

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 19-T2N-65W

Russian Fiddler 37N-18HZ

Plan A Rev 0

Plan: Plan A Rev 0 Permit

Sperry Drilling Services

Proposal Report

29 June, 2012

Well Coordinates: 1,286,675.98 N, 3,222,028.87 E (40° 07' 03.32" N, 104° 42' 21.94" W)

Ground Level: 4,989.00 ft

Local Coordinate Origin: Centered on Well Russian Fiddler 37N-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 37N-18HZ
 Wellbore: Plan A Rev 0
 Design: Plan A Rev 0 Permit

Anadarko Petroleum Corp.

HALLIBURTON
 Sperry Drilling

SECTION DETAILS

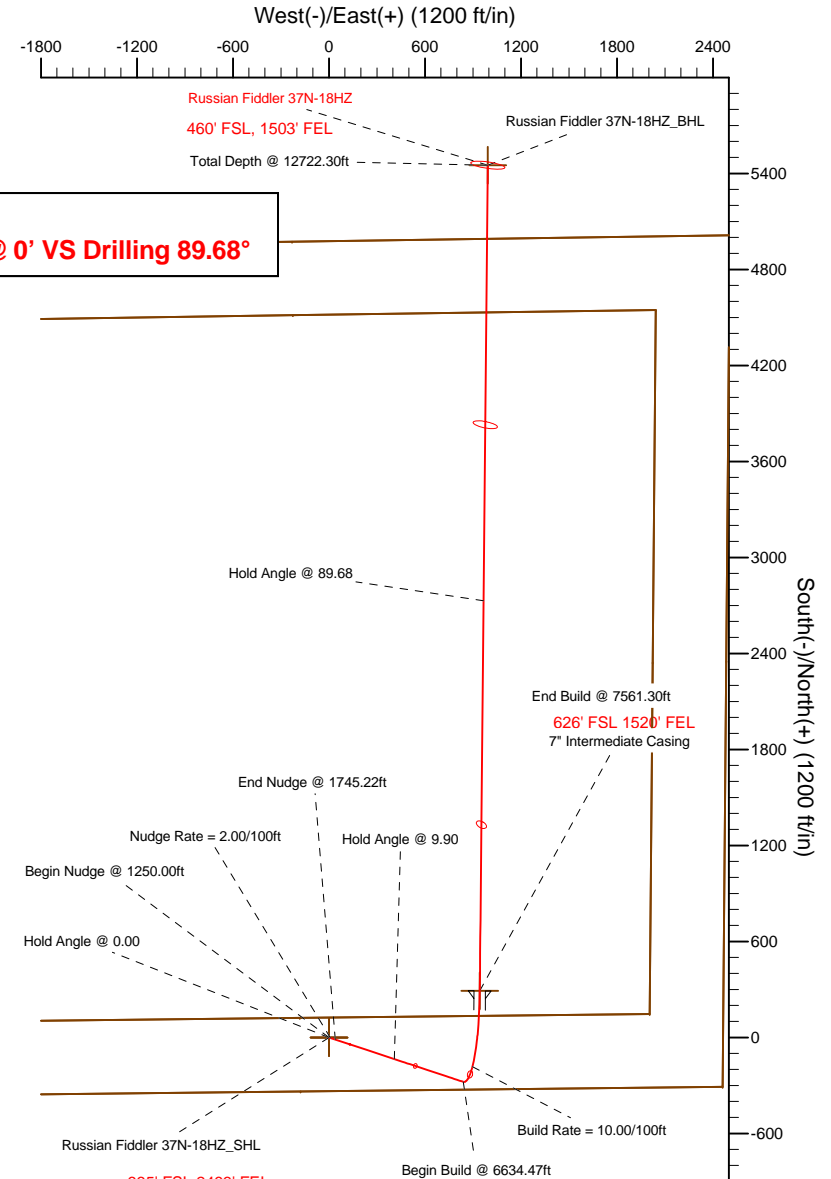
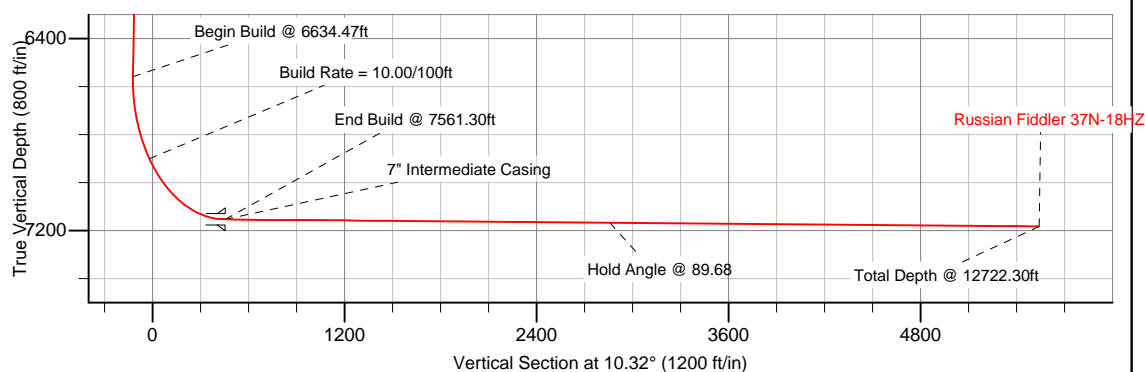
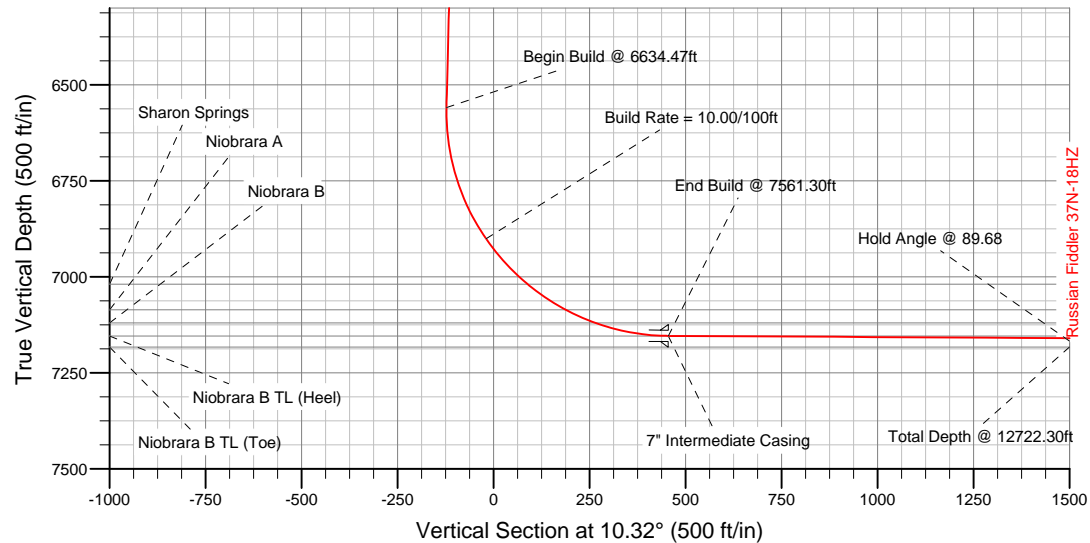
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1250.00	0.00	0.00	1250.00	0.00	0.00	0.00	0.00	0.00	
3	1745.22	9.90	108.27	1742.75	-13.38	40.54	2.00	108.27	-5.90	
4	6634.47	9.90	108.27	6559.14	-277.02	839.12	0.00	0.00	-122.18	
5	7561.30	89.68	0.55	7154.00	291.00	943.00	10.00	-107.52	455.26	Russian Fiddler 37N-18HZ_Casing Point
6	12722.30	89.68	0.55	7183.00	5451.68	992.93	0.00	0.00	5541.37	Russian Fiddler 37N-18HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Russian Fiddler 37N-18HZ_Section Lines	0.00	0.00	0.00	40.117590	-104.706095	Polygon
Russian Fiddler 37N-18HZ_Setback Lines	0.00	0.00	0.00	40.117590	-104.706095	Polygon
Russian Fiddler 37N-18HZ_SHL	0.00	0.00	0.00	40.117590	-104.706095	Point
Russian Fiddler 37N-18HZ_Casing Point	7154.00	291.00	943.00	40.118389	-104.702723	Point
Russian Fiddler 37N-18HZ_BHL	7183.00	5451.68	992.93	40.132555	-104.702544	Point

Target Line:

7152.05' TVDkb @ 0' VS Drilling 89.68°



WELL DETAILS: Russian Fiddler 37N-18HZ

Ground Level: 4989.00 RKB=17ft @ 5006.00ft (Drilling Rig)

Plan: Plan A Rev 0 Permit (Russian Fiddler 37N-18HZ/Plan A Rev 0)

Created By: Fred Hartmann Date: 06/28/2012
 Reviewed: _____ Date: _____

Plan Report for Russian Fiddler 37N-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 - Russian Fiddler 37N-18HZ_SHL - Russian Fiddler 37N-18HZ_Section Lines - Russian Fiddler 37N-18										
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
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,250.00	0.00	0.00	1,250.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 1250.00ft										
1,300.00	1.00	108.27	1,300.00	-0.14	0.41	-0.06	2.00	2.00	0.00	108.27
1,400.00	3.00	108.27	1,399.93	-1.23	3.73	-0.54	2.00	2.00	0.00	0.00
1,500.00	5.00	108.27	1,499.68	-3.42	10.35	-1.51	2.00	2.00	0.00	0.00
Nudge Rate = 2.00/100ft										
1,600.00	7.00	108.27	1,599.13	-6.69	20.28	-2.95	2.00	2.00	0.00	0.00
1,700.00	9.00	108.27	1,698.15	-11.06	33.49	-4.88	2.00	2.00	0.00	0.00
1,745.22	9.90	108.27	1,742.76	-13.38	40.54	-5.90	2.00	2.00	0.00	0.00
End Nudge @ 1745.22ft										
1,800.00	9.90	108.27	1,796.72	-16.34	49.49	-7.21	0.00	0.00	0.00	0.00
1,900.00	9.90	108.27	1,895.23	-21.73	65.82	-9.58	0.00	0.00	0.00	0.00
2,000.00	9.90	108.27	1,993.74	-27.12	82.16	-11.96	0.00	0.00	0.00	0.00
2,100.00	9.90	108.27	2,092.25	-32.51	98.49	-14.34	0.00	0.00	0.00	0.00
2,200.00	9.90	108.27	2,190.76	-37.91	114.82	-16.72	0.00	0.00	0.00	0.00
2,300.00	9.90	108.27	2,289.27	-43.30	131.16	-19.10	0.00	0.00	0.00	0.00
2,400.00	9.90	108.27	2,387.78	-48.69	147.49	-21.47	0.00	0.00	0.00	0.00
2,500.00	9.90	108.27	2,486.29	-54.08	163.82	-23.85	0.00	0.00	0.00	0.00
2,600.00	9.90	108.27	2,584.80	-59.48	180.16	-26.23	0.00	0.00	0.00	0.00
2,700.00	9.90	108.27	2,683.31	-64.87	196.49	-28.61	0.00	0.00	0.00	0.00
2,800.00	9.90	108.27	2,781.82	-70.26	212.82	-30.99	0.00	0.00	0.00	0.00
2,900.00	9.90	108.27	2,880.33	-75.65	229.16	-33.37	0.00	0.00	0.00	0.00
3,000.00	9.90	108.27	2,978.84	-81.04	245.49	-35.74	0.00	0.00	0.00	0.00
3,100.00	9.90	108.27	3,077.35	-86.44	261.82	-38.12	0.00	0.00	0.00	0.00
3,200.00	9.90	108.27	3,175.86	-91.83	278.16	-40.50	0.00	0.00	0.00	0.00
3,300.00	9.90	108.27	3,274.37	-97.22	294.49	-42.88	0.00	0.00	0.00	0.00
3,400.00	9.90	108.27	3,372.88	-102.61	310.82	-45.26	0.00	0.00	0.00	0.00
3,500.00	9.90	108.27	3,471.38	-108.00	327.16	-47.63	0.00	0.00	0.00	0.00
3,600.00	9.90	108.27	3,569.89	-113.40	343.49	-50.01	0.00	0.00	0.00	0.00
3,700.00	9.90	108.27	3,668.40	-118.79	359.82	-52.39	0.00	0.00	0.00	0.00
3,800.00	9.90	108.27	3,766.91	-124.18	376.16	-54.77	0.00	0.00	0.00	0.00
3,900.00	9.90	108.27	3,865.42	-129.57	392.49	-57.15	0.00	0.00	0.00	0.00
4,000.00	9.90	108.27	3,963.93	-134.96	408.82	-59.52	0.00	0.00	0.00	0.00
Hold Angle @ 9.90										
4,086.35	9.90	108.27	4,049.00	-139.62	422.93	-61.58	0.00	0.00	0.00	0.00
Parkman										
4,100.00	9.90	108.27	4,062.44	-140.36	425.16	-61.90	0.00	0.00	0.00	0.00
4,200.00	9.90	108.27	4,160.95	-145.75	441.49	-64.28	0.00	0.00	0.00	0.00
4,300.00	9.90	108.27	4,259.46	-151.14	457.82	-66.66	0.00	0.00	0.00	0.00
4,400.00	9.90	108.27	4,357.97	-156.53	474.16	-69.04	0.00	0.00	0.00	0.00
4,500.00	9.90	108.27	4,456.48	-161.93	490.49	-71.42	0.00	0.00	0.00	0.00
4,600.00	9.90	108.27	4,554.99	-167.32	506.82	-73.79	0.00	0.00	0.00	0.00

Plan Report for Russian Fiddler 37N-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 (°)
4,631.48	9.90	108.27	4,586.00	-169.01	511.97	-74.54	0.00	0.00	0.00	0.00
Sussex										
4,700.00	9.90	108.27	4,653.50	-172.71	523.16	-76.17	0.00	0.00	0.00	0.00
4,800.00	9.90	108.27	4,752.01	-178.10	539.49	-78.55	0.00	0.00	0.00	0.00
4,900.00	9.90	108.27	4,850.52	-183.49	555.82	-80.93	0.00	0.00	0.00	0.00
5,000.00	9.90	108.27	4,949.03	-188.89	572.16	-83.31	0.00	0.00	0.00	0.00
5,100.00	9.90	108.27	5,047.54	-194.28	588.49	-85.68	0.00	0.00	0.00	0.00
5,200.00	9.90	108.27	5,146.05	-199.67	604.82	-88.06	0.00	0.00	0.00	0.00
5,300.00	9.90	108.27	5,244.56	-205.06	621.16	-90.44	0.00	0.00	0.00	0.00
5,400.00	9.90	108.27	5,343.07	-210.45	637.49	-92.82	0.00	0.00	0.00	0.00
5,500.00	9.90	108.27	5,441.58	-215.85	653.82	-95.20	0.00	0.00	0.00	0.00
5,600.00	9.90	108.27	5,540.09	-221.24	670.16	-97.58	0.00	0.00	0.00	0.00
5,700.00	9.90	108.27	5,638.60	-226.63	686.49	-99.95	0.00	0.00	0.00	0.00
5,800.00	9.90	108.27	5,737.11	-232.02	702.82	-102.33	0.00	0.00	0.00	0.00
5,900.00	9.90	108.27	5,835.62	-237.41	719.16	-104.71	0.00	0.00	0.00	0.00
6,000.00	9.90	108.27	5,934.13	-242.81	735.49	-107.09	0.00	0.00	0.00	0.00
6,100.00	9.90	108.27	6,032.64	-248.20	751.82	-109.47	0.00	0.00	0.00	0.00
6,200.00	9.90	108.27	6,131.14	-253.59	768.16	-111.84	0.00	0.00	0.00	0.00
6,300.00	9.90	108.27	6,229.65	-258.98	784.49	-114.22	0.00	0.00	0.00	0.00
6,400.00	9.90	108.27	6,328.16	-264.37	800.82	-116.60	0.00	0.00	0.00	0.00
6,500.00	9.90	108.27	6,426.67	-269.77	817.16	-118.98	0.00	0.00	0.00	0.00
6,600.00	9.90	108.27	6,525.18	-275.16	833.49	-121.36	0.00	0.00	0.00	0.00
6,634.47	9.90	108.27	6,559.14	-277.02	839.12	-122.18	0.00	0.00	0.00	0.00
Begin Build @ 6634.47ft										
6,700.00	10.08	69.82	6,623.75	-276.81	849.86	-120.04	10.00	0.27	-58.68	-107.52
6,800.00	16.46	34.75	6,721.17	-262.11	866.19	-102.66	10.00	6.38	-35.06	-69.61
6,900.00	25.27	21.13	6,814.58	-230.49	882.00	-68.71	10.00	8.81	-13.62	-35.38
7,000.00	34.70	14.40	6,901.12	-182.89	896.81	-19.24	10.00	9.43	-6.73	-22.60
Build Rate = 10.00/100ft										
7,100.00	44.35	10.29	6,978.18	-120.77	910.16	44.27	10.00	9.66	-4.10	-16.75
7,160.20	50.22	8.46	7,019.00	-77.15	917.33	88.47	10.00	9.75	-3.05	-13.57
Sharon Springs										
7,200.00	54.11	7.41	7,043.41	-46.02	921.66	119.87	10.00	9.78	-2.63	-12.32
7,280.59	62.02	5.57	7,086.00	21.88	929.34	188.05	10.00	9.81	-2.29	-11.68
Niobrara A										
7,300.00	63.93	5.17	7,094.82	39.10	930.96	205.28	10.00	9.83	-2.07	-10.70
7,364.79	70.30	3.91	7,120.00	98.57	935.66	264.63	10.00	9.84	-1.94	-10.52
Niobrara B										
7,400.00	73.77	3.27	7,130.86	131.99	937.76	297.89	10.00	9.85	-1.81	-10.03
7,500.00	83.63	1.56	7,150.42	229.84	941.87	394.89	10.00	9.86	-1.71	-9.84
7,561.30	89.68	0.55	7,154.00	291.00	943.00	455.26	10.00	9.86	-1.65	-9.50
End Build @ 7561.30ft - Niobrara B TL (Heel) - 7" Intermediate Casing - Russian Fiddler 37N-18HZ_Casing Point										
7,600.00	89.68	0.55	7,154.22	329.70	943.37	493.40	0.00	0.00	0.00	-9.44
7,700.00	89.68	0.55	7,154.78	429.69	944.34	591.95	0.00	0.00	0.00	0.00
7,800.00	89.68	0.55	7,155.34	529.69	945.31	690.50	0.00	0.00	0.00	0.00
7,900.00	89.68	0.55	7,155.90	629.68	946.28	789.05	0.00	0.00	0.00	0.00
8,000.00	89.68	0.55	7,156.47	729.67	947.24	887.60	0.00	0.00	0.00	0.00
8,100.00	89.68	0.55	7,157.03	829.67	948.21	986.14	0.00	0.00	0.00	0.00
8,200.00	89.68	0.55	7,157.59	929.66	949.18	1,084.69	0.00	0.00	0.00	0.00
8,300.00	89.68	0.55	7,158.15	1,029.65	950.15	1,183.24	0.00	0.00	0.00	0.00
8,400.00	89.68	0.55	7,158.71	1,129.65	951.11	1,281.79	0.00	0.00	0.00	0.00
8,500.00	89.68	0.55	7,159.27	1,229.64	952.08	1,380.34	0.00	0.00	0.00	0.00
8,600.00	89.68	0.55	7,159.84	1,329.64	953.05	1,478.89	0.00	0.00	0.00	0.00
8,700.00	89.68	0.55	7,160.40	1,429.63	954.02	1,577.44	0.00	0.00	0.00	0.00
8,800.00	89.68	0.55	7,160.96	1,529.62	954.98	1,675.99	0.00	0.00	0.00	0.00
8,900.00	89.68	0.55	7,161.52	1,629.62	955.95	1,774.53	0.00	0.00	0.00	0.00
9,000.00	89.68	0.55	7,162.08	1,729.61	956.92	1,873.08	0.00	0.00	0.00	0.00
9,100.00	89.68	0.55	7,162.65	1,829.60	957.89	1,971.63	0.00	0.00	0.00	0.00
9,200.00	89.68	0.55	7,163.21	1,929.60	958.85	2,070.18	0.00	0.00	0.00	0.00

Plan Report for Russian Fiddler 37N-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 (°)
9,300.00	89.68	0.55	7,163.77	2,029.59	959.82	2,168.73	0.00	0.00	0.00	0.00
9,400.00	89.68	0.55	7,164.33	2,129.59	960.79	2,267.28	0.00	0.00	0.00	0.00
9,500.00	89.68	0.55	7,164.89	2,229.58	961.76	2,365.83	0.00	0.00	0.00	0.00
9,600.00	89.68	0.55	7,165.46	2,329.57	962.72	2,464.38	0.00	0.00	0.00	0.00
9,700.00	89.68	0.55	7,166.02	2,429.57	963.69	2,562.92	0.00	0.00	0.00	0.00
9,800.00	89.68	0.55	7,166.58	2,529.56	964.66	2,661.47	0.00	0.00	0.00	0.00
9,900.00	89.68	0.55	7,167.14	2,629.55	965.63	2,760.02	0.00	0.00	0.00	0.00
10,000.00	89.68	0.55	7,167.70	2,729.55	966.59	2,858.57	0.00	0.00	0.00	0.00
Hold Angle @ 89.68										
10,100.00	89.68	0.55	7,168.27	2,829.54	967.56	2,957.12	0.00	0.00	0.00	0.00
10,200.00	89.68	0.55	7,168.83	2,929.54	968.53	3,055.67	0.00	0.00	0.00	0.00
10,300.00	89.68	0.55	7,169.39	3,029.53	969.50	3,154.22	0.00	0.00	0.00	0.00
10,400.00	89.68	0.55	7,169.95	3,129.52	970.46	3,252.77	0.00	0.00	0.00	0.00
10,500.00	89.68	0.55	7,170.51	3,229.52	971.43	3,351.31	0.00	0.00	0.00	0.00
10,600.00	89.68	0.55	7,171.07	3,329.51	972.40	3,449.86	0.00	0.00	0.00	0.00
10,700.00	89.68	0.55	7,171.64	3,429.50	973.37	3,548.41	0.00	0.00	0.00	0.00
10,800.00	89.68	0.55	7,172.20	3,529.50	974.33	3,646.96	0.00	0.00	0.00	0.00
10,900.00	89.68	0.55	7,172.76	3,629.49	975.30	3,745.51	0.00	0.00	0.00	0.00
11,000.00	89.68	0.55	7,173.32	3,729.49	976.27	3,844.06	0.00	0.00	0.00	0.00
11,100.00	89.68	0.55	7,173.88	3,829.48	977.24	3,942.61	0.00	0.00	0.00	0.00
11,200.00	89.68	0.55	7,174.45	3,929.47	978.20	4,041.16	0.00	0.00	0.00	0.00
11,300.00	89.68	0.55	7,175.01	4,029.47	979.17	4,139.70	0.00	0.00	0.00	0.00
11,400.00	89.68	0.55	7,175.57	4,129.46	980.14	4,238.25	0.00	0.00	0.00	0.00
11,500.00	89.68	0.55	7,176.13	4,229.45	981.11	4,336.80	0.00	0.00	0.00	0.00
11,600.00	89.68	0.55	7,176.69	4,329.45	982.07	4,435.35	0.00	0.00	0.00	0.00
11,700.00	89.68	0.55	7,177.26	4,429.44	983.04	4,533.90	0.00	0.00	0.00	0.00
11,800.00	89.68	0.55	7,177.82	4,529.44	984.01	4,632.45	0.00	0.00	0.00	0.00
11,900.00	89.68	0.55	7,178.38	4,629.43	984.98	4,731.00	0.00	0.00	0.00	0.00
12,000.00	89.68	0.55	7,178.94	4,729.42	985.94	4,829.55	0.00	0.00	0.00	0.00
12,100.00	89.68	0.55	7,179.50	4,829.42	986.91	4,928.09	0.00	0.00	0.00	0.00
12,200.00	89.68	0.55	7,180.07	4,929.41	987.88	5,026.64	0.00	0.00	0.00	0.00
12,300.00	89.68	0.55	7,180.63	5,029.40	988.85	5,125.19	0.00	0.00	0.00	0.00
12,400.00	89.68	0.55	7,181.19	5,129.40	989.81	5,223.74	0.00	0.00	0.00	0.00
12,500.00	89.68	0.55	7,181.75	5,229.39	990.78	5,322.29	0.00	0.00	0.00	0.00
12,600.00	89.68	0.55	7,182.31	5,329.39	991.75	5,420.84	0.00	0.00	0.00	0.00
12,700.00	89.68	0.55	7,182.87	5,429.38	992.72	5,519.39	0.00	0.00	0.00	0.00
12,722.30	89.68	0.55	7,183.00	5,451.68	992.93	5,541.36	0.00	0.00	0.00	0.00
Total Depth @ 12722.30ft - Russian Fiddler 37N-18HZ_BHL										

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
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
1,250.00	1,250.00	0.00	0.00	Begin Nudge @ 1250.00ft
1,500.00	1,499.68	-3.42	10.35	Nudge Rate = 2.00/100ft
1,745.22	1,742.76	-13.38	40.54	End Nudge @ 1745.22ft
4,000.00	3,963.93	-134.96	408.82	Hold Angle @ 9.90
6,634.47	6,559.14	-277.02	839.12	Begin Build @ 6634.47ft
7,000.00	6,901.12	-182.89	896.81	Build Rate = 10.00/100ft
7,561.30	7,154.00	291.00	943.00	End Build @ 7561.30ft
10,000.00	7,167.70	2,729.55	966.59	Hold Angle @ 89.68
12,722.30	7,183.00	5,451.68	992.93	Total Depth @ 12722.30ft

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

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (ft)	Origin +E/-W (ft)	Start TVD (ft)
Target	Russian Fiddler 37N-18HZ_BHL	10.32	Slot	0.00	0.00	7,183.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	12,722.30	Plan A Rev 0 Permit	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,561.30	7,154.00	7" Intermediate Casing	7	8-3/4

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,086.35	4,049.00	Parkman		0.00	
4,631.48	4,586.00	Sussex		0.00	
7,160.20	7,019.00	Sharon Springs		0.00	
7,280.59	7,086.00	Niobrara A		0.00	
7,364.79	7,120.00	Niobrara B		0.00	
7,561.30	7,154.00	Niobrara B TL (Heel)		0.00	
12,722.30	7,183.00	Niobrara B TL (Toe)		0.00	

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Russian Fiddler 37N-18HZ_Section Lines	0.00	0.00	0.00	Polygon
Russian Fiddler 37N-18HZ_Casing Point	7,154.00	291.00	943.00	Point
Russian Fiddler 37N-18HZ_BHL	7,183.00	5,451.68	992.93	Point
Russian Fiddler 37N-18HZ_Setback Lines	0.00	0.00	0.00	Polygon
Russian Fiddler 37N-18HZ_SHL	0.00	0.00	0.00	Point

North Reference Sheet for Sec. 19-T2N-65W - Russian Fiddler 37N-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 37N-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: 0.99995953

Grid Coordinates of Well: 1,286,675.983886 ft N, 3,222,028.867235 ft E
 Geographical Coordinates of Well: 40° 07' 03.32" N, 104° 42' 21.94" W
 Grid Convergence at Surface is: 0.51°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,722.30ft
 the Bottom Hole Displacement is 5,541.36ft in the Direction of 10.32° (True).

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

