

Conoco Phillips Company

Arapahoe County, Colorado

Sec. 4-T4S-R64W (B&D Land 4-64 Pad)

B&D Land 4-64 4-1H

Plan A

Plan: Rev A0

Sperry Drilling Services

Proposal Report

18 August, 2014

Well Coordinates: 1,690,983.70 N, 3,268,027.97 E (39° 43' 36.10" N, 104° 32' 49.49" W)

Ground Level: 5,617.20 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 B&D Land 4-64 4-1H

KB 24 ft @ 5641.20usft (H&P 280)

N

True

API - US Survey Feet - Custom

HALLIBURTON

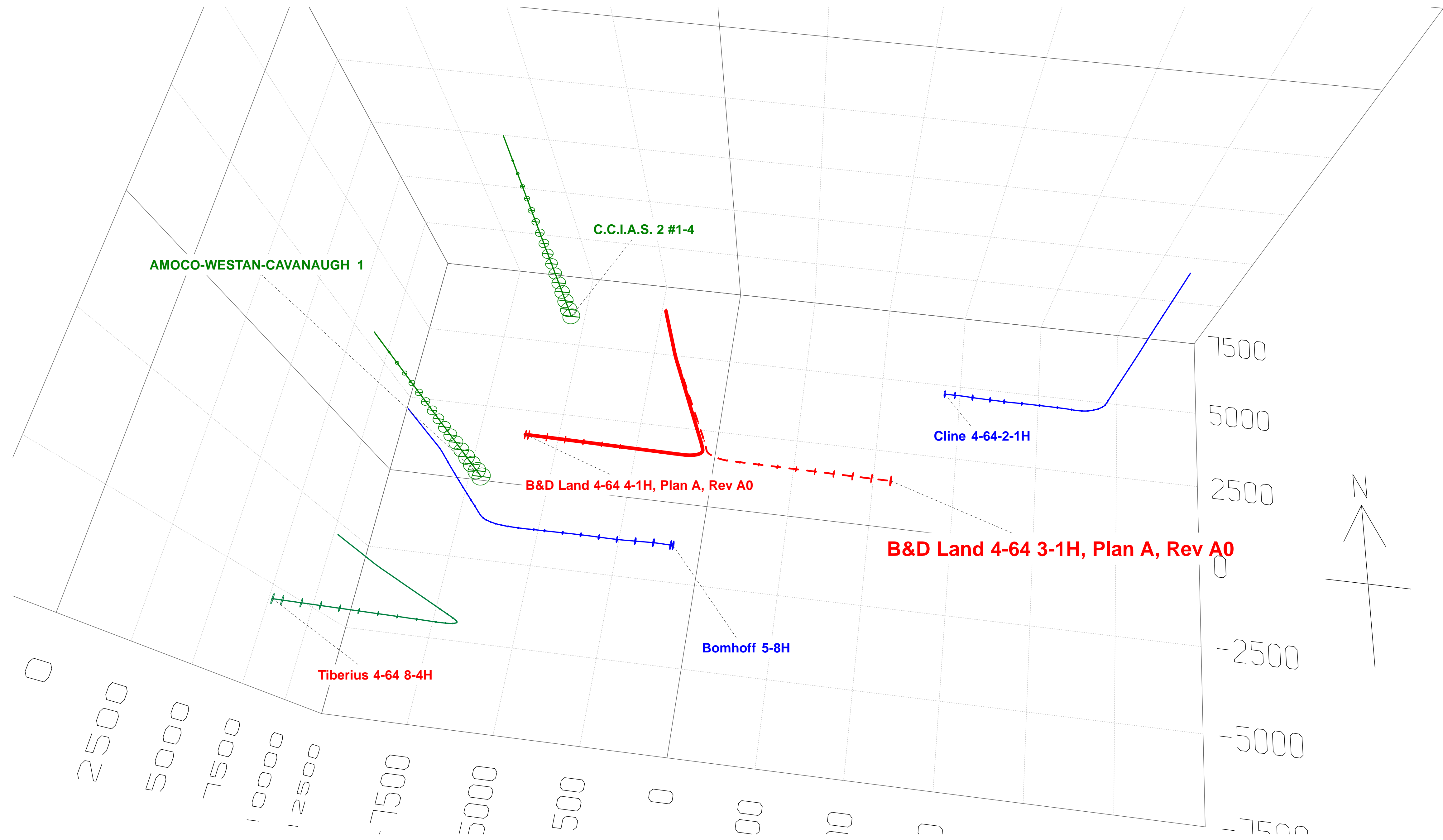
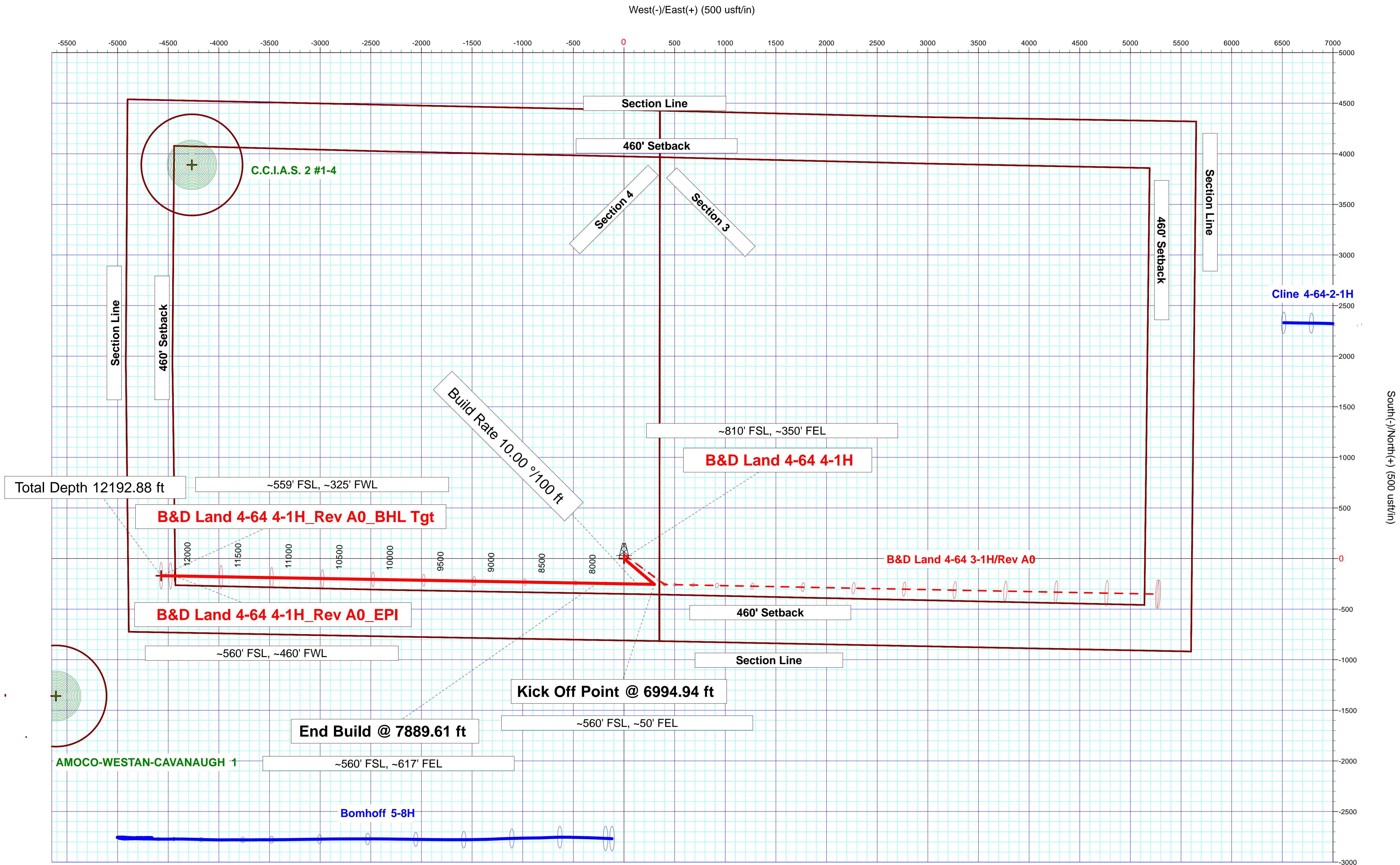
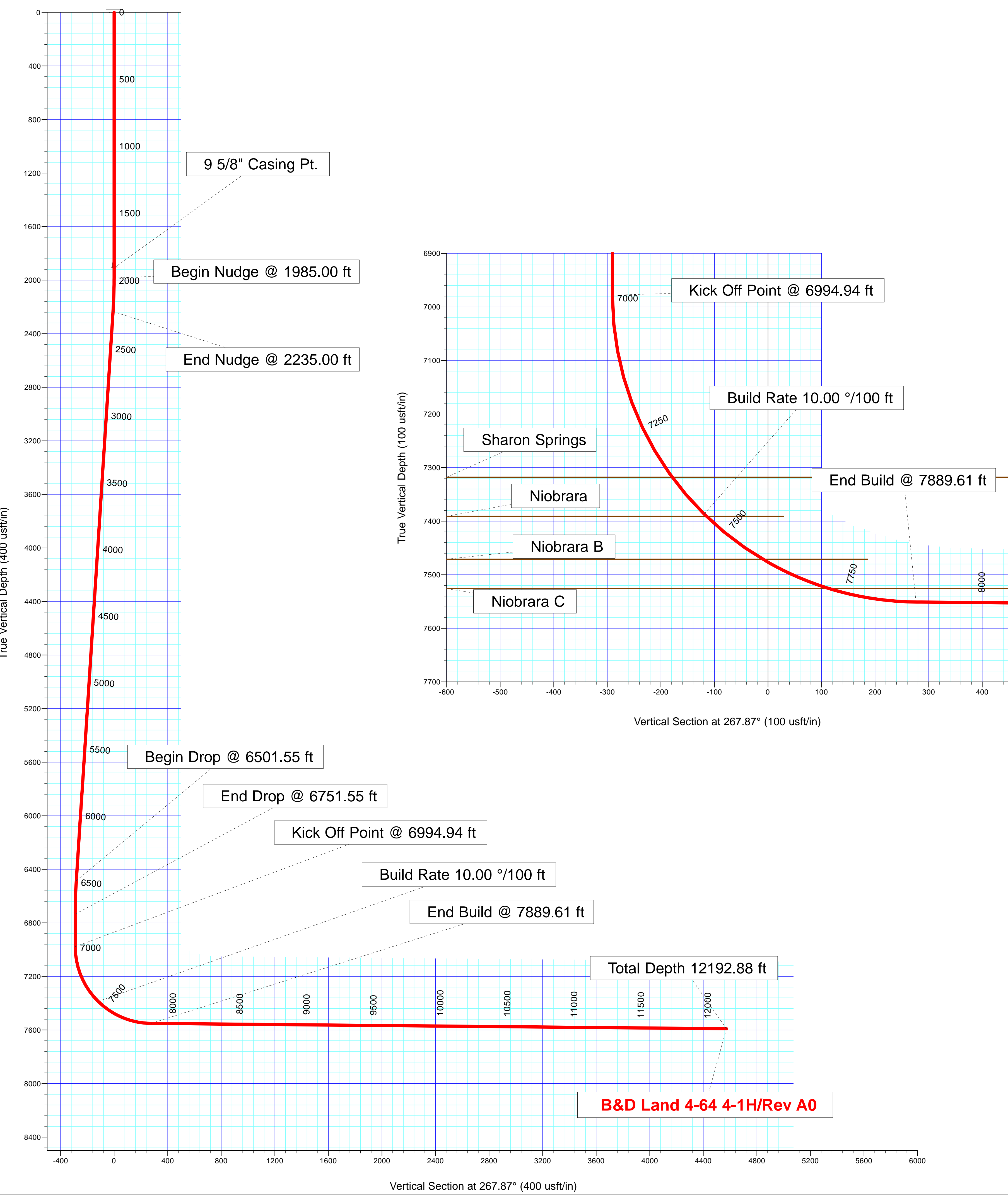
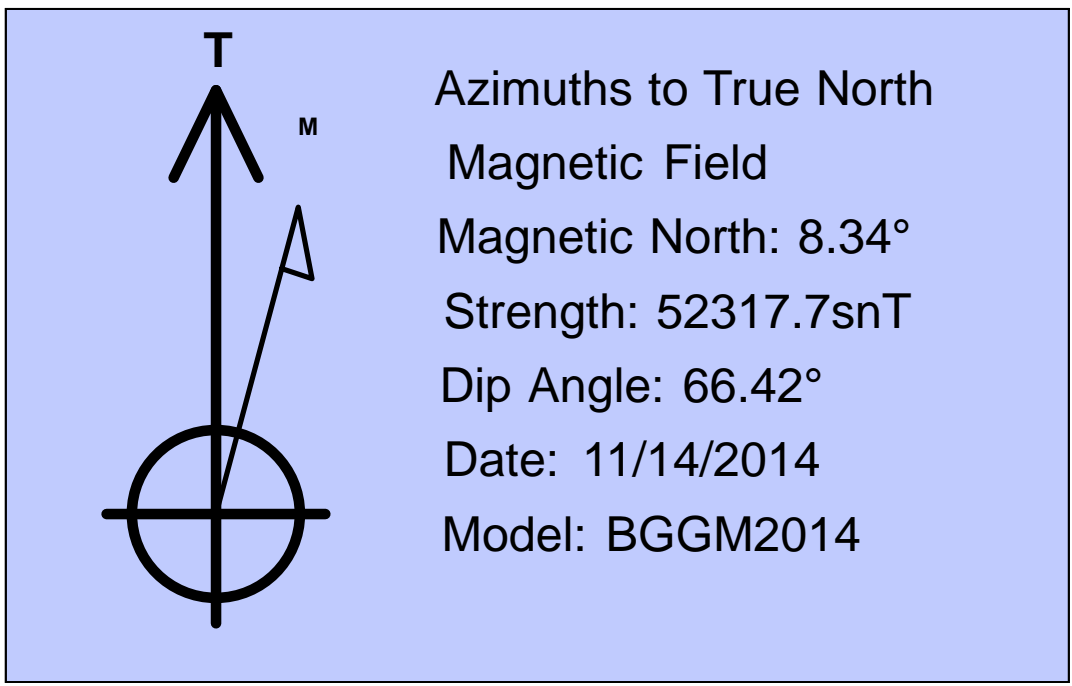
Project: Arapahoe County, Colorado
Site: Sec. 4-T4S-R64W (B&D Land 4-64 Pad)
Well: B&D Land 4-64 4-1H
Wellbore: Plan A
Plan: Rev A0

Conoco Phillips Company

HALLIBURTON
Sperry Drilling

SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1985.00	0.00	0.00	1985.00	0.00	0.00	0.00	0.00	0.00	
3	2235.00	5.00	130.35	2234.68	-7.06	8.31	2.00	130.35	-8.04	
4	6501.55	5.00	130.35	6485.00	-247.82	291.70	0.00	0.00	-282.31	
5	6751.55	0.00	0.00	6734.68	-254.88	300.01	2.00	180.00	-290.35	
6	6994.94	0.00	0.00	6978.07	-254.88	300.01	0.00	0.00	-290.35	
7	7889.61	89.47	271.00	7551.00	-244.93	-267.54	10.00	271.00	276.44	
8	12192.88	89.47	271.00	7591.00	-169.57	-4569.96	0.00	0.00	4573.11	B&D Land 4-64 4-1H_Rev A0_BHL Tgt

Plan: Rev A0 (B&D Land 4-64 4-1H/Plan A)	
Created By: Kansa B. Becker	Date: 12:48, August 18 2014
Checked: _____	Date: _____
Reviewed: _____	Date: _____
Approved: _____	Date: _____



Plan Report for B&D Land 4-64 4-1H - 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 (°)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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
1,100.00	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
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,585.00	0.00	0.00	1,585.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills										
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,709.00	0.00	0.00	1,709.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre Shale										
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,909.00	0.00	0.00	1,909.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Surface Casing - 9 5/8" Casing Pt.										
1,985.00	0.00	0.00	1,985.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 1985.00 ft										
2,000.00	0.30	130.35	2,000.00	-0.03	0.03	-0.03	2.00	2.00	0.00	130.35
2,100.00	2.30	130.35	2,099.97	-1.49	1.76	-1.70	2.00	2.00	0.00	0.00
2,200.00	4.30	130.35	2,199.80	-5.22	6.15	-5.95	2.00	2.00	0.00	0.00
2,235.00	5.00	130.35	2,234.68	-7.06	8.31	-8.04	2.00	2.00	0.00	0.00
End Nudge @ 2235.00 ft										
2,300.00	5.00	130.35	2,299.44	-10.73	12.63	-12.22	0.00	0.00	0.00	0.00
2,400.00	5.00	130.35	2,399.05	-16.37	19.27	-18.65	0.00	0.00	0.00	0.00
2,500.00	5.00	130.35	2,498.67	-22.01	25.91	-25.08	0.00	0.00	0.00	0.00
2,600.00	5.00	130.35	2,598.29	-27.65	32.55	-31.50	0.00	0.00	0.00	0.00
2,700.00	5.00	130.35	2,697.91	-33.30	39.19	-37.93	0.00	0.00	0.00	0.00
2,800.00	5.00	130.35	2,797.53	-38.94	45.84	-44.36	0.00	0.00	0.00	0.00
2,900.00	5.00	130.35	2,897.15	-44.58	52.48	-50.79	0.00	0.00	0.00	0.00
3,000.00	5.00	130.35	2,996.77	-50.23	59.12	-57.22	0.00	0.00	0.00	0.00
3,100.00	5.00	130.35	3,096.39	-55.87	65.76	-63.65	0.00	0.00	0.00	0.00
3,200.00	5.00	130.35	3,196.01	-61.51	72.40	-70.07	0.00	0.00	0.00	0.00
3,300.00	5.00	130.35	3,295.63	-67.16	79.05	-76.50	0.00	0.00	0.00	0.00
3,400.00	5.00	130.35	3,395.25	-72.80	85.69	-82.93	0.00	0.00	0.00	0.00
3,500.00	5.00	130.35	3,494.87	-78.44	92.33	-89.36	0.00	0.00	0.00	0.00
3,600.00	5.00	130.35	3,594.49	-84.08	98.97	-95.79	0.00	0.00	0.00	0.00
3,700.00	5.00	130.35	3,694.11	-89.73	105.62	-102.22	0.00	0.00	0.00	0.00
3,800.00	5.00	130.35	3,793.73	-95.37	112.26	-108.64	0.00	0.00	0.00	0.00
3,900.00	5.00	130.35	3,893.35	-101.01	118.90	-115.07	0.00	0.00	0.00	0.00
4,000.00	5.00	130.35	3,992.97	-106.66	125.54	-121.50	0.00	0.00	0.00	0.00
4,100.00	5.00	130.35	4,092.59	-112.30	132.18	-127.93	0.00	0.00	0.00	0.00
4,200.00	5.00	130.35	4,192.21	-117.94	138.83	-134.36	0.00	0.00	0.00	0.00
4,300.00	5.00	130.35	4,291.82	-123.58	145.47	-140.79	0.00	0.00	0.00	0.00
4,400.00	5.00	130.35	4,391.44	-129.23	152.11	-147.21	0.00	0.00	0.00	0.00
4,500.00	5.00	130.35	4,491.06	-134.87	158.75	-153.64	0.00	0.00	0.00	0.00
4,600.00	5.00	130.35	4,590.68	-140.51	165.40	-160.07	0.00	0.00	0.00	0.00
4,700.00	5.00	130.35	4,690.30	-146.16	172.04	-166.50	0.00	0.00	0.00	0.00

Plan Report for B&D Land 4-64 4-1H - 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 (°)
4,800.00	5.00	130.35	4,789.92	-151.80	178.68	-172.93	0.00	0.00	0.00	0.00
4,900.00	5.00	130.35	4,889.54	-157.44	185.32	-179.36	0.00	0.00	0.00	0.00
5,000.00	5.00	130.35	4,989.16	-163.09	191.96	-185.78	0.00	0.00	0.00	0.00
5,100.00	5.00	130.35	5,088.78	-168.73	198.61	-192.21	0.00	0.00	0.00	0.00
5,200.00	5.00	130.35	5,188.40	-174.37	205.25	-198.64	0.00	0.00	0.00	0.00
5,300.00	5.00	130.35	5,288.02	-180.01	211.89	-205.07	0.00	0.00	0.00	0.00
5,400.00	5.00	130.35	5,387.64	-185.66	218.53	-211.50	0.00	0.00	0.00	0.00
5,500.00	5.00	130.35	5,487.26	-191.30	225.17	-217.93	0.00	0.00	0.00	0.00
5,600.00	5.00	130.35	5,586.88	-196.94	231.82	-224.35	0.00	0.00	0.00	0.00
5,700.00	5.00	130.35	5,686.50	-202.59	238.46	-230.78	0.00	0.00	0.00	0.00
5,800.00	5.00	130.35	5,786.12	-208.23	245.10	-237.21	0.00	0.00	0.00	0.00
5,900.00	5.00	130.35	5,885.74	-213.87	251.74	-243.64	0.00	0.00	0.00	0.00
6,000.00	5.00	130.35	5,985.36	-219.51	258.39	-250.07	0.00	0.00	0.00	0.00
6,100.00	5.00	130.35	6,084.98	-225.16	265.03	-256.50	0.00	0.00	0.00	0.00
6,200.00	5.00	130.35	6,184.59	-230.80	271.67	-262.92	0.00	0.00	0.00	0.00
6,300.00	5.00	130.35	6,284.21	-236.44	278.31	-269.35	0.00	0.00	0.00	0.00
6,400.00	5.00	130.35	6,383.83	-242.09	284.95	-275.78	0.00	0.00	0.00	0.00
6,500.00	5.00	130.35	6,483.45	-247.73	291.60	-282.21	0.00	0.00	0.00	0.00
6,501.55	5.00	130.35	6,485.00	-247.82	291.70	-282.31	0.00	0.00	0.00	0.00
Begin Drop @ 6501.55 ft										
6,600.00	3.03	130.35	6,583.20	-252.28	296.95	-287.39	2.00	-2.00	0.00	180.00
6,700.00	1.03	130.35	6,683.13	-254.58	299.65	-290.01	2.00	-2.00	0.00	180.00
6,751.55	0.00	0.00	6,734.68	-254.88	300.01	-290.35	2.00	-2.00	0.00	-180.00
End Drop @ 6751.55 ft										
6,800.00	0.00	0.00	6,783.13	-254.88	300.01	-290.35	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,883.13	-254.88	300.01	-290.35	0.00	0.00	0.00	0.00
6,994.94	0.00	0.00	6,978.07	-254.88	300.01	-290.35	0.00	0.00	0.00	0.00
Kick Off Point @ 6994.94 ft										
7,000.00	0.51	271.00	6,983.13	-254.88	299.99	-290.33	10.00	10.00	0.00	271.00
7,100.00	10.51	271.00	7,082.54	-254.71	290.40	-280.76	10.00	10.00	0.00	0.00
7,200.00	20.51	271.00	7,178.78	-254.24	263.71	-254.10	10.00	10.00	0.00	0.00
7,300.00	30.51	271.00	7,268.92	-253.49	220.71	-211.16	10.00	10.00	0.00	0.00
7,358.85	36.39	271.00	7,318.00	-252.92	188.29	-178.78	10.00	10.00	0.00	0.00
Sharon Springs										
7,400.00	40.51	271.00	7,350.22	-252.47	162.71	-153.24	10.00	10.00	0.00	0.00
7,450.00	45.51	271.00	7,386.77	-251.87	128.62	-119.20	10.00	10.00	0.00	0.00
Build Rate 10.00 °/100 ft										
7,456.06	46.11	271.00	7,391.00	-251.80	124.28	-114.86	10.00	10.00	0.00	0.00
Niobrara										
7,500.00	50.51	271.00	7,420.22	-251.22	91.48	-82.10	10.00	10.00	0.00	0.00
7,588.47	59.35	271.00	7,471.00	-249.96	19.16	-9.87	10.00	10.00	0.00	0.00
Niobrara B										
7,600.00	60.51	271.00	7,476.78	-249.78	9.18	0.09	10.00	10.00	0.00	0.00
7,700.00	70.51	271.00	7,518.18	-248.19	-81.69	90.84	10.00	10.00	0.00	0.00
7,724.97	73.00	271.00	7,526.00	-247.77	-105.40	114.51	10.00	10.00	0.00	0.00
Niobrara C										
7,800.00	80.51	271.00	7,543.18	-246.50	-178.37	187.39	10.00	10.00	0.00	0.00
7,889.61	89.47	271.00	7,551.00	-244.93	-267.54	276.44	10.00	10.00	0.00	0.00
End Build @ 7889.61 ft										
7,900.00	89.47	271.00	7,551.10	-244.75	-277.92	286.81	0.00	0.00	0.00	0.00
8,000.00	89.47	271.00	7,552.03	-243.00	-377.90	386.65	0.00	0.00	0.00	0.00
8,100.00	89.47	271.00	7,552.96	-241.25	-477.88	486.50	0.00	0.00	0.00	0.00
8,200.00	89.47	271.00	7,553.89	-239.50	-577.86	586.35	0.00	0.00	0.00	0.00
8,300.00	89.47	271.00	7,554.82	-237.75	-677.84	686.19	0.00	0.00	0.00	0.00
8,400.00	89.47	271.00	7,555.75	-236.00	-777.82	786.04	0.00	0.00	0.00	0.00
8,500.00	89.47	271.00	7,556.68	-234.25	-877.80	885.89	0.00	0.00	0.00	0.00
8,600.00	89.47	271.00	7,557.61	-232.49	-977.78	985.73	0.00	0.00	0.00	0.00
8,700.00	89.47	271.00	7,558.54	-230.74	-1,077.76	1,085.58	0.00	0.00	0.00	0.00

Plan Report for B&D Land 4-64 4-1H - 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 (°)
8,800.00	89.47	271.00	7,559.46	-228.99	-1,177.74	1,185.43	0.00	0.00	0.00	0.00
8,900.00	89.47	271.00	7,560.39	-227.24	-1,277.72	1,285.27	0.00	0.00	0.00	0.00
9,000.00	89.47	271.00	7,561.32	-225.49	-1,377.70	1,385.12	0.00	0.00	0.00	0.00
9,100.00	89.47	271.00	7,562.25	-223.74	-1,477.69	1,484.97	0.00	0.00	0.00	0.00
9,200.00	89.47	271.00	7,563.18	-221.99	-1,577.67	1,584.81	0.00	0.00	0.00	0.00
9,300.00	89.47	271.00	7,564.11	-220.24	-1,677.65	1,684.66	0.00	0.00	0.00	0.00
9,400.00	89.47	271.00	7,565.04	-218.48	-1,777.63	1,784.51	0.00	0.00	0.00	0.00
9,500.00	89.47	271.00	7,565.97	-216.73	-1,877.61	1,884.35	0.00	0.00	0.00	0.00
9,600.00	89.47	271.00	7,566.90	-214.98	-1,977.59	1,984.20	0.00	0.00	0.00	0.00
9,700.00	89.47	271.00	7,567.83	-213.23	-2,077.57	2,084.05	0.00	0.00	0.00	0.00
9,800.00	89.47	271.00	7,568.76	-211.48	-2,177.55	2,183.89	0.00	0.00	0.00	0.00
9,900.00	89.47	271.00	7,569.69	-209.73	-2,277.53	2,283.74	0.00	0.00	0.00	0.00
10,000.00	89.47	271.00	7,570.62	-207.98	-2,377.51	2,383.59	0.00	0.00	0.00	0.00
10,100.00	89.47	271.00	7,571.55	-206.23	-2,477.49	2,483.43	0.00	0.00	0.00	0.00
10,200.00	89.47	271.00	7,572.48	-204.47	-2,577.47	2,583.28	0.00	0.00	0.00	0.00
10,300.00	89.47	271.00	7,573.41	-202.72	-2,677.45	2,683.13	0.00	0.00	0.00	0.00
10,400.00	89.47	271.00	7,574.34	-200.97	-2,777.43	2,782.97	0.00	0.00	0.00	0.00
10,500.00	89.47	271.00	7,575.27	-199.22	-2,877.41	2,882.82	0.00	0.00	0.00	0.00
10,600.00	89.47	271.00	7,576.19	-197.47	-2,977.39	2,982.67	0.00	0.00	0.00	0.00
10,700.00	89.47	271.00	7,577.12	-195.72	-3,077.37	3,082.51	0.00	0.00	0.00	0.00
10,800.00	89.47	271.00	7,578.05	-193.97	-3,177.35	3,182.36	0.00	0.00	0.00	0.00
10,900.00	89.47	271.00	7,578.98	-192.22	-3,277.33	3,282.21	0.00	0.00	0.00	0.00
11,000.00	89.47	271.00	7,579.91	-190.46	-3,377.31	3,382.05	0.00	0.00	0.00	0.00
11,100.00	89.47	271.00	7,580.84	-188.71	-3,477.29	3,481.90	0.00	0.00	0.00	0.00
11,200.00	89.47	271.00	7,581.77	-186.96	-3,577.27	3,581.75	0.00	0.00	0.00	0.00
11,300.00	89.47	271.00	7,582.70	-185.21	-3,677.25	3,681.59	0.00	0.00	0.00	0.00
11,400.00	89.47	271.00	7,583.63	-183.46	-3,777.23	3,781.44	0.00	0.00	0.00	0.00
11,500.00	89.47	271.00	7,584.56	-181.71	-3,877.21	3,881.29	0.00	0.00	0.00	0.00
11,600.00	89.47	271.00	7,585.49	-179.96	-3,977.19	3,981.13	0.00	0.00	0.00	0.00
11,700.00	89.47	271.00	7,586.42	-178.21	-4,077.17	4,080.98	0.00	0.00	0.00	0.00
11,800.00	89.47	271.00	7,587.35	-176.46	-4,177.15	4,180.82	0.00	0.00	0.00	0.00
11,900.00	89.47	271.00	7,588.28	-174.70	-4,277.13	4,280.67	0.00	0.00	0.00	0.00
12,000.00	89.47	271.00	7,589.21	-172.95	-4,377.12	4,380.52	0.00	0.00	0.00	0.00
12,100.00	89.47	271.00	7,590.14	-171.20	-4,477.10	4,480.36	0.00	0.00	0.00	0.00
12,192.88	89.47	271.00	7,591.00	-169.57	-4,569.96	4,573.11	0.00	0.00	0.00	0.00
Total Depth 12192.88 ft										

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,985.00	1,985.00	0.00	0.00	Begin Nudge @ 1985.00 ft
2,235.00	2,234.68	-7.06	8.31	End Nudge @ 2235.00 ft
6,501.55	6,485.00	-247.82	291.70	Begin Drop @ 6501.55 ft
6,751.55	6,734.68	-254.88	300.01	End Drop @ 6751.55 ft
6,994.94	6,978.07	-254.88	300.01	Kick Off Point @ 6994.94 ft
7,450.00	7,386.77	-251.87	128.62	Build Rate 10.00 °/100 ft
7,889.61	7,551.00	-244.93	-267.54	End Build @ 7889.61 ft
12,192.88	7,591.00	-169.57	-4,569.96	Total Depth 12192.88 ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/-S (usft)	+E/-W (usft)	
Target	B&D Land 4-64 4-1H_Rev A0_BHL Tgt	267.87	Slot	0.00	0.00	0.00

Plan Report for B&D Land 4-64 4-1H - Rev A0

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	1,909.00	Rev A0	MWD
1,909.00	12,192.88	Rev A0	MWD

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,909.00	1,909.00	9 5/8" Casing Pt.	9-5/8	13-1/2

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,585.00	1,585.00	Fox Hills			
1,709.00	1,709.00	Pierre Shale			
1,909.00	1,909.00	Surface Casing			
7,358.85	7,318.00	Sharon Springs			
7,456.06	7,391.00	Niobrara			
7,588.47	7,471.00	Niobrara B			
7,724.97	7,526.00	Niobrara C			

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
C.C.I.A.S. 2 #1-4_SB	0.00	3,890.60	-4,266.16	Circle
B&D Land 4-64 4-1H_SB	0.00	0.00	0.00	Polygon
B&D Land 4-64 4-1H_SL	0.00	0.00	0.00	Polygon
AMOCO-WESTAN-CAVANAUGH 1_SB	-14.90	-1,358.26	-5,608.80	Circle
B&D Land 4-64 4-1H_Rev A0_BHL Tgt	7,591.00	-169.57	-4,569.96	Point
B&D Land 4-64 4-1H_Rev A0_EPI	7,591.00	-171.62	-4,434.93	Point

Directional Difficulty Index

Average Dogleg over Survey:	0.82 °/100usft	Maximum Dogleg over Survey:	10.00 °/100usft at 7,889.61 usft
Net Tortousity applicable to Plans:	0.82 °/100usft	Directional Difficulty Index:	6.113

Audit Info

North Reference Sheet for Sec. 4-T4S-R64W (B&D Land 4-64 Pad) - B&D Land 4-64
4-1H - 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 KB 24 ft @ 5641.20usft (H&P 280). Northing and Easting are relative to B&D Land 4-64 4-1H
Coordinate System is US State Plane 1983, Colorado Central 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° 0' 0.000 E°, Latitude Origin:39° 45' 0.000 N°
False Easting: 3,000,000.00usft, False Northing: 1,000,000.00usft, Scale Reduction: 0.99999547

Grid Coordinates of Well: 1,690,983.70 usft N, 3,268,027.97 usft E
Geographical Coordinates of Well: 39° 43' 36.10" N, 104° 32' 49.49" W
Grid Convergence at Surface is: 0.60°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,192.88usft
the Bottom Hole Displacement is 4,573.11usft in the Direction of 267.87° (True).
Magnetic Convergence at surface is: -7.73° (14 November 2014, , BGGM2014)

