

# Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 36-T4N-R66W

Rissler State 29C-36HZX

Plan A

Plan: Rev A0

## Sperry Drilling Services

### Proposal Report

23 October, 2014

Well Coordinates: 1,339,683.56 N, 3,215,495.10 E (40° 15' 47.72" N, 104° 43' 40.10" W)

Ground Level: 4,862.00 usft

Local Coordinate Origin:

Viewing Datum:

TVDs to System:

North Reference:

Unit System:

Geodetic Scale Factor Applied

Version: 5000.1 Build: 70

Centered on Well Rissler State 29C-36HZX

RKB = 25' @ 4887.00usft (H&P 311)

N

True

Dec-Deg - API - US Survey Feet - Custom

**HALLIBURTON**

Project: Weld County, CO (NAD 83)  
Site: Sec. 36-T4N-R66W  
Well: Rissler State 29C-36HZX  
Wellbore: Plan A  
Design: Rev A0

# Anadarko Petroleum Corp.

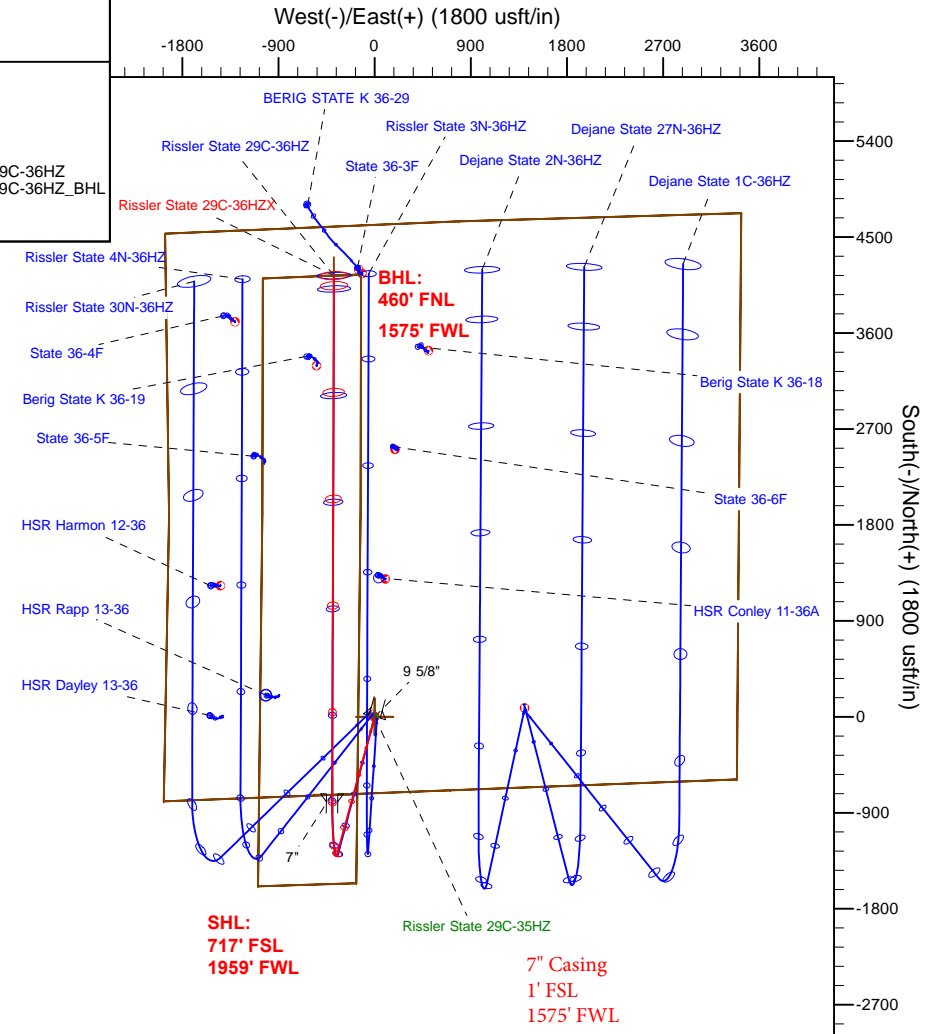
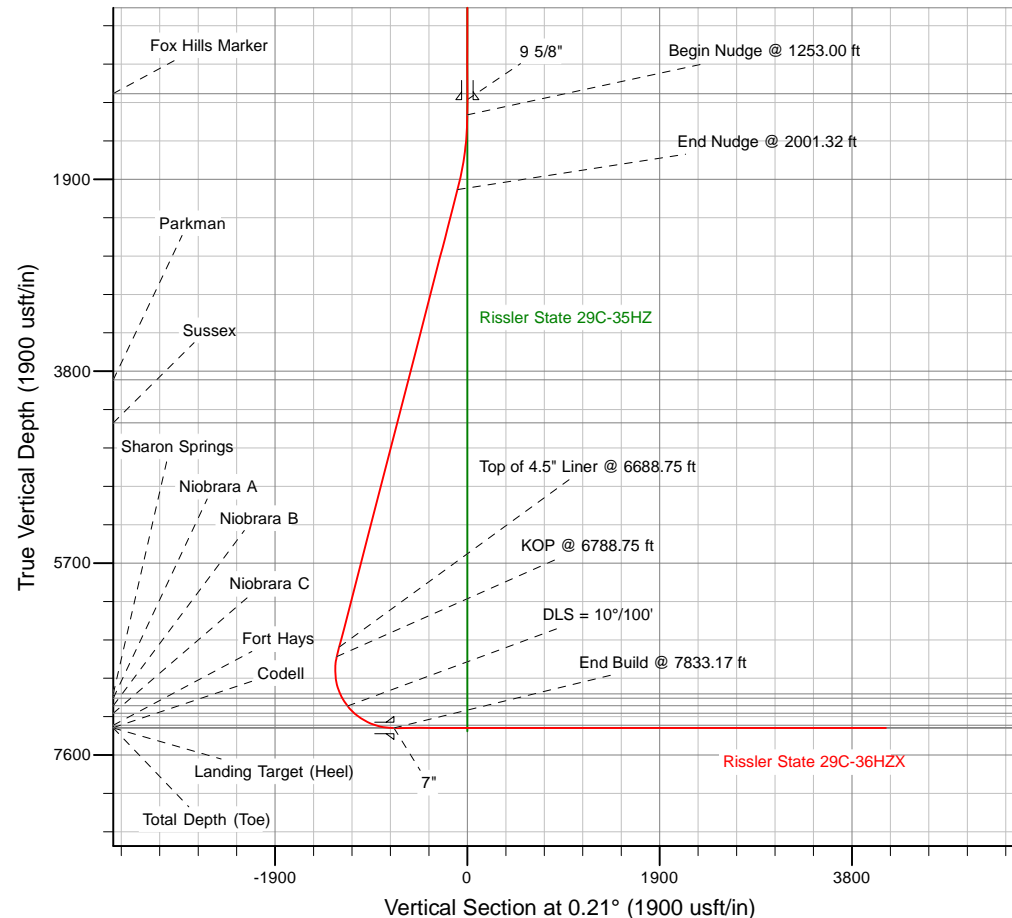
**HALLIBURTON**  
Sperry Drilling

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Annotation	Target
1	8.00	0.00	0.00	8.00	0.00	0.00	0.00	0.00	0.00		
2	1253.00	0.00	0.00	1253.00	0.00	0.00	0.00	0.00	0.00	Begin Nudge @ 1253.00 ft	
3	2001.32	14.97	195.26	1992.83	-93.75	-25.58	2.00	195.26	-93.85	End Nudge @ 2001.32 ft	
4	6788.75	14.97	195.26	6617.87	-1286.51	-351.02	0.00	0.00	-1287.79	KOP @ 6788.75 ft	
5	7833.17	90.00	0.21	7332.00	-731.48	-398.54	10.00	164.45	-732.94	End Build @ 7833.17 ft	Rissler State 29C-36HZ
6	12702.84	90.00	0.21	7332.00	4138.16	-380.61	0.00	0.00	4136.74	TD Well @ 12702.83 ft	Rissler State 29C-36HZ_BHL

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Rissler State 29C-36HZ_LD	8.00	0.03	0.00	40.263255	-104.727806	Polygon
Rissler State 29C-36HZ_SEC	8.00	0.03	0.00	40.263255	-104.727806	Polygon
Rissler State 29C-36HZ_SHL	8.00	0.03	0.00	40.263255	-104.727806	Point
Rissler State 29C-36HZ	7332.00	-731.48	-398.54	40.261247	-104.729234	Point
Rissler State 29C-36HZ_BHL	7332.00	4138.16	-380.61	40.274614	-104.729170	Point



## FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1053.00	1053.00	Fox Hills Marker
3885.00	3959.92	Parkman
4310.00	4399.84	Sussex
6994.00	7174.37	Sharon Springs
7037.00	7222.56	Niobrara A
7111.00	7311.49	Niobrara B
7186.00	7414.39	Niobrara C
7306.00	7659.69	Fort Hays
7327.00	7757.33	Codell
7332.00	7833.17	Landing Target (Heel)
7332.00	12702.83	Total Depth (Toe)

## WELL DETAILS: Rissler State 29C-36HZX

Ground Level: 4862.00

RKB = 25' @ 4887.00usft (H&P 311)

Plan: Rev A0 (Rissler State 29C-36HZX/Plan A)

Created By: Katie Benner Date: 10/23/2014  
Reviewed: Date:

**Plan Report for Rissler State 29C-36HZX - Rev A0**

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 (°)
8.00	0.00	0.00	8.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Rissler State 29C-36HZ_SEC - Rissler State 29C-36HZ_SHL - Rissler State 29C-36HZ_LD</b>										
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
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
1,053.00	0.00	0.00	1,053.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Fox Hills Marker</b>										
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,103.00	0.00	0.00	1,103.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>9 5/8"</b>										
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,253.00	0.00	0.00	1,253.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Begin Nudge @ 1253.00 ft</b>										
1,300.00	0.94	195.26	1,300.00	-0.37	-0.10	-0.37	2.00	2.00	0.00	195.26
1,400.00	2.94	195.26	1,399.94	-3.64	-0.99	-3.64	2.00	2.00	0.00	0.00
1,500.00	4.94	195.26	1,499.69	-10.27	-2.80	-10.28	2.00	2.00	0.00	0.00
1,600.00	6.94	195.26	1,599.15	-20.25	-5.52	-20.27	2.00	2.00	0.00	0.00
1,700.00	8.94	195.26	1,698.19	-33.58	-9.16	-33.61	2.00	2.00	0.00	0.00
1,800.00	10.94	195.26	1,796.68	-50.23	-13.70	-50.28	2.00	2.00	0.00	0.00
1,900.00	12.94	195.26	1,894.51	-70.19	-19.15	-70.26	2.00	2.00	0.00	0.00
2,000.00	14.94	195.26	1,991.56	-93.43	-25.49	-93.52	2.00	2.00	0.00	0.00
2,001.32	14.97	195.26	1,992.84	-93.75	-25.58	-93.85	1.99	1.99	0.00	0.00
<b>End Nudge @ 2001.32 ft</b>										
2,100.00	14.97	195.26	2,088.17	-118.34	-32.29	-118.46	0.00	0.00	0.00	0.00
2,200.00	14.97	195.26	2,184.78	-143.25	-39.09	-143.40	0.00	0.00	0.00	0.00
2,300.00	14.97	195.26	2,281.39	-168.17	-45.88	-168.34	0.00	0.00	0.00	0.00
2,400.00	14.97	195.26	2,377.99	-193.08	-52.68	-193.27	0.00	0.00	0.00	0.00
2,500.00	14.97	195.26	2,474.60	-218.00	-59.48	-218.21	0.00	0.00	0.00	0.00
2,600.00	14.97	195.26	2,571.21	-242.91	-66.28	-243.15	0.00	0.00	0.00	0.00
2,700.00	14.97	195.26	2,667.82	-267.83	-73.07	-268.09	0.00	0.00	0.00	0.00
2,800.00	14.97	195.26	2,764.43	-292.74	-79.87	-293.03	0.00	0.00	0.00	0.00
2,900.00	14.97	195.26	2,861.03	-317.65	-86.67	-317.97	0.00	0.00	0.00	0.00
3,000.00	14.97	195.26	2,957.64	-342.57	-93.47	-342.91	0.00	0.00	0.00	0.00
3,100.00	14.97	195.26	3,054.25	-367.48	-100.27	-367.85	0.00	0.00	0.00	0.00
3,200.00	14.97	195.26	3,150.86	-392.40	-107.06	-392.79	0.00	0.00	0.00	0.00
3,300.00	14.97	195.26	3,247.47	-417.31	-113.86	-417.73	0.00	0.00	0.00	0.00
3,400.00	14.97	195.26	3,344.07	-442.23	-120.66	-442.67	0.00	0.00	0.00	0.00
3,500.00	14.97	195.26	3,440.68	-467.14	-127.46	-467.60	0.00	0.00	0.00	0.00
3,600.00	14.97	195.26	3,537.29	-492.05	-134.25	-492.54	0.00	0.00	0.00	0.00
3,700.00	14.97	195.26	3,633.90	-516.97	-141.05	-517.48	0.00	0.00	0.00	0.00
3,800.00	14.97	195.26	3,730.50	-541.88	-147.85	-542.42	0.00	0.00	0.00	0.00
3,900.00	14.97	195.26	3,827.11	-566.80	-154.65	-567.36	0.00	0.00	0.00	0.00
3,959.92	14.97	195.26	3,885.00	-581.73	-158.72	-582.30	0.00	0.00	0.00	0.00
<b>Parkman</b>										
4,000.00	14.97	195.26	3,923.72	-591.71	-161.45	-592.30	0.00	0.00	0.00	0.00
4,100.00	14.97	195.26	4,020.33	-616.63	-168.24	-617.24	0.00	0.00	0.00	0.00
4,200.00	14.97	195.26	4,116.94	-641.54	-175.04	-642.18	0.00	0.00	0.00	0.00
4,300.00	14.97	195.26	4,213.54	-666.46	-181.84	-667.12	0.00	0.00	0.00	0.00
4,399.84	14.97	195.26	4,310.00	-691.33	-188.63	-692.02	0.00	0.00	0.00	0.00
<b>Sussex</b>										

**Plan Report for Rissler State 29C-36HZX - Rev A0**

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 (°)
4,400.00	14.97	195.26	4,310.15	-691.37	-188.64	-692.06	0.00	0.00	0.00	0.00
4,500.00	14.97	195.26	4,406.76	-716.28	-195.43	-717.00	0.00	0.00	0.00	0.00
4,600.00	14.97	195.26	4,503.37	-741.20	-202.23	-741.93	0.00	0.00	0.00	0.00
4,700.00	14.97	195.26	4,599.97	-766.11	-209.03	-766.87	0.00	0.00	0.00	0.00
4,800.00	14.97	195.26	4,696.58	-791.03	-215.83	-791.81	0.00	0.00	0.00	0.00
4,900.00	14.97	195.26	4,793.19	-815.94	-222.63	-816.75	0.00	0.00	0.00	0.00
5,000.00	14.97	195.26	4,889.80	-840.86	-229.42	-841.69	0.00	0.00	0.00	0.00
5,100.00	14.97	195.26	4,986.41	-865.77	-236.22	-866.63	0.00	0.00	0.00	0.00
5,200.00	14.97	195.26	5,083.01	-890.68	-243.02	-891.57	0.00	0.00	0.00	0.00
5,300.00	14.97	195.26	5,179.62	-915.60	-249.82	-916.51	0.00	0.00	0.00	0.00
5,400.00	14.97	195.26	5,276.23	-940.51	-256.61	-941.45	0.00	0.00	0.00	0.00
5,500.00	14.97	195.26	5,372.84	-965.43	-263.41	-966.39	0.00	0.00	0.00	0.00
5,600.00	14.97	195.26	5,469.44	-990.34	-270.21	-991.33	0.00	0.00	0.00	0.00
5,700.00	14.97	195.26	5,566.05	-1,015.26	-277.01	-1,016.27	0.00	0.00	0.00	0.00
5,800.00	14.97	195.26	5,662.66	-1,040.17	-283.80	-1,041.20	0.00	0.00	0.00	0.00
5,900.00	14.97	195.26	5,759.27	-1,065.09	-290.60	-1,066.14	0.00	0.00	0.00	0.00
6,000.00	14.97	195.26	5,855.88	-1,090.00	-297.40	-1,091.08	0.00	0.00	0.00	0.00
6,100.00	14.97	195.26	5,952.48	-1,114.91	-304.20	-1,116.02	0.00	0.00	0.00	0.00
6,200.00	14.97	195.26	6,049.09	-1,139.83	-311.00	-1,140.96	0.00	0.00	0.00	0.00
6,300.00	14.97	195.26	6,145.70	-1,164.74	-317.79	-1,165.90	0.00	0.00	0.00	0.00
6,400.00	14.97	195.26	6,242.31	-1,189.66	-324.59	-1,190.84	0.00	0.00	0.00	0.00
6,500.00	14.97	195.26	6,338.91	-1,214.57	-331.39	-1,215.78	0.00	0.00	0.00	0.00
6,600.00	14.97	195.26	6,435.52	-1,239.49	-338.19	-1,240.72	0.00	0.00	0.00	0.00
6,688.75	14.97	195.26	6,521.26	-1,261.60	-344.22	-1,262.85	0.00	0.00	0.00	0.00
<b>Top of 4.5" Liner @ 6688.75 ft</b>										
6,700.00	14.97	195.26	6,532.13	-1,264.40	-344.98	-1,265.66	0.00	0.00	0.00	0.00
6,788.75	14.97	195.26	6,617.87	-1,286.51	-351.02	-1,287.79	0.00	0.00	0.00	0.00
<b>KOP @ 6788.75 ft</b>										
6,800.00	13.89	196.52	6,628.76	-1,289.21	-351.78	-1,290.49	10.00	-9.61	11.17	164.45
6,900.00	5.17	230.29	6,727.35	-1,303.63	-358.68	-1,304.93	10.00	-8.71	33.77	163.23
7,000.00	7.77	329.63	6,826.94	-1,300.67	-365.58	-1,302.00	10.00	2.60	99.34	129.81
7,100.00	17.14	347.20	6,924.51	-1,280.42	-372.28	-1,281.78	10.00	9.37	17.57	30.81
7,174.37	24.43	351.42	6,994.00	-1,254.49	-377.01	-1,255.87	10.00	9.80	5.67	13.59
<b>Sharon Springs</b>										
7,200.00	26.96	352.37	7,017.09	-1,243.49	-378.57	-1,244.87	10.00	9.87	3.69	9.64
7,222.56	29.19	353.07	7,037.00	-1,232.96	-379.91	-1,234.35	10.00	9.89	3.13	8.79
<b>Niobrara A</b>										
7,300.00	36.87	354.90	7,101.88	-1,191.02	-384.26	-1,192.42	10.00	9.92	2.36	8.16
7,308.00	37.66	355.05	7,108.24	-1,186.19	-384.69	-1,187.59	10.00	9.93	1.89	6.63
<b>DLS = 10°/100'</b>										
7,311.49	38.01	355.12	7,111.00	-1,184.06	-384.87	-1,185.46	10.00	9.94	1.84	6.51
<b>Niobrara B</b>										
7,400.00	46.81	356.48	7,176.29	-1,124.58	-389.18	-1,126.00	10.00	9.95	1.54	6.46
7,414.39	48.25	356.66	7,186.00	-1,113.99	-389.82	-1,115.41	10.00	9.96	1.27	5.45
<b>Niobrara C</b>										
7,500.00	56.77	357.60	7,238.06	-1,046.21	-393.18	-1,047.64	10.00	9.96	1.11	5.33
7,600.00	66.74	358.50	7,285.32	-958.27	-396.14	-959.72	10.00	9.97	0.90	4.75
7,659.69	72.70	358.97	7,306.00	-902.32	-397.37	-903.78	10.00	9.97	0.79	4.32
<b>Fort Hays</b>										
7,700.00	76.72	359.27	7,316.63	-863.45	-397.96	-864.91	10.00	9.97	0.74	4.16
7,757.33	82.43	359.68	7,327.00	-807.10	-398.48	-808.55	10.00	9.98	0.72	4.08
<b>Codell</b>										
7,800.00	86.69	359.98	7,331.04	-764.63	-398.60	-766.08	10.00	9.98	0.70	4.01
7,833.17	90.00	0.21	7,332.00	-731.48	-398.54	-732.94	10.00	9.97	0.69	3.98
<b>End Build @ 7833.17 ft - Landing Target (Heel) - 7" - Rissler State 29C-36HZ</b>										
7,900.00	90.00	0.21	7,332.00	-664.65	-398.30	-666.10	0.00	0.00	0.00	3.97
8,000.00	90.00	0.21	7,332.00	-564.65	-397.93	-566.10	0.00	0.00	0.00	0.00
8,100.00	90.00	0.21	7,332.00	-464.65	-397.56	-466.10	0.00	0.00	0.00	0.00
8,200.00	90.00	0.21	7,332.00	-364.65	-397.19	-366.10	0.00	0.00	0.00	0.00

**Plan Report for Rissler State 29C-36HZX - Rev A0**

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 (°)
8,300.00	90.00	0.21	7,332.00	-264.65	-396.82	-266.10	0.00	0.00	0.00	0.00
8,400.00	90.00	0.21	7,332.00	-164.65	-396.46	-166.10	0.00	0.00	0.00	0.00
8,500.00	90.00	0.21	7,332.00	-64.65	-396.09	-66.10	0.00	0.00	0.00	0.00
8,600.00	90.00	0.21	7,332.00	35.35	-395.72	33.90	0.00	0.00	0.00	0.00
8,700.00	90.00	0.21	7,332.00	135.35	-395.35	133.90	0.00	0.00	0.00	0.00
8,800.00	90.00	0.21	7,332.00	235.35	-394.98	233.90	0.00	0.00	0.00	0.00
8,900.00	90.00	0.21	7,332.00	335.35	-394.61	333.90	0.00	0.00	0.00	0.00
9,000.00	90.00	0.21	7,332.00	435.35	-394.25	433.90	0.00	0.00	0.00	0.00
9,100.00	90.00	0.21	7,332.00	535.35	-393.88	533.90	0.00	0.00	0.00	0.00
9,200.00	90.00	0.21	7,332.00	635.35	-393.51	633.90	0.00	0.00	0.00	0.00
9,300.00	90.00	0.21	7,332.00	735.35	-393.14	733.90	0.00	0.00	0.00	0.00
9,400.00	90.00	0.21	7,332.00	835.34	-392.77	833.90	0.00	0.00	0.00	0.00
9,500.00	90.00	0.21	7,332.00	935.34	-392.40	933.90	0.00	0.00	0.00	0.00
9,600.00	90.00	0.21	7,332.00	1,035.34	-392.04	1,033.90	0.00	0.00	0.00	0.00
9,700.00	90.00	0.21	7,332.00	1,135.34	-391.67	1,133.90	0.00	0.00	0.00	0.00
9,800.00	90.00	0.21	7,332.00	1,235.34	-391.30	1,233.90	0.00	0.00	0.00	0.00
9,900.00	90.00	0.21	7,332.00	1,335.34	-390.93	1,333.90	0.00	0.00	0.00	0.00
10,000.00	90.00	0.21	7,332.00	1,435.34	-390.56	1,433.90	0.00	0.00	0.00	0.00
10,100.00	90.00	0.21	7,332.00	1,535.34	-390.19	1,533.90	0.00	0.00	0.00	0.00
10,200.00	90.00	0.21	7,332.00	1,635.34	-389.83	1,633.90	0.00	0.00	0.00	0.00
10,300.00	90.00	0.21	7,332.00	1,735.34	-389.46	1,733.90	0.00	0.00	0.00	0.00
10,400.00	90.00	0.21	7,332.00	1,835.34	-389.09	1,833.90	0.00	0.00	0.00	0.00
10,500.00	90.00	0.21	7,332.00	1,935.34	-388.72	1,933.90	0.00	0.00	0.00	0.00
10,600.00	90.00	0.21	7,332.00	2,035.34	-388.35	2,033.90	0.00	0.00	0.00	0.00
10,700.00	90.00	0.21	7,332.00	2,135.34	-387.98	2,133.90	0.00	0.00	0.00	0.00
10,800.00	90.00	0.21	7,332.00	2,235.33	-387.62	2,233.90	0.00	0.00	0.00	0.00
10,900.00	90.00	0.21	7,332.00	2,335.33	-387.25	2,333.90	0.00	0.00	0.00	0.00
11,000.00	90.00	0.21	7,332.00	2,435.33	-386.88	2,433.90	0.00	0.00	0.00	0.00
11,100.00	90.00	0.21	7,332.00	2,535.33	-386.51	2,533.90	0.00	0.00	0.00	0.00
11,200.00	90.00	0.21	7,332.00	2,635.33	-386.14	2,633.90	0.00	0.00	0.00	0.00
11,300.00	90.00	0.21	7,332.00	2,735.33	-385.77	2,733.90	0.00	0.00	0.00	0.00
11,400.00	90.00	0.21	7,332.00	2,835.33	-385.41	2,833.90	0.00	0.00	0.00	0.00
11,500.00	90.00	0.21	7,332.00	2,935.33	-385.04	2,933.90	0.00	0.00	0.00	0.00
11,600.00	90.00	0.21	7,332.00	3,035.33	-384.67	3,033.90	0.00	0.00	0.00	0.00
11,700.00	90.00	0.21	7,332.00	3,135.33	-384.30	3,133.90	0.00	0.00	0.00	0.00
11,800.00	90.00	0.21	7,332.00	3,235.33	-383.93	3,233.90	0.00	0.00	0.00	0.00
11,900.00	90.00	0.21	7,332.00	3,335.33	-383.56	3,333.90	0.00	0.00	0.00	0.00
12,000.00	90.00	0.21	7,332.00	3,435.33	-383.20	3,433.90	0.00	0.00	0.00	0.00
12,100.00	90.00	0.21	7,332.00	3,535.33	-382.83	3,533.90	0.00	0.00	0.00	0.00
12,200.00	90.00	0.21	7,332.00	3,635.33	-382.46	3,633.90	0.00	0.00	0.00	0.00
12,300.00	90.00	0.21	7,332.00	3,735.32	-382.09	3,733.90	0.00	0.00	0.00	0.00
12,400.00	90.00	0.21	7,332.00	3,835.32	-381.72	3,833.90	0.00	0.00	0.00	0.00
12,500.00	90.00	0.21	7,332.00	3,935.32	-381.35	3,933.90	0.00	0.00	0.00	0.00
12,600.00	90.00	0.21	7,332.00	4,035.32	-380.99	4,033.90	0.00	0.00	0.00	0.00
12,700.00	90.00	0.21	7,332.00	4,135.32	-380.62	4,133.90	0.00	0.00	0.00	0.00
12,702.83	90.00	0.21	7,332.00	4,138.15	-380.61	4,136.73	0.00	0.00	0.00	0.00

**TD Well @ 12702.83 ft - Total Depth (Toe)**

12,702.84	90.00	0.21	7,332.00	4,138.16	-380.61	4,136.74	0.00	0.00	0.00	0.00
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**Rissler State 29C-36HZ\_BHL**

**Plan Report for Rissler State 29C-36HZX - Rev A0****Plan Annotations**

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,253.00	1,253.00	0.00	0.00	Begin Nudge @ 1253.00 ft
2,001.32	1,992.84	-93.75	-25.58	End Nudge @ 2001.32 ft
6,688.75	6,521.26	-1,261.60	-344.22	Top of 4.5" Liner @ 6688.75 ft
6,788.75	6,617.87	-1,286.51	-351.02	KOP @ 6788.75 ft
7,308.00	7,108.24	-1,186.19	-384.69	DLS = 10°/100'
7,833.17	7,332.00	-731.47	-398.54	End Build @ 7833.17 ft
12,702.83	7,332.00	4,138.15	-380.61	TD Well @ 12702.83 ft

**Vertical Section Information**

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/_S (usft)	+E/-W (usft)	
User	No Target (Freehand)	0.21	Slot	0.00	0.00	8.00

**Survey tool program**

From (usft)	To (usft)	Survey/Plan	Survey Tool
8.00	7,832.17	Rev A0	MWD
7,833.17	12,702.84	Rev A0	MWD

**Casing Details**

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,103.00	1,103.00	9 5/8"	9-5/8	13-1/2
7,833.17	7,332.00	7"	7	8-3/4

**Formation Details**

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,053.00	1,053.00	Fox Hills Marker		0.00	
3,959.92	3,885.00	Parkman		0.00	
4,399.84	4,310.00	Sussex		0.00	
7,174.37	6,994.00	Sharon Springs		0.00	
7,222.56	7,037.00	Niobrara A		0.00	
7,311.49	7,111.00	Niobrara B		0.00	
7,414.39	7,186.00	Niobrara C		0.00	
7,659.69	7,306.00	Fort Hays		0.00	
7,757.33	7,327.00	Codell		0.00	
7,833.17	7,332.00	Landing Target (Heel)		0.00	
12,702.83	7,332.00	Total Depth (Toe)		0.00	

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Plan Report for Rissler State 29C-36HZX - Rev A0

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**Targets associated with this wellbore**

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
Rissler State 29C-36HZ_SEC	8.00	0.03	0.00	Polygon
Rissler State 29C-36HZ_SHL	8.00	0.03	0.00	Point
Rissler State 29C-36HZ_LD	8.00	0.03	0.00	Polygon
Rissler State 29C-36HZ	7,332.00	-731.48	-398.54	Point
Rissler State 29C-36HZ_BHL	7,332.00	4,138.16	-380.61	Point

**Directional Difficulty Index**

Average Dogleg over Survey:	0.94 °/100usft	Maximum Dogleg over Survey:	10.00 °/100usft at 7,833.17 usft
Net Tortosity applicable to Plans:	0.94 °/100usft	Directional Difficulty Index:	6.312

**Audit Info**

**North Reference Sheet for Sec. 36-T4N-R66W - Rissler State 29C-36HZX - 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 = 25' @ 4887.00usft (H&P 311). Northing and Easting are relative to Rissler State 29C-36HZX  
 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: 3,000,000.00usft, False Northing: 1,000,000.00usft, Scale Reduction: 0.99995687

Grid Coordinates of Well: 1,339,683.56 usft N, 3,215,495.10 usft E  
 Geographical Coordinates of Well: 40° 15' 47.72" N, 104° 43' 40.10" W  
 Grid Convergence at Surface is: 0.50°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,702.84usft  
 the Bottom Hole Displacement is 4,155.63usft in the Direction of 354.75° ( True).  
 Magnetic Convergence at surface is: -7.98° (22 May 2014, , BGGM2013)

