756.94	0.00	0.00	0.00	0.00
11,700.00	89.52	271.97	7,209.70	206.34	-3,852.12	3,856.94	0.00	0.00	0.00	0.00
11,800.00	89.52	271.97	7,210.54	209.77	-3,952.06	3,956.94	0.00	0.00	0.00	0.00
11,900.00	89.52	271.97	7,211.39	213.20	-4,052.00	4,056.93	0.00	0.00	0.00	0.00
12,000.00	89.52	271.97	7,212.23	216.63	-4,151.94	4,156.93	0.00	0.00	0.00	0.00
12,100.00	89.52	271.97	7,213.07	220.06	-4,251.87	4,256.93	0.00	0.00	0.00	0.00
12,200.00	89.52	271.97	7,213.92	223.49	-4,351.81	4,356.92	0.00	0.00	0.00	0.00
12,300.00	89.52	271.97	7,214.76	226.92	-4,451.75	4,456.92	0.00	0.00	0.00	0.00
12,400.00	89.52	271.97	7,215.60	230.36	-4,551.69	4,556.91	0.00	0.00	0.00	0.00
12,500.00	89.52	271.97	7,216.45	233.79	-4,651.62	4,656.91	0.00	0.00	0.00	0.00
12,600.00	89.52	271.97	7,217.29	237.22	-4,751.56	4,756.91	0.00	0.00	0.00	0.00
12,700.00	89.52	271.97	7,218.13	240.65	-4,851.50	4,856.90	0.00	0.00	0.00	0.00
12,800.00	89.52	271.97	7,218.98	244.08	-4,951.44	4,956.90	0.00	0.00	0.00	0.00

Plan Report for Miracle 40C-11HZ - Permit Rev-1

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)	Toolface Azimuth (°)
12,900.00	89.52	271.97	7,219.82	247.51	-5,051.37	5,056.90	0.00	0.00	0.00	0.00
13,000.00	89.52	271.97	7,220.67	250.94	-5,151.31	5,156.89	0.00	0.00	0.00	0.00
13,100.00	89.52	271.97	7,221.51	254.37	-5,251.25	5,256.89	0.00	0.00	0.00	0.00
13,200.00	89.52	271.97	7,222.35	257.81	-5,351.19	5,356.89	0.00	0.00	0.00	0.00
13,300.00	89.52	271.97	7,223.20	261.24	-5,451.12	5,456.88	0.00	0.00	0.00	0.00
13,400.00	89.52	271.97	7,224.04	264.67	-5,551.06	5,556.88	0.00	0.00	0.00	0.00
13,500.00	89.52	271.97	7,224.88	268.10	-5,651.00	5,656.88	0.00	0.00	0.00	0.00
13,513.73	89.52	271.97	7,225.00	268.57	-5,664.72	5,670.60	0.00	0.00	0.00	0.00

TD Well @ 13513.73ft - Miracle 40C-11HZ_BHL - Miracle 40C-11HZ_TOE

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
50.00	50.00	0.00	0.00	Begin Nudge @ 50.00ft
100.00	100.00	0.04	-0.43	End Nudge @ 100.00ft
1,080.00	1,079.85	1.53	-17.47	Begin Drop @ 1080.00ft
1,130.00	1,129.85	1.57	-17.91	End Drop @ 1130.00ft
1,230.00	1,229.85	1.57	-17.91	Begin Nudge @ 1230.00ft
1,880.00	1,874.28	5.41	55.42	End Nudge @ 1880.00ft
4,980.00	4,894.83	41.91	751.81	Begin Drop @ 4980.00ft
5,630.00	5,539.27	45.75	825.13	End Drop @ 5630.00ft
6,592.80	6,502.07	45.75	825.13	Top of 4.5" Liner @ 6592.80ft
6,692.80	6,602.07	45.75	825.13	KOP @ 6692.80ft
7,100.00	6,975.84	50.51	686.50	DLS = 10°/100'
7,587.97	7,175.00	65.24	257.34	End Build @ 7587.97ft
13,513.73	7,225.00	268.57	-5,664.72	TD Well @ 13513.73ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/_S (usft)	+E/-W (usft)	
User	No Target (Freehand)	271.97	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	7,587.97	Permit Rev-1	MWD+IFR1
7,587.97	13,513.73	Permit Rev-1	MWD+IFR1

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
704.00	703.91	9 5/8"	9-5/8	13-1/2
7,587.97	7,175.00	7"	7	8-3/4

Plan Report for Miracle 40C-11HZ - Permit Rev-1

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
245.02	245.00	Base Fox Hills		0.00	
704.09	704.00	Surface Csg Setting Depth		0.00	
3,464.32	3,418.00	Parkman		0.00	
4,574.78	4,500.00	Sussex		0.00	
6,895.96	6,801.00	SSPG		0.00	
6,939.26	6,841.00	NBRR		0.00	
7,088.43	6,967.00	N470_B_CK		0.00	
7,183.59	7,035.00	N700_C_CK		0.00	
7,406.49	7,145.00	FRHS		0.00	
7,485.46	7,165.00	CDLL		0.00	
7,587.97	7,175.00	Landing Target (Heel)		0.00	
13,513.73	7,225.00	Total Depth (Toe)		0.00	

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
Miracle 40C-11HZ_BHL	7,225.00	268.57	-5,664.72	Point
Miracle 40C-11HZ_TOE	7,225.00	268.57	-5,664.72	Point
5N-R68W-Sec. 12_Section Lines	0.00	0.00	0.00	Polygon
5N-R67W-Sec. 7_Section Lines	0.00	2,886.14	366.95	Polygon
5N-R68W-Sec. 11_Section Lines	0.00	0.00	0.00	Polygon
Miracle 40C-11HZ_SHL	0.00	0.00	0.00	Point

North Reference Sheet for 5N-68W-12 Miracle 40-12HZ Pad - Miracle 40C-11HZ - Plan A

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.

Vertical Depths are relative to RKB = 17' @ 4965.00usft (D Rig). Northing and Easting are relative to Miracle 40C- 11HZ

Coordinate System is Universal Transverse Mercator (US Survey Feet), Zone 13N (108 W to 102 W) using datum North American Datum 1983, ellipsoid

Projection method is Transverse Mercator (Gauss-Kruger)

Central Meridian is -105.00°, Longitude Origin:0.000000°, Latitude Origin:0.000000°

False Easting: 1,640,416.67usft, False Northing: 0.00usft, Scale Reduction: 0.99960026

Grid Coordinates of Well: 14,677,319.22 usft N, 1,655,545.78 usft E

Geographical Coordinates of Well: 40° 24' 48.64" N, 104° 56' 44.33" W

Grid Convergence at Surface is: 0.04°

Based upon Minimum Curvature type calculations, at a Measured Depth of 13,513.73usft the Bottom Hole Displacement is 5,671.08usft in the Direction of 272.71° (True).

Magnetic Convergence at surface is: -8.46° (15 December 2014, , IGRF2010)

