

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 19-T2N-65W

Russian Fiddler 37C-18HZ

Plan A Rev 0

Plan: Plan A Rev 0 Permit

Sperry Drilling Services

Proposal Report

15 August, 2012

Well Coordinates: 1,286,645.75 N, 3,222,029.14 E (40° 07' 03.03" N, 104° 42' 21.94" W)

Ground Level: 4,989.00 ft

Local Coordinate Origin: Centered on Well Russian Fiddler 37C-18HZ

Viewing Datum: RKB=17ft @ 5006.00ft (Drilling Rig)

TVDs to System: N

North Reference: True

Unit System: API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 2003.16 Build: 431

HALLIBURTON

Project: Weld County, CO (NAD 83)
 Site: Sec. 19-T2N-65W
 Well: Russian Fiddler 37C-18HZ
 Wellbore: Plan A Rev 0
 Design: Plan A Rev 0 Permit

Anadarko Petroleum Corp.

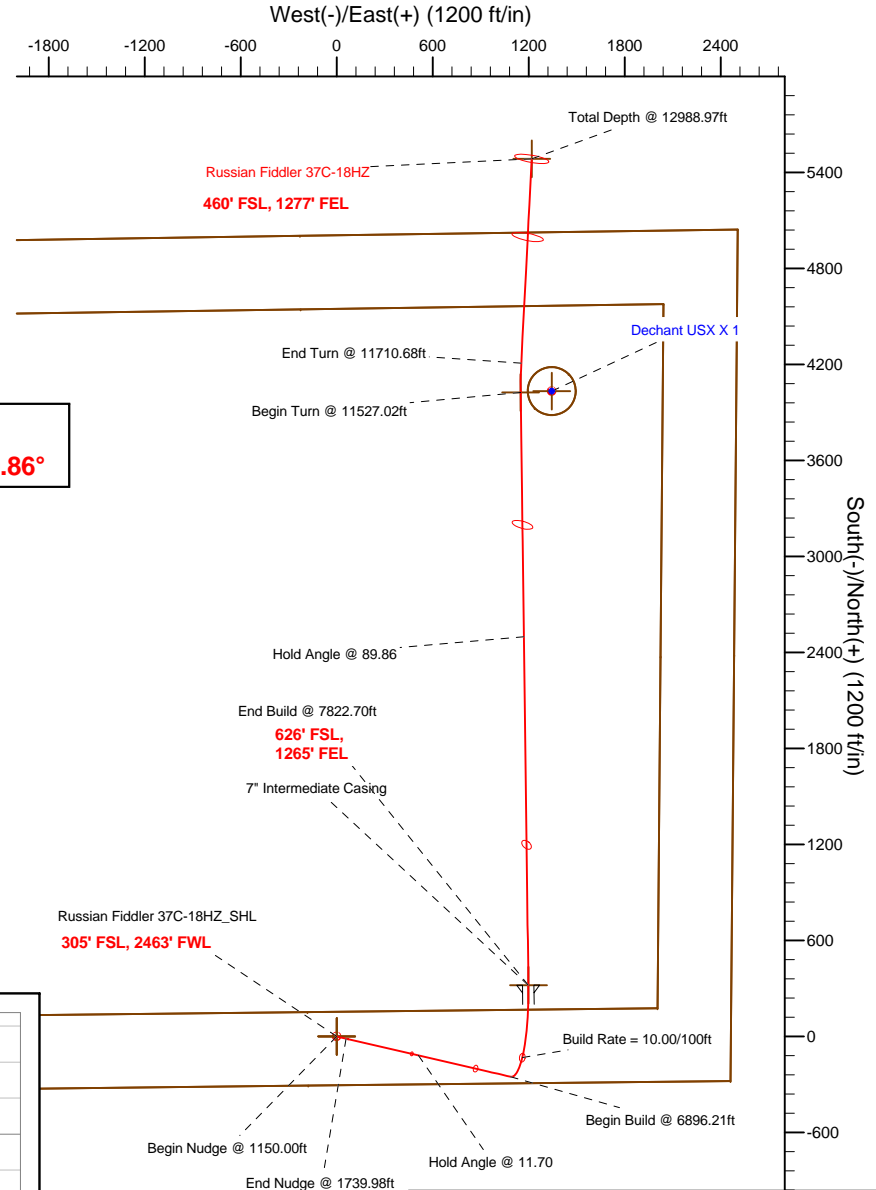
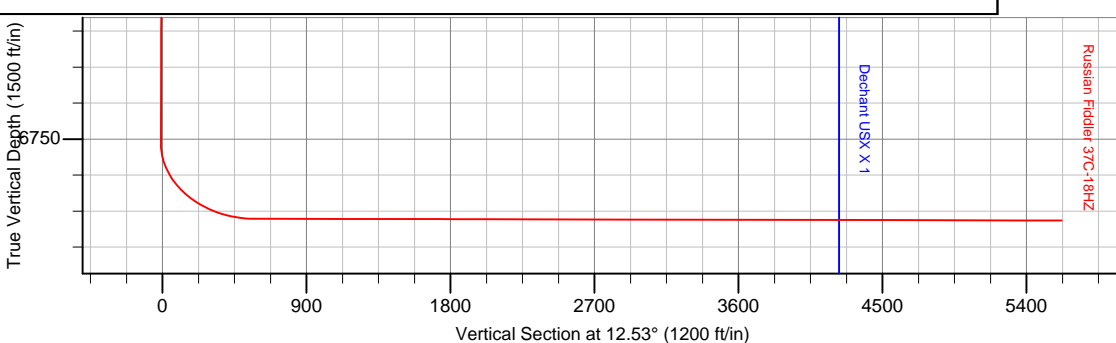
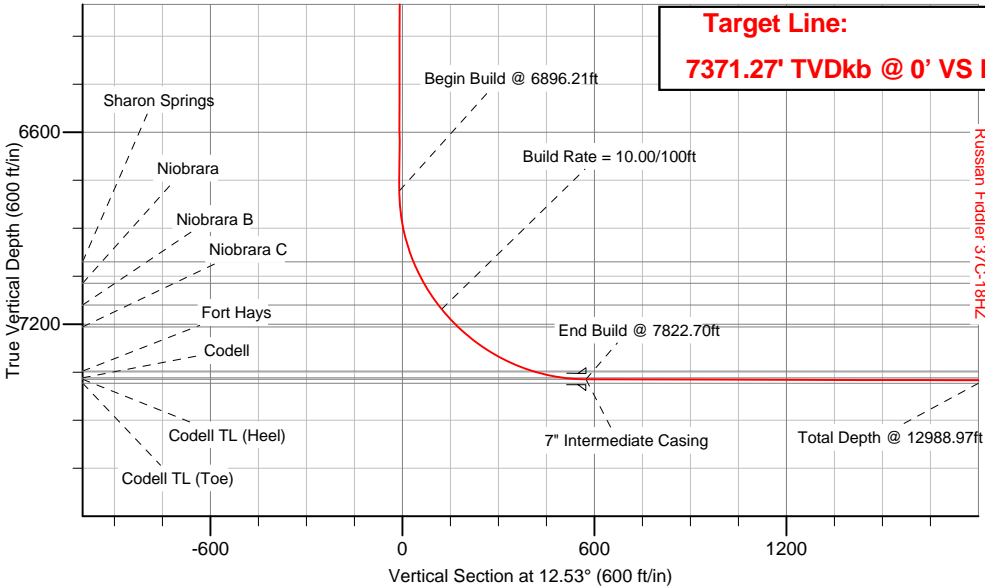


SECTION DETAILS

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	1150.00	0.00	0.00	1150.00	0.00	0.00	0.00	0.00	0.00	
3	1739.98	11.80	103.03	1735.82	-13.65	58.98	2.00	103.03	-0.53	
4	6896.21	11.80	103.03	6783.09	-251.36	1086.23	0.00	0.00	-9.75	
5	7822.70	89.86	359.26	7372.00	321.00	1198.00	10.00	-103.52	573.23	Russian Fiddler 37C-18HZ_Casing Point
6	11527.02	89.86	359.26	7381.32	4025.00	1150.00	0.00	0.00	4178.62	Russian Fiddler 37C-18HZ_WP
7	11710.68	89.86	2.93	7381.78	4208.60	1153.51	2.00	90.01	4358.61	
8	12988.97	89.86	2.93	7385.00	5485.21	1218.87	0.00	0.00	5619.00	Russian Fiddler 37C-18HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Dechant USX X 1	0.00	4033.76	1343.54	40.128580	-104.701290	Circle (Radius: 150.00)
Russian Fiddler 37C-18HZ_Section Line	0.00	0.00	0.00	40.117507	-104.706095	Polygon
Russian Fiddler 37C-18HZ_Setback Line	0.00	0.00	0.00	40.117507	-104.706095	Polygon
Russian Fiddler 37C-18HZ_SHL	0.00	0.00	0.00	40.117507	-104.706095	Point
Russian Fiddler 37C-18HZ_Casing Point	7372.00	321.00	1198.00	40.118388	-104.701812	Point
Russian Fiddler 37C-18HZ_WP	7381.32	4025.00	1150.00	40.128556	-104.701983	Point
Russian Fiddler 37C-18HZ_BHL	7385.00	5485.21	1218.87	40.132564	-104.701736	Point



WELL DETAILS: Russian Fiddler 37C-18HZ	
Ground Level: 4989.00	RKB=17ft @ 5006.00ft (Drilling Rig)
Plan: Plan A Rev 0 Permit (Russian Fiddler 37C-18HZ/Plan A Rev 0)	
Created By: Fred Hartmann	Date: 08/09/2012
Reviewed: _____	Date: _____

Plan Report for Russian Fiddler 37C-18HZ - Plan A Rev 0 Permit

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tie-On to Surface @ 0.00ft - Dechant USX X 1 - Russian Fiddler 37C-18HZ_SHL - Russian Fiddler 37C-18HZ_Section Line - Russ										
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hold Angle @ 0.00										
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,150.00	0.00	0.00	1,150.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 1150.00ft										
1,200.00	1.00	103.03	1,200.00	-0.10	0.43	0.00	2.00	2.00	0.00	103.03
1,300.00	3.00	103.03	1,299.93	-0.89	3.83	-0.03	2.00	2.00	0.00	0.00
1,400.00	5.00	103.03	1,399.68	-2.46	10.62	-0.10	2.00	2.00	0.00	0.00
1,500.00	7.00	103.03	1,499.13	-4.81	20.80	-0.19	2.00	2.00	0.00	0.00
1,600.00	9.00	103.03	1,598.15	-7.95	34.36	-0.31	2.00	2.00	0.00	0.00
Nudge Rate = 2.00/100ft										
1,700.00	11.00	103.03	1,696.63	-11.87	51.28	-0.46	2.00	2.00	0.00	0.00
1,739.98	11.80	103.03	1,735.82	-13.65	58.98	-0.53	2.00	2.00	0.00	0.00
End Nudge @ 1739.98ft										
1,800.00	11.80	103.03	1,794.57	-16.42	70.94	-0.64	0.00	0.00	0.00	0.00
1,900.00	11.80	103.03	1,892.46	-21.03	90.86	-0.82	0.00	0.00	0.00	0.00
2,000.00	11.80	103.03	1,990.34	-25.64	110.78	-0.99	0.00	0.00	0.00	0.00
2,100.00	11.80	103.03	2,088.23	-30.25	130.70	-1.17	0.00	0.00	0.00	0.00
2,200.00	11.80	103.03	2,186.12	-34.86	150.63	-1.35	0.00	0.00	0.00	0.00
2,300.00	11.80	103.03	2,284.00	-39.47	170.55	-1.53	0.00	0.00	0.00	0.00
2,400.00	11.80	103.03	2,381.89	-44.08	190.47	-1.71	0.00	0.00	0.00	0.00
2,500.00	11.80	103.03	2,479.78	-48.69	210.39	-1.89	0.00	0.00	0.00	0.00
2,600.00	11.80	103.03	2,577.67	-53.30	230.31	-2.07	0.00	0.00	0.00	0.00
2,700.00	11.80	103.03	2,675.55	-57.91	250.24	-2.25	0.00	0.00	0.00	0.00
2,800.00	11.80	103.03	2,773.44	-62.52	270.16	-2.43	0.00	0.00	0.00	0.00
2,900.00	11.80	103.03	2,871.33	-67.13	290.08	-2.61	0.00	0.00	0.00	0.00
3,000.00	11.80	103.03	2,969.21	-71.74	310.00	-2.78	0.00	0.00	0.00	0.00
3,100.00	11.80	103.03	3,067.10	-76.35	329.93	-2.96	0.00	0.00	0.00	0.00
3,200.00	11.80	103.03	3,164.99	-80.96	349.85	-3.14	0.00	0.00	0.00	0.00
3,300.00	11.80	103.03	3,262.87	-85.57	369.77	-3.32	0.00	0.00	0.00	0.00
3,400.00	11.80	103.03	3,360.76	-90.18	389.69	-3.50	0.00	0.00	0.00	0.00
3,500.00	11.80	103.03	3,458.65	-94.79	409.62	-3.68	0.00	0.00	0.00	0.00
3,600.00	11.80	103.03	3,556.53	-99.40	429.54	-3.86	0.00	0.00	0.00	0.00
3,700.00	11.80	103.03	3,654.42	-104.01	449.46	-4.04	0.00	0.00	0.00	0.00
3,800.00	11.80	103.03	3,752.31	-108.62	469.38	-4.22	0.00	0.00	0.00	0.00
3,900.00	11.80	103.03	3,850.19	-113.23	489.31	-4.39	0.00	0.00	0.00	0.00
4,000.00	11.80	103.03	3,948.08	-117.84	509.23	-4.57	0.00	0.00	0.00	0.00
Hold Angle @ 11.70										
4,088.79	11.80	103.03	4,035.00	-121.93	526.92	-4.73	0.00	0.00	0.00	0.00
Parkman										
4,100.00	11.80	103.03	4,045.97	-122.45	529.15	-4.75	0.00	0.00	0.00	0.00
4,200.00	11.80	103.03	4,143.86	-127.06	549.07	-4.93	0.00	0.00	0.00	0.00
4,300.00	11.80	103.03	4,241.74	-131.67	569.00	-5.11	0.00	0.00	0.00	0.00
4,400.00	11.80	103.03	4,339.63	-136.28	588.92	-5.29	0.00	0.00	0.00	0.00
4,500.00	11.80	103.03	4,437.52	-140.89	608.84	-5.47	0.00	0.00	0.00	0.00
4,600.00	11.80	103.03	4,535.40	-145.50	628.76	-5.65	0.00	0.00	0.00	0.00

Plan Report for Russian Fiddler 37C-18HZ - Plan A Rev 0 Permit

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
4,637.39	11.80	103.03	4,572.00	-147.23	636.21	-5.71	0.00	0.00	0.00	0.00
Sussex										
4,700.00	11.80	103.03	4,633.29	-150.11	648.69	-5.83	0.00	0.00	0.00	0.00
4,800.00	11.80	103.03	4,731.18	-154.72	668.61	-6.00	0.00	0.00	0.00	0.00
4,900.00	11.80	103.03	4,829.06	-159.33	688.53	-6.18	0.00	0.00	0.00	0.00
5,000.00	11.80	103.03	4,926.95	-163.94	708.45	-6.36	0.00	0.00	0.00	0.00
5,100.00	11.80	103.03	5,024.84	-168.55	728.38	-6.54	0.00	0.00	0.00	0.00
5,200.00	11.80	103.03	5,122.72	-173.16	748.30	-6.72	0.00	0.00	0.00	0.00
5,300.00	11.80	103.03	5,220.61	-177.77	768.22	-6.90	0.00	0.00	0.00	0.00
5,400.00	11.80	103.03	5,318.50	-182.38	788.14	-7.08	0.00	0.00	0.00	0.00
5,500.00	11.80	103.03	5,416.38	-186.99	808.07	-7.26	0.00	0.00	0.00	0.00
5,600.00	11.80	103.03	5,514.27	-191.60	827.99	-7.44	0.00	0.00	0.00	0.00
5,700.00	11.80	103.03	5,612.16	-196.21	847.91	-7.61	0.00	0.00	0.00	0.00
5,800.00	11.80	103.03	5,710.05	-200.82	867.83	-7.79	0.00	0.00	0.00	0.00
5,900.00	11.80	103.03	5,807.93	-205.43	887.76	-7.97	0.00	0.00	0.00	0.00
6,000.00	11.80	103.03	5,905.82	-210.04	907.68	-8.15	0.00	0.00	0.00	0.00
6,100.00	11.80	103.03	6,003.71	-214.65	927.60	-8.33	0.00	0.00	0.00	0.00
6,200.00	11.80	103.03	6,101.59	-219.27	947.52	-8.51	0.00	0.00	0.00	0.00
6,300.00	11.80	103.03	6,199.48	-223.88	967.45	-8.69	0.00	0.00	0.00	0.00
6,400.00	11.80	103.03	6,297.37	-228.49	987.37	-8.87	0.00	0.00	0.00	0.00
6,500.00	11.80	103.03	6,395.25	-233.10	1,007.29	-9.05	0.00	0.00	0.00	0.00
6,600.00	11.80	103.03	6,493.14	-237.71	1,027.21	-9.22	0.00	0.00	0.00	0.00
6,700.00	11.80	103.03	6,591.03	-242.32	1,047.14	-9.40	0.00	0.00	0.00	0.00
6,800.00	11.80	103.03	6,688.91	-246.93	1,067.06	-9.58	0.00	0.00	0.00	0.00
6,896.21	11.80	103.03	6,783.09	-251.36	1,086.23	-9.75	0.00	0.00	0.00	0.00
Begin Build @ 6896.21ft										
6,900.00	11.72	101.21	6,786.80	-251.52	1,086.98	-9.75	10.00	-2.19	-47.89	-103.52
7,000.00	13.72	55.42	6,884.58	-246.76	1,106.75	-0.81	10.00	2.00	-45.79	-101.74
7,100.00	20.89	31.33	6,980.11	-224.74	1,125.84	24.83	10.00	7.17	-24.09	-56.96
7,126.85	23.17	27.53	7,005.00	-215.96	1,130.77	34.46	10.00	8.47	-14.18	-33.88
Sharon Springs										
7,200.00	29.70	20.06	7,070.48	-186.14	1,143.66	66.37	10.00	8.93	-10.20	-30.35
7,201.75	29.86	19.92	7,072.00	-185.33	1,143.95	67.23	10.00	9.16	-8.06	-23.66
Niobrara										
7,283.50	37.48	14.57	7,140.00	-142.05	1,157.17	112.34	10.00	9.33	-6.55	-23.54
Niobrara B										
7,300.00	39.05	13.71	7,152.96	-132.14	1,159.66	122.56	10.00	9.47	-5.19	-19.07
Build Rate = 10.00/100ft										
7,374.84	46.20	10.45	7,208.00	-82.61	1,170.16	173.19	10.00	9.56	-4.36	-18.40
Niobrara C										
7,400.00	48.62	9.52	7,225.03	-64.37	1,173.37	191.69	10.00	9.63	-3.67	-15.99
7,500.00	58.31	6.42	7,284.50	15.11	1,184.37	271.66	10.00	9.69	-3.10	-15.37
7,600.00	68.05	3.92	7,329.57	103.88	1,192.32	360.04	10.00	9.75	-2.51	-13.51
7,649.13	72.86	2.82	7,346.00	150.08	1,195.03	405.73	10.00	9.77	-2.24	-12.38
Fort Hays										
7,700.00	77.83	1.73	7,358.87	199.25	1,196.98	454.15	10.00	9.79	-2.13	-12.01
7,747.64	82.50	0.76	7,367.00	246.16	1,197.99	500.17	10.00	9.79	-2.05	-11.74
Codell										
7,800.00	87.63	359.71	7,371.50	298.31	1,198.20	551.12	10.00	9.80	-2.00	-11.57
7,822.70	89.86	359.26	7,372.00	321.00	1,198.00	573.23	10.00	9.80	-1.99	-11.48
End Build @ 7822.70ft - Codell TL (Heel) - 7" Intermediate Casing - Russian Fiddler 37C-18HZ_Casing Point										
7,900.00	89.86	359.26	7,372.19	398.29	1,197.00	648.46	0.00	0.00	0.00	-11.47
8,000.00	89.86	359.26	7,372.45	498.28	1,195.70	745.79	0.00	0.00	0.00	0.00
8,100.00	89.86	359.26	7,372.70	598.28	1,194.41	843.12	0.00	0.00	0.00	0.00
8,200.00	89.86	359.26	7,372.95	698.27	1,193.11	940.45	0.00	0.00	0.00	0.00
8,300.00	89.86	359.26	7,373.20	798.26	1,191.82	1,037.78	0.00	0.00	0.00	0.00
8,400.00	89.86	359.26	7,373.45	898.25	1,190.52	1,135.11	0.00	0.00	0.00	0.00
8,500.00	89.86	359.26	7,373.70	998.24	1,189.22	1,232.44	0.00	0.00	0.00	0.00
8,600.00	89.86	359.26	7,373.96	1,098.23	1,187.93	1,329.77	0.00	0.00	0.00	0.00

Plan Report for Russian Fiddler 37C-18HZ - Plan A Rev 0 Permit

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Tooface Azimuth (°)
8,700.00	89.86	359.26	7,374.21	1,198.22	1,186.63	1,427.10	0.00	0.00	0.00	0.00
8,800.00	89.86	359.26	7,374.46	1,298.22	1,185.34	1,524.43	0.00	0.00	0.00	0.00
8,900.00	89.86	359.26	7,374.71	1,398.21	1,184.04	1,621.76	0.00	0.00	0.00	0.00
9,000.00	89.86	359.26	7,374.96	1,498.20	1,182.74	1,719.08	0.00	0.00	0.00	0.00
9,100.00	89.86	359.26	7,375.21	1,598.19	1,181.45	1,816.41	0.00	0.00	0.00	0.00
9,200.00	89.86	359.26	7,375.47	1,698.18	1,180.15	1,913.74	0.00	0.00	0.00	0.00
9,300.00	89.86	359.26	7,375.72	1,798.17	1,178.86	2,011.07	0.00	0.00	0.00	0.00
9,400.00	89.86	359.26	7,375.97	1,898.16	1,177.56	2,108.40	0.00	0.00	0.00	0.00
9,500.00	89.86	359.26	7,376.22	1,998.15	1,176.27	2,205.73	0.00	0.00	0.00	0.00
9,600.00	89.86	359.26	7,376.47	2,098.15	1,174.97	2,303.06	0.00	0.00	0.00	0.00
9,700.00	89.86	359.26	7,376.72	2,198.14	1,173.67	2,400.39	0.00	0.00	0.00	0.00
9,800.00	89.86	359.26	7,376.97	2,298.13	1,172.38	2,497.72	0.00	0.00	0.00	0.00
9,900.00	89.86	359.26	7,377.23	2,398.12	1,171.08	2,595.05	0.00	0.00	0.00	0.00
10,000.00	89.86	359.26	7,377.48	2,498.11	1,169.79	2,692.38	0.00	0.00	0.00	0.00
Hold Angle @ 89.86										
10,100.00	89.86	359.26	7,377.73	2,598.10	1,168.49	2,789.71	0.00	0.00	0.00	0.00
10,200.00	89.86	359.26	7,377.98	2,698.09	1,167.20	2,887.04	0.00	0.00	0.00	0.00
10,300.00	89.86	359.26	7,378.23	2,798.08	1,165.90	2,984.37	0.00	0.00	0.00	0.00
10,400.00	89.86	359.26	7,378.48	2,898.08	1,164.60	3,081.70	0.00	0.00	0.00	0.00
10,500.00	89.86	359.26	7,378.74	2,998.07	1,163.31	3,179.03	0.00	0.00	0.00	0.00
10,600.00	89.86	359.26	7,378.99	3,098.06	1,162.01	3,276.35	0.00	0.00	0.00	0.00
10,700.00	89.86	359.26	7,379.24	3,198.05	1,160.72	3,373.68	0.00	0.00	0.00	0.00
10,800.00	89.86	359.26	7,379.49	3,298.04	1,159.42	3,471.01	0.00	0.00	0.00	0.00
10,900.00	89.86	359.26	7,379.74	3,398.03	1,158.12	3,568.34	0.00	0.00	0.00	0.00
11,000.00	89.86	359.26	7,379.99	3,498.02	1,156.83	3,665.67	0.00	0.00	0.00	0.00
11,100.00	89.86	359.26	7,380.25	3,598.01	1,155.53	3,763.00	0.00	0.00	0.00	0.00
11,200.00	89.86	359.26	7,380.50	3,698.01	1,154.24	3,860.33	0.00	0.00	0.00	0.00
11,300.00	89.86	359.26	7,380.75	3,798.00	1,152.94	3,957.66	0.00	0.00	0.00	0.00
11,400.00	89.86	359.26	7,381.00	3,897.99	1,151.65	4,054.99	0.00	0.00	0.00	0.00
11,500.00	89.86	359.26	7,381.25	3,997.98	1,150.35	4,152.32	0.00	0.00	0.00	0.00
11,527.02	89.86	359.26	7,381.32	4,025.00	1,150.00	4,178.62	0.00	0.00	0.00	0.00
Begin Turn @ 11527.02ft - Russian Fiddler 37C-18HZ_WP										
11,600.00	89.86	0.72	7,381.50	4,097.98	1,149.98	4,249.85	2.00	0.00	2.00	90.01
11,700.00	89.86	2.72	7,381.76	4,197.92	1,152.98	4,348.07	2.00	0.00	2.00	90.00
11,710.68	89.86	2.93	7,381.78	4,208.59	1,153.51	4,358.60	2.00	0.00	2.00	90.00
End Turn @ 11710.68ft										
11,800.00	89.86	2.93	7,382.01	4,297.79	1,158.07	4,446.67	0.00	0.00	0.00	90.00
11,900.00	89.86	2.93	7,382.26	4,397.66	1,163.19	4,545.27	0.00	0.00	0.00	0.00
12,000.00	89.86	2.93	7,382.51	4,497.53	1,168.30	4,643.87	0.00	0.00	0.00	0.00
12,100.00	89.86	2.93	7,382.76	4,597.40	1,173.41	4,742.47	0.00	0.00	0.00	0.00
12,200.00	89.86	2.93	7,383.01	4,697.27	1,178.53	4,841.07	0.00	0.00	0.00	0.00
12,300.00	89.86	2.93	7,383.27	4,797.14	1,183.64	4,939.67	0.00	0.00	0.00	0.00
12,400.00	89.86	2.93	7,383.52	4,897.01	1,188.75	5,038.27	0.00	0.00	0.00	0.00
12,500.00	89.86	2.93	7,383.77	4,996.88	1,193.86	5,136.87	0.00	0.00	0.00	0.00
12,600.00	89.86	2.93	7,384.02	5,096.75	1,198.98	5,235.47	0.00	0.00	0.00	0.00
12,700.00	89.86	2.93	7,384.27	5,196.61	1,204.09	5,334.07	0.00	0.00	0.00	0.00
12,800.00	89.86	2.93	7,384.52	5,296.48	1,209.20	5,432.67	0.00	0.00	0.00	0.00
12,900.00	89.86	2.93	7,384.78	5,396.35	1,214.32	5,531.27	0.00	0.00	0.00	0.00
12,984.94	89.86	2.93	7,384.99	5,481.18	1,218.66	5,615.02	0.00	0.00	0.00	0.00
Codell TL (Toe)										
12,988.97	89.86	2.93	7,385.00	5,485.21	1,218.86	5,619.00	0.00	0.00	0.00	0.00
Total Depth @ 12988.97ft - Russian Fiddler 37C-18HZ_BHL										

Plan Report for Russian Fiddler 37C-18HZ - Plan A Rev 0 Permit**Plan Annotations**

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
0.00	0.00	0.00	0.00	Tie-On to Surface @ 0.00ft
600.00	600.00	0.00	0.00	Hold Angle @ 0.00
1,150.00	1,150.00	0.00	0.00	Begin Nudge @ 1150.00ft
1,600.00	1,598.15	-7.95	34.36	Nudge Rate = 2.00/100ft
1,739.98	1,735.82	-13.65	58.98	End Nudge @ 1739.98ft
4,000.00	3,948.08	-117.84	509.23	Hold Angle @ 11.70
6,896.21	6,783.09	-251.36	1,086.23	Begin Build @ 6896.21ft
7,300.00	7,152.96	-132.14	1,159.66	Build Rate = 10.00/100ft
7,822.70	7,372.00	321.00	1,198.00	End Build @ 7822.70ft
10,000.00	7,377.48	2,498.11	1,169.79	Hold Angle @ 89.86
11,527.02	7,381.32	4,025.00	1,150.00	Begin Turn @ 11527.02ft
11,710.68	7,381.78	4,208.59	1,153.51	End Turn @ 11710.68ft
12,988.97	7,385.00	5,485.21	1,218.86	Total Depth @ 12988.97ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/-S (ft)	+E/-W (ft)	
Target	Russian Fiddler 37C-18HZ_BHL	12.53	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	12,988.97	Plan A Rev 0 Permit	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,822.70	7,372.00	7" Intermediate Casing	7	8-3/4

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,088.79	4,035.00	Parkman		0.00	
4,637.39	4,572.00	Sussex		0.00	
7,126.85	7,005.00	Sharon Springs		0.00	
7,201.75	7,072.00	Niobrara		0.00	
7,283.50	7,140.00	Niobrara B		0.00	
7,374.84	7,208.00	Niobrara C		0.00	
7,649.13	7,346.00	Fort Hays		0.00	
7,747.64	7,367.00	Codell		0.00	
7,822.70	7,372.00	Codell TL (Heel)		0.00	
12,984.94	7,384.99	Codell TL (Toe)		0.00	

Plan Report for Russian Fiddler 37C-18HZ - Plan A Rev 0 Permit*Targets associated with this wellbore*

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Russian Fiddler 37C-18HZ_Casing Point	7,372.00	321.00	1,198.00	Point
Russian Fiddler 37C-18HZ_WP	7,381.32	4,025.00	1,150.00	Point
Russian Fiddler 37C-18HZ_Setback Line	0.00	0.00	0.00	Polygon
Russian Fiddler 37C-18HZ_SHL	0.00	0.00	0.00	Point
Dechant USX X 1	0.00	4,033.76	1,343.54	Circle
Russian Fiddler 37C-18HZ_Section Line	0.00	0.00	0.00	Polygon
Russian Fiddler 37C-18HZ_BHL	7,385.00	5,485.21	1,218.87	Point

**North Reference Sheet for Sec. 19-T2N-65W - Russian Fiddler 37C-18HZ - Plan A
Rev 0**

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.
Vertical Depths are relative to RKB=17ft @ 5006.00ft (Drilling Rig). Northing and Easting are relative to Russian Fiddler 37C-18HZ
Coordinate System is US State Plane 1983, Colorado Northern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)
Central Meridian is -105.50°, Longitude Origin:0.000000°, Latitude Origin:40.783333°
False Easting: 3,000,000.000644ft, False Northing: 1,000,000.001308ft, Scale Reduction: 0.99995954

Grid Coordinates of Well: 1,286,645.749957 ft N, 3,222,029.137927 ft E
Geographical Coordinates of Well: 40° 07' 03.03" N, 104° 42' 21.94" W
Grid Convergence at Surface is: 0.51°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,988.97ft
the Bottom Hole Displacement is 5,619.00ft in the Direction of 12.53° (True).

Magnetic Convergence at surface is: -8.15° (29 June 2012, , BGGM2011)

