

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 23-T2N-R66W

Turkey Springs 3C-14HZ

Plan A 0

Plan: Plan A 0 - PROPOSAL

Sperry Drilling Services

Proposal Report

10 June, 2013

Well Coordinates: 1,290,707.54 N, 3,211,732.67 E (40° 07' 44.05" N, 104° 44' 34.03" W)

Ground Level: 5,154.00 ft

Local Coordinate Origin: Centered on Well Turkey Springs 3C-14HZ

Viewing Datum: RKB=25 @ 5179.00ft (H&P 308)

TVDs to System: N

North Reference: True

Unit System: API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 2003.16 Build: 431

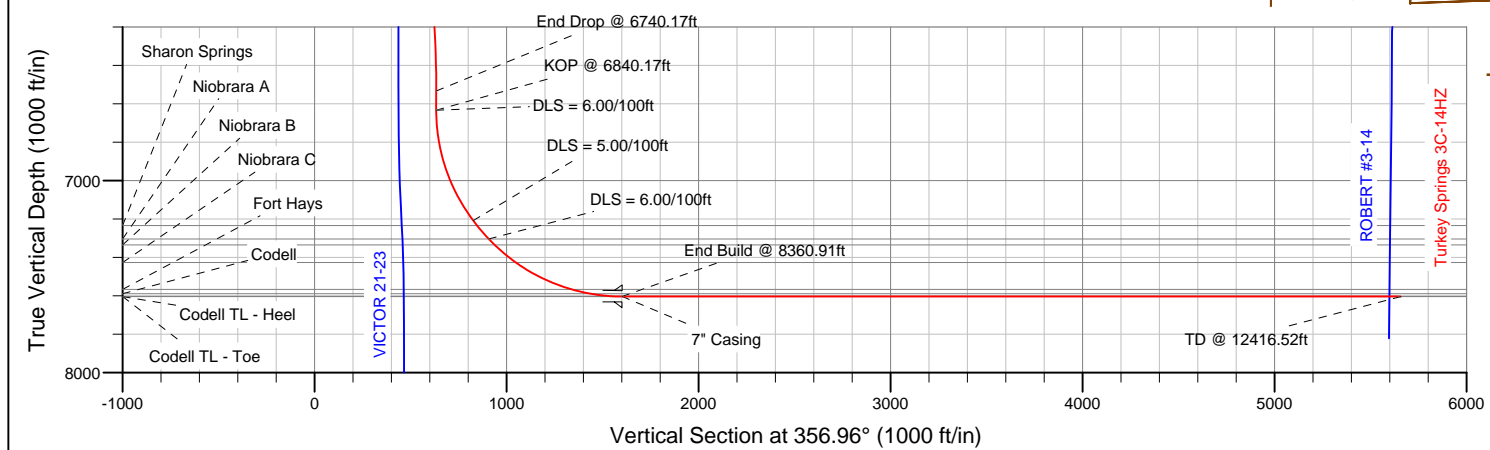
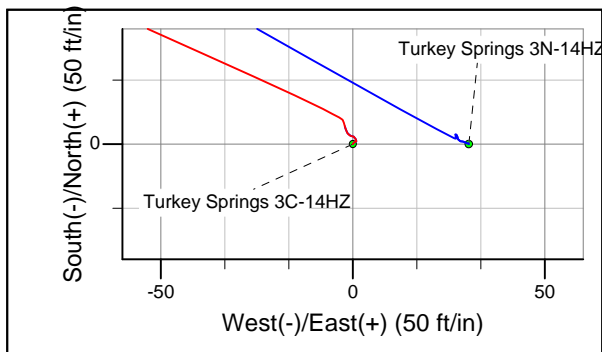
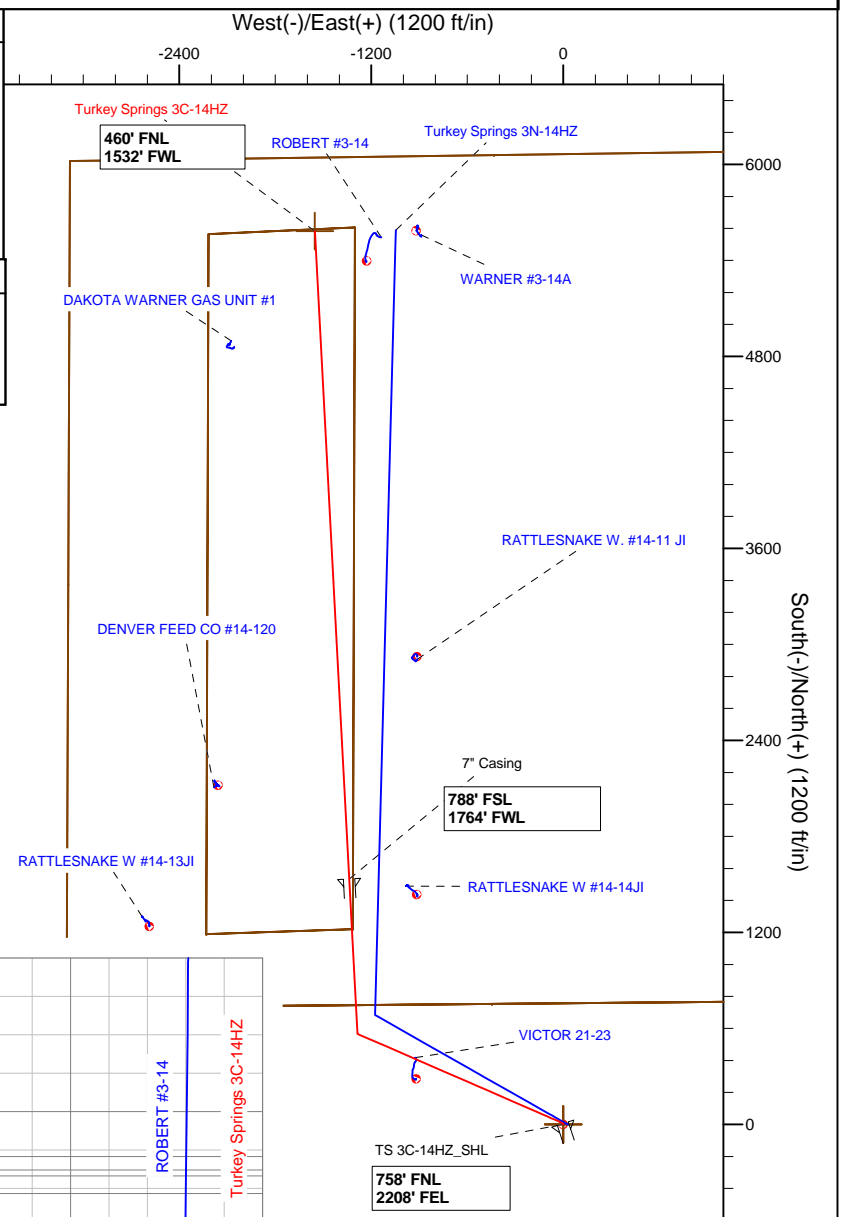
HALLIBURTON

Project: Weld County, CO (NAD 83)
 Site: Sec. 23-T2N-R66W
 Well: Turkey Springs 3C-14HZ
 Wellbore: Plan A 0
 Design: Plan A 0 - PROPOSAL



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	1025.00	0.31	342.14	1024.97	4.66	-2.06	0.00	0.00	4.76	
2	1325.00	0.31	342.14	1324.97	6.20	-2.55	0.00	0.00	6.33	
3	2214.83	18.00	293.50	2200.06	63.78	-130.40	2.00	-49.36	70.60	
4	5840.17	18.00	293.50	5647.97	510.49	-1157.78	0.00	0.00	571.18	
5	6740.17	0.00	0.00	6533.24	566.40	-1286.36	2.00	180.00	633.83	
6	6840.17	0.00	0.00	6633.23	566.40	-1286.36	0.00	0.00	633.83	
7	7458.18	37.08	356.96	7209.00	759.23	-1296.60	6.00	356.96	826.93	
8	7582.61	43.30	356.96	7304.00	839.38	-1300.86	5.00	0.00	907.18	
9	8360.91	90.00	356.96	7604.00	1533.34	-1337.74	6.00	0.00	1602.13	
10	12416.52	90.00	356.96	7604.00	5583.24	-1553.03	0.00	0.00	5657.74	TS 3C-14HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TS 3C-14HZ_LD	0.00	0.00	0.00	40.128904	-104.742786	Polygon
TS 3C-14HZ_Sec	0.00	0.00	0.00	40.128904	-104.742786	Polygon
TS 3C-14HZ_SHL	0.00	0.00	0.00	40.128904	-104.742786	Point
TS 3C-14HZ_BHL	7604.00	5583.24	-1553.03	40.144230	-104.748341	Point



WELL DETAILS: Turkey Springs 3C-14HZ	
Ground Level:	5154.00
RKB=25 @ 5179.00ft (H&P 308)	
Plan: Plan A 0 - PROPOSAL (Turkey Springs 3C-14HZ/Plan A 0)	
Created By: Fred Hartmann Date: 06/10/2013	

Plan Report for Turkey Springs 3C-14HZ - Plan A 0 - PROPOSAL

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 (°)
1,025.00	0.31	342.14	1,024.97	4.66	-2.06	4.76	0.00	0.00	0.00	0.00
Tie-On to Surface Gyros @ 1025.00ft										
1,072.40	0.31	342.14	1,072.37	4.90	-2.13	5.01	0.00	0.00	0.00	0.00
9 5/8" Casing										
1,100.00	0.31	342.14	1,099.97	5.04	-2.18	5.15	0.00	0.00	0.00	0.00
1,200.00	0.31	342.14	1,199.97	5.56	-2.35	5.67	0.00	0.00	0.00	0.00
1,300.00	0.31	342.14	1,299.97	6.07	-2.51	6.20	0.00	0.00	0.00	0.00
1,325.00	0.31	342.14	1,324.97	6.20	-2.55	6.33	0.00	0.00	0.00	0.00
Begin Nudge @ 1325.00ft										
1,400.00	1.72	300.64	1,399.95	6.97	-3.58	7.15	2.00	1.88	-55.33	-49.36
1,500.00	3.71	296.41	1,499.84	9.17	-7.77	9.57	2.00	1.99	-4.24	-7.87
1,600.00	5.71	295.13	1,599.49	12.72	-15.17	13.51	2.00	2.00	-1.28	-3.64
1,700.00	7.71	294.51	1,698.81	17.61	-25.77	18.96	2.00	2.00	-0.62	-2.37
1,800.00	9.70	294.15	1,797.65	23.84	-39.56	25.91	2.00	2.00	-0.36	-1.75
1,900.00	11.70	293.91	1,895.90	31.41	-56.53	34.36	2.00	2.00	-0.24	-1.40
2,000.00	13.70	293.74	1,993.45	40.29	-76.65	44.29	2.00	2.00	-0.17	-1.16
2,100.00	15.70	293.61	2,090.17	50.48	-99.89	55.70	2.00	2.00	-0.13	-0.99
2,200.00	17.70	293.51	2,185.95	61.96	-126.24	68.57	2.00	2.00	-0.10	-0.87
2,214.83	18.00	293.50	2,200.06	63.78	-130.40	70.60	2.00	2.00	-0.09	-0.77
End Nudge @ 2214.83ft										
2,300.00	18.00	293.50	2,281.06	74.27	-154.54	82.36	0.00	0.00	0.00	-0.76
2,400.00	18.00	293.50	2,376.17	86.59	-182.88	96.17	0.00	0.00	0.00	0.00
2,500.00	18.00	293.50	2,471.28	98.92	-211.22	109.98	0.00	0.00	0.00	0.00
2,600.00	18.00	293.50	2,566.38	111.24	-239.56	123.79	0.00	0.00	0.00	0.00
2,700.00	18.00	293.50	2,661.49	123.56	-267.90	137.59	0.00	0.00	0.00	0.00
2,800.00	18.00	293.50	2,756.59	135.88	-296.23	151.40	0.00	0.00	0.00	0.00
2,900.00	18.00	293.50	2,851.70	148.20	-324.57	165.21	0.00	0.00	0.00	0.00
3,000.00	18.00	293.50	2,946.80	160.53	-352.91	179.02	0.00	0.00	0.00	0.00
3,100.00	18.00	293.50	3,041.91	172.85	-381.25	192.82	0.00	0.00	0.00	0.00
3,200.00	18.00	293.50	3,137.01	185.17	-409.59	206.63	0.00	0.00	0.00	0.00
3,300.00	18.00	293.50	3,232.12	197.49	-437.93	220.44	0.00	0.00	0.00	0.00
3,400.00	18.00	293.50	3,327.23	209.81	-466.27	234.25	0.00	0.00	0.00	0.00
3,500.00	18.00	293.50	3,422.33	222.14	-494.61	248.05	0.00	0.00	0.00	0.00
3,600.00	18.00	293.50	3,517.44	234.46	-522.94	261.86	0.00	0.00	0.00	0.00
3,700.00	18.00	293.50	3,612.54	246.78	-551.28	275.67	0.00	0.00	0.00	0.00
3,800.00	18.00	293.50	3,707.65	259.10	-579.62	289.48	0.00	0.00	0.00	0.00
3,900.00	18.00	293.50	3,802.75	271.42	-607.96	303.28	0.00	0.00	0.00	0.00
4,000.00	18.00	293.50	3,897.86	283.75	-636.30	317.09	0.00	0.00	0.00	0.00
4,100.00	18.00	293.50	3,992.97	296.07	-664.64	330.90	0.00	0.00	0.00	0.00
4,200.00	18.00	293.50	4,088.07	308.39	-692.98	344.71	0.00	0.00	0.00	0.00
4,300.00	18.00	293.50	4,183.18	320.71	-721.31	358.52	0.00	0.00	0.00	0.00
4,400.00	18.00	293.50	4,278.28	333.04	-749.65	372.32	0.00	0.00	0.00	0.00
4,462.79	18.00	293.50	4,338.00	340.77	-767.45	380.99	0.00	0.00	0.00	0.00
Parkman										
4,500.00	18.00	293.50	4,373.39	345.36	-777.99	386.13	0.00	0.00	0.00	0.00
4,600.00	18.00	293.50	4,468.49	357.68	-806.33	399.94	0.00	0.00	0.00	0.00
4,700.00	18.00	293.50	4,563.60	370.00	-834.67	413.75	0.00	0.00	0.00	0.00
4,800.00	18.00	293.50	4,658.71	382.32	-863.01	427.55	0.00	0.00	0.00	0.00
4,807.67	18.00	293.50	4,666.00	383.27	-865.18	428.61	0.00	0.00	0.00	0.00
Sussex										
4,900.00	18.00	293.50	4,753.81	394.65	-891.35	441.36	0.00	0.00	0.00	0.00
5,000.00	18.00	293.50	4,848.92	406.97	-919.69	455.17	0.00	0.00	0.00	0.00
5,100.00	18.00	293.50	4,944.02	419.29	-948.02	468.98	0.00	0.00	0.00	0.00
5,200.00	18.00	293.50	5,039.13	431.61	-976.36	482.78	0.00	0.00	0.00	0.00
5,300.00	18.00	293.50	5,134.23	443.93	-1,004.70	496.59	0.00	0.00	0.00	0.00
5,400.00	18.00	293.50	5,229.34	456.26	-1,033.04	510.40	0.00	0.00	0.00	0.00
5,500.00	18.00	293.50	5,324.44	468.58	-1,061.38	524.21	0.00	0.00	0.00	0.00
5,600.00	18.00	293.50	5,419.55	480.90	-1,089.72	538.01	0.00	0.00	0.00	0.00

Plan Report for Turkey Springs 3C-14HZ - Plan A 0 - PROPOSAL

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 (°)
5,700.00	18.00	293.50	5,514.66	493.22	-1,118.06	551.82	0.00	0.00	0.00	0.00
5,800.00	18.00	293.50	5,609.76	505.54	-1,146.40	565.63	0.00	0.00	0.00	0.00
5,840.17	18.00	293.50	5,647.97	510.49	-1,157.78	571.18	0.00	0.00	0.00	0.00
Begin Drop @ 5840.17ft										
5,900.00	16.80	293.50	5,705.06	517.63	-1,174.19	579.17	2.00	-2.00	0.00	180.00
6,000.00	14.80	293.50	5,801.27	528.49	-1,199.16	591.34	2.00	-2.00	0.00	180.00
6,100.00	12.80	293.50	5,898.38	538.00	-1,221.04	602.00	2.00	-2.00	0.00	180.00
6,200.00	10.80	293.50	5,996.26	546.16	-1,239.80	611.14	2.00	-2.00	0.00	180.00
6,300.00	8.80	293.50	6,094.79	552.95	-1,255.41	618.75	2.00	-2.00	0.00	180.00
6,400.00	6.80	293.50	6,193.86	558.36	-1,267.86	624.81	2.00	-2.00	0.00	180.00
6,500.00	4.80	293.50	6,293.35	562.39	-1,277.14	629.33	2.00	-2.00	0.00	180.00
6,600.00	2.80	293.50	6,393.12	565.04	-1,283.22	632.29	2.00	-2.00	0.00	180.00
6,700.00	0.80	293.50	6,493.07	566.29	-1,286.11	633.70	2.00	-2.00	0.00	180.00
6,740.17	0.00	293.50	6,533.23	566.40	-1,286.36	633.83	2.00	-2.00	0.00	-180.00
Top 4-1/2" Liner @ 6740.17ft - End Drop @ 6740.17ft										
6,800.00	0.00	0.00	6,593.06	566.40	-1,286.36	633.83	0.00	0.00	0.00	180.00
6,840.17	0.00	0.00	6,633.23	566.40	-1,286.36	633.83	0.00	0.00	0.00	0.00
KOP @ 6840.17ft - DLS = 6.00/100ft										
6,900.00	3.59	356.96	6,693.02	568.27	-1,286.46	635.70	6.00	6.00	0.00	356.96
7,000.00	9.59	356.96	6,792.32	579.73	-1,287.07	647.17	6.00	6.00	0.00	0.00
7,100.00	15.59	356.96	6,889.87	601.49	-1,288.23	668.96	6.00	6.00	0.00	0.00
7,200.00	21.59	356.96	6,984.61	633.30	-1,289.92	700.82	6.00	6.00	0.00	0.00
7,300.00	27.59	356.96	7,075.50	674.84	-1,292.12	742.41	6.00	6.00	0.00	0.00
7,400.00	33.59	356.96	7,161.54	725.63	-1,294.82	793.28	6.00	6.00	0.00	0.00
7,458.18	37.08	356.96	7,209.00	759.23	-1,296.60	826.92	6.00	6.00	0.00	0.00
DLS = 5.00/100ft										
7,489.85	38.66	356.96	7,234.00	778.65	-1,297.64	846.37	5.00	5.00	0.00	0.00
Sharon Springs										
7,500.00	39.17	356.96	7,241.89	785.01	-1,297.97	852.74	5.00	5.00	0.00	0.00
7,582.61	43.30	356.96	7,304.00	839.38	-1,300.86	907.18	5.00	5.00	0.00	0.00
DLS = 6.00/100ft - Niobrara A										
7,600.00	44.35	356.96	7,316.55	851.40	-1,301.50	919.23	6.00	6.00	0.00	0.00
7,626.16	45.91	356.96	7,335.00	869.91	-1,302.48	937.76	6.00	6.00	0.00	0.00
Niobrara B										
7,700.00	50.35	356.96	7,384.27	924.81	-1,305.40	992.74	6.00	6.00	0.00	0.00
7,770.12	54.55	356.96	7,427.00	980.31	-1,308.35	1,048.32	6.00	6.00	0.00	0.00
Niobrara C										
7,800.00	56.35	356.96	7,443.95	1,004.89	-1,309.65	1,072.93	6.00	6.00	0.00	0.00
7,900.00	62.35	356.96	7,494.91	1,090.75	-1,314.21	1,158.91	6.00	6.00	0.00	0.00
8,000.00	68.35	356.96	7,536.60	1,181.47	-1,319.03	1,249.76	6.00	6.00	0.00	0.00
8,094.22	74.00	356.96	7,567.00	1,270.48	-1,323.77	1,338.90	6.00	6.00	0.00	0.00
Fort Hays										
8,100.00	74.35	356.96	7,568.58	1,276.03	-1,324.06	1,344.46	6.00	6.00	0.00	0.00
8,191.44	79.83	356.96	7,589.00	1,365.01	-1,328.79	1,433.56	6.00	6.00	0.00	0.00
Codell										
8,200.00	80.35	356.96	7,590.47	1,373.42	-1,329.24	1,441.98	6.00	6.00	0.00	0.00
8,300.00	86.35	356.96	7,602.06	1,472.56	-1,334.51	1,541.27	6.00	6.00	0.00	0.00
8,360.91	90.00	356.96	7,604.00	1,533.35	-1,337.74	1,602.13	6.00	6.00	0.00	0.00
End Build @ 8360.91ft - Codell TL - Heel - 7" Casing										
8,400.00	90.00	356.96	7,604.00	1,572.38	-1,339.81	1,641.22	0.00	0.00	0.00	0.00
8,500.00	90.00	356.96	7,604.00	1,672.24	-1,345.12	1,741.22	0.00	0.00	0.00	0.00
8,600.00	90.00	356.96	7,604.00	1,772.10	-1,350.43	1,841.22	0.00	0.00	0.00	0.00
8,700.00	90.00	356.96	7,604.00	1,871.96	-1,355.74	1,941.22	0.00	0.00	0.00	0.00
8,800.00	90.00	356.96	7,604.00	1,971.82	-1,361.05	2,041.22	0.00	0.00	0.00	0.00
8,900.00	90.00	356.96	7,604.00	2,071.68	-1,366.35	2,141.22	0.00	0.00	0.00	0.00
9,000.00	90.00	356.96	7,604.00	2,171.54	-1,371.66	2,241.22	0.00	0.00	0.00	0.00
9,100.00	90.00	356.96	7,604.00	2,271.40	-1,376.97	2,341.22	0.00	0.00	0.00	0.00
9,200.00	90.00	356.96	7,604.00	2,371.25	-1,382.28	2,441.22	0.00	0.00	0.00	0.00

Plan Report for Turkey Springs 3C-14HZ - Plan A 0 - PROPOSAL

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	90.00	356.96	7,604.00	2,471.11	-1,387.59	2,541.22	0.00	0.00	0.00	0.00
9,400.00	90.00	356.96	7,604.00	2,570.97	-1,392.90	2,641.22	0.00	0.00	0.00	0.00
9,500.00	90.00	356.96	7,604.00	2,670.83	-1,398.20	2,741.22	0.00	0.00	0.00	0.00
9,600.00	90.00	356.96	7,604.00	2,770.69	-1,403.51	2,841.22	0.00	0.00	0.00	0.00
9,700.00	90.00	356.96	7,604.00	2,870.55	-1,408.82	2,941.22	0.00	0.00	0.00	0.00
9,800.00	90.00	356.96	7,604.00	2,970.41	-1,414.13	3,041.22	0.00	0.00	0.00	0.00
9,900.00	90.00	356.96	7,604.00	3,070.27	-1,419.44	3,141.22	0.00	0.00	0.00	0.00
10,000.00	90.00	356.96	7,604.00	3,170.13	-1,424.75	3,241.22	0.00	0.00	0.00	0.00
10,100.00	90.00	356.96	7,604.00	3,269.99	-1,430.06	3,341.22	0.00	0.00	0.00	0.00
10,200.00	90.00	356.96	7,604.00	3,369.84	-1,435.36	3,441.22	0.00	0.00	0.00	0.00
10,300.00	90.00	356.96	7,604.00	3,469.70	-1,440.67	3,541.22	0.00	0.00	0.00	0.00
10,400.00	90.00	356.96	7,604.00	3,569.56	-1,445.98	3,641.22	0.00	0.00	0.00	0.00
10,500.00	90.00	356.96	7,604.00	3,669.42	-1,451.29	3,741.22	0.00	0.00	0.00	0.00
10,600.00	90.00	356.96	7,604.00	3,769.28	-1,456.60	3,841.22	0.00	0.00	0.00	0.00
10,700.00	90.00	356.96	7,604.00	3,869.14	-1,461.91	3,941.22	0.00	0.00	0.00	0.00
10,800.00	90.00	356.96	7,604.00	3,969.00	-1,467.21	4,041.22	0.00	0.00	0.00	0.00
10,900.00	90.00	356.96	7,604.00	4,068.86	-1,472.52	4,141.22	0.00	0.00	0.00	0.00
11,000.00	90.00	356.96	7,604.00	4,168.72	-1,477.83	4,241.22	0.00	0.00	0.00	0.00
11,100.00	90.00	356.96	7,604.00	4,268.58	-1,483.14	4,341.22	0.00	0.00	0.00	0.00
11,200.00	90.00	356.96	7,604.00	4,368.43	-1,488.45	4,441.22	0.00	0.00	0.00	0.00
11,300.00	90.00	356.96	7,604.00	4,468.29	-1,493.76	4,541.22	0.00	0.00	0.00	0.00
11,400.00	90.00	356.96	7,604.00	4,568.15	-1,499.06	4,641.22	0.00	0.00	0.00	0.00
11,500.00	90.00	356.96	7,604.00	4,668.01	-1,504.37	4,741.22	0.00	0.00	0.00	0.00
11,600.00	90.00	356.96	7,604.00	4,767.87	-1,509.68	4,841.22	0.00	0.00	0.00	0.00
11,700.00	90.00	356.96	7,604.00	4,867.73	-1,514.99	4,941.22	0.00	0.00	0.00	0.00
11,800.00	90.00	356.96	7,604.00	4,967.59	-1,520.30	5,041.22	0.00	0.00	0.00	0.00
11,900.00	90.00	356.96	7,604.00	5,067.45	-1,525.61	5,141.22	0.00	0.00	0.00	0.00
12,000.00	90.00	356.96	7,604.00	5,167.31	-1,530.91	5,241.22	0.00	0.00	0.00	0.00
12,100.00	90.00	356.96	7,604.00	5,267.17	-1,536.22	5,341.22	0.00	0.00	0.00	0.00
12,200.00	90.00	356.96	7,604.00	5,367.02	-1,541.53	5,441.22	0.00	0.00	0.00	0.00
12,300.00	90.00	356.96	7,604.00	5,466.88	-1,546.84	5,541.22	0.00	0.00	0.00	0.00
12,400.00	90.00	356.96	7,604.00	5,566.74	-1,552.15	5,641.22	0.00	0.00	0.00	0.00
12,416.51	90.00	356.96	7,604.00	5,583.23	-1,553.03	5,657.73	0.00	0.00	0.00	0.00
Codell TL - Toe										
12,416.52	90.00	356.96	7,604.00	5,583.24	-1,553.03	5,657.74	0.00	0.00	0.00	0.00
TS 3C-14HZ_BHL										

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,025.00	1,024.97	4.66	-2.06	Tie-On to Surface Gyros @ 1025.00ft
1,325.00	1,324.97	6.20	-2.55	Begin Nudge @ 1325.00ft
2,214.83	2,200.06	63.78	-130.40	End Nudge @ 2214.83ft
5,840.17	5,647.97	510.49	-1,157.78	Begin Drop @ 5840.17ft
6,740.17	6,533.23	566.40	-1,286.36	Top 4-1/2" Liner @ 6740.17ft
6,740.17	6,533.23	566.40	-1,286.36	End Drop @ 6740.17ft
6,840.17	6,633.23	566.40	-1,286.36	KOP @ 6840.17ft
6,840.17	6,633.23	566.40	-1,286.36	DLS = 6.00/100ft
7,458.18	7,209.00	759.23	-1,296.60	DLS = 5.00/100ft
7,582.61	7,304.00	839.38	-1,300.86	DLS = 6.00/100ft
8,360.91	7,604.00	1,533.35	-1,337.74	End Build @ 8360.91ft
12,416.52	7,604.00	5,583.24	-1,553.03	TD @ 12416.52ft

Plan Report for Turkey Springs 3C-14HZ - Plan A 0 - PROPOSAL

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft)	Origin +E/-W (ft)	Start TVD (ft)
User	No Target (Freehand)	356.96	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
25.00	1,025.00	MS Energy Services - Surface Gyros	NS-GYRO-MS
1,025.00	8,360.91	Plan A 0 - PROPOSAL	MWD+SC
8,360.91	12,416.52	Plan A 0 - PROPOSAL	MWD+SC

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
1,072.40	1,072.37	9 5/8" Casing	9-5/8	13-1/2
8,360.91	7,604.00	7" Casing	7	8-3/4

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,462.79	4,338.00	Parkman		0.00	
4,807.67	4,666.00	Sussex		0.00	
7,489.85	7,234.00	Sharon Springs		0.00	
7,582.61	7,304.00	Niobrara A		0.00	
7,626.16	7,335.00	Niobrara B		0.00	
7,770.12	7,427.00	Niobrara C		0.00	
8,094.22	7,567.00	Fort Hays		0.00	
8,191.44	7,589.00	Codell		0.00	
8,360.91	7,604.00	Codell TL - Heel		0.00	
12,416.51	7,604.00	Codell TL - Toe		0.00	

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
TS 3C-14HZ_LD	0.00	0.00	0.00	Polygon
TS 3C-14HZ_SHL	0.00	0.00	0.00	Point
TS 3C-14HZ_BHL	7,604.00	5,583.24	-1,553.03	Point
TS 3C-14HZ_Sec	0.00	0.00	0.00	Polygon

North Reference Sheet for Sec. 23-T2N-R66W - Turkey Springs 3C-14HZ - Plan A 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=25 @ 5179.00ft (H&P 308). Northing and Easting are relative to Turkey Springs 3C-14HZ

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: 3,000,000.00ft, False Northing: 1,000,000.00ft, Scale Reduction: 0.99995910

Grid Coordinates of Well: 1,290,707.54 ft N, 3,211,732.67 ft E

Geographical Coordinates of Well: 40° 07' 44.05" N, 104° 44' 34.03" W

Grid Convergence at Surface is: 0.49°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,416.52ft
the Bottom Hole Displacement is 5,795.21ft in the Direction of 344.46° (True).

Magnetic Convergence at surface is: -8.13° (16 June 2013, , BGGM2012)

