

Conoco Phillips Company

Adams County, Colorado

Sec. 14-T3S-65W

Box Elder 3-65 13-14 4H

Plan B

Plan: Rev B0

Sperry Drilling Services

Proposal Report

01 August, 2014

Well Coordinates: 1,165,728.59 N, 3,241,968.64 E (39° 47' 06.25" N, 104° 38' 20.40" W)

Ground Level: 5,462.40 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 Box Elder 3-65 13-14 4H

KB 24 ft @ 5486.40usft (H&P 280)

N

True

API - US Survey Feet - Custom

HALLIBURTON

Project: Adams County, Colorado
Site: Sec. 14-T3S-65W
Well: Box Elder 3-65 13-14 4H
Wellbore: Plan B
Plan: Rev B0

Conoco Phillips Company

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	2125.00	0.00	0.00	2125.00	0.00	0.00	0.00	0.00	0.00	
3	2350.00	4.50	271.25	2349.77	0.19	-8.83	2.00	271.25	-8.83	
4	6588.30	4.50	271.25	6575.00	7.45	-341.28	0.00	0.00	-341.35	
5	6813.30	0.00	0.00	6799.77	7.64	-350.11	2.00	180.00	-350.18	
6	7102.60	0.00	0.00	7089.07	7.64	-350.11	0.00	0.00	-350.18	
7	8008.20	90.56	90.69	7662.00	0.71	228.41	10.00	90.69	228.38	
8	17619.71	90.56	90.69	7568.00	-114.41	9838.77	0.00	0.00	9839.43	Box Elder 3-65 13-14 4H_Rev B0_BHL Tgt

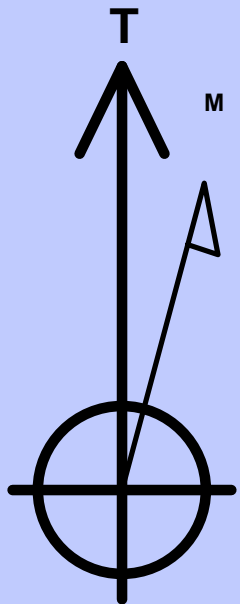
Plan: Rev B0 (Box Elder 3-65 13-14 4H/Plan B)

Created By: Kansa B. Becker Date: 20:53, August 01 2014

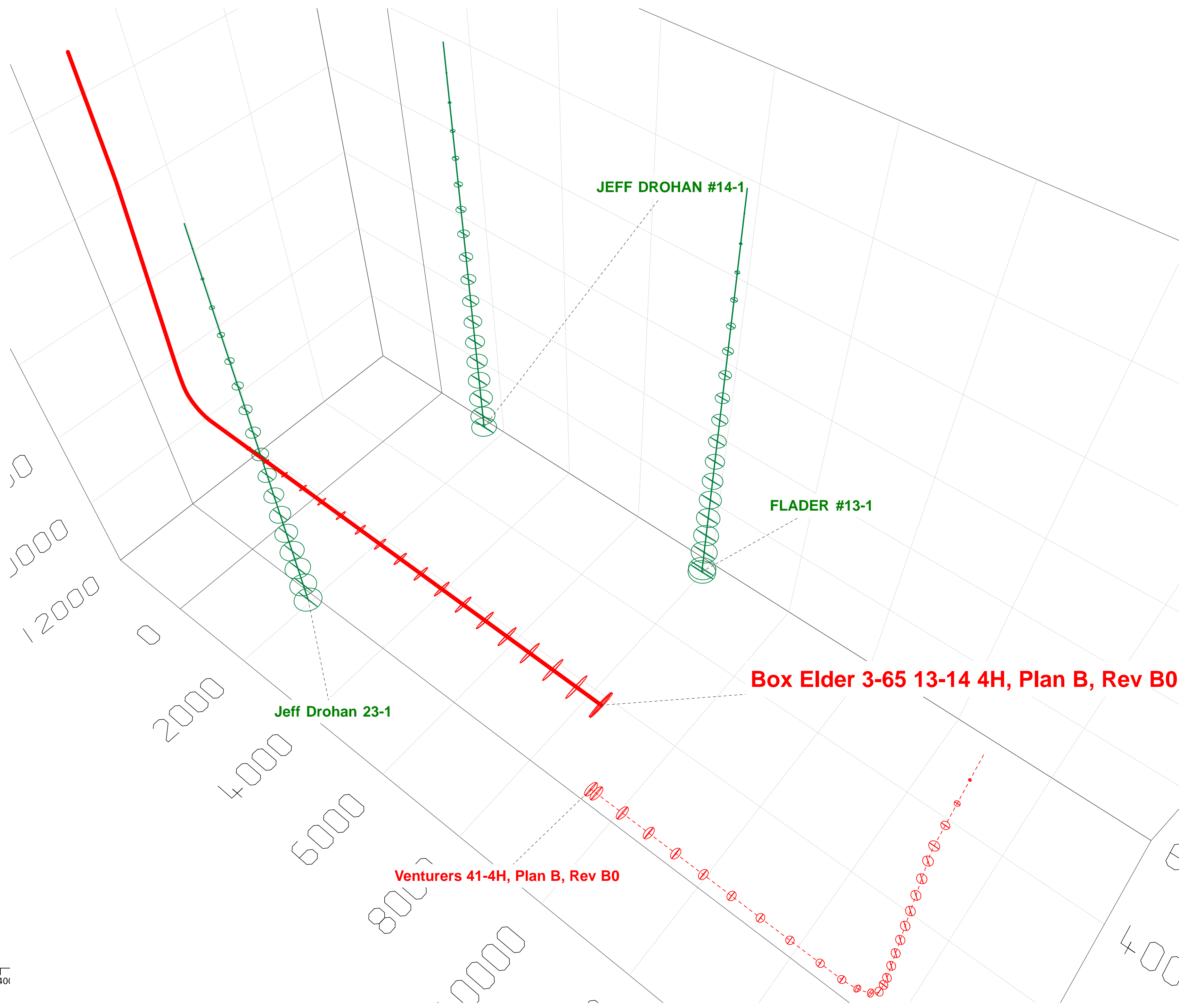
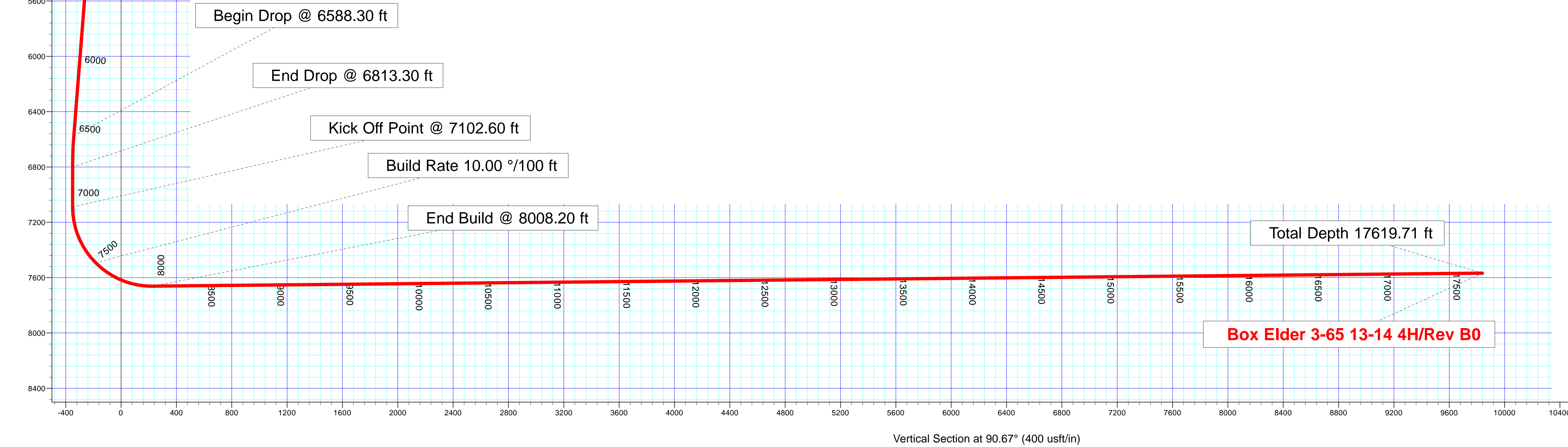
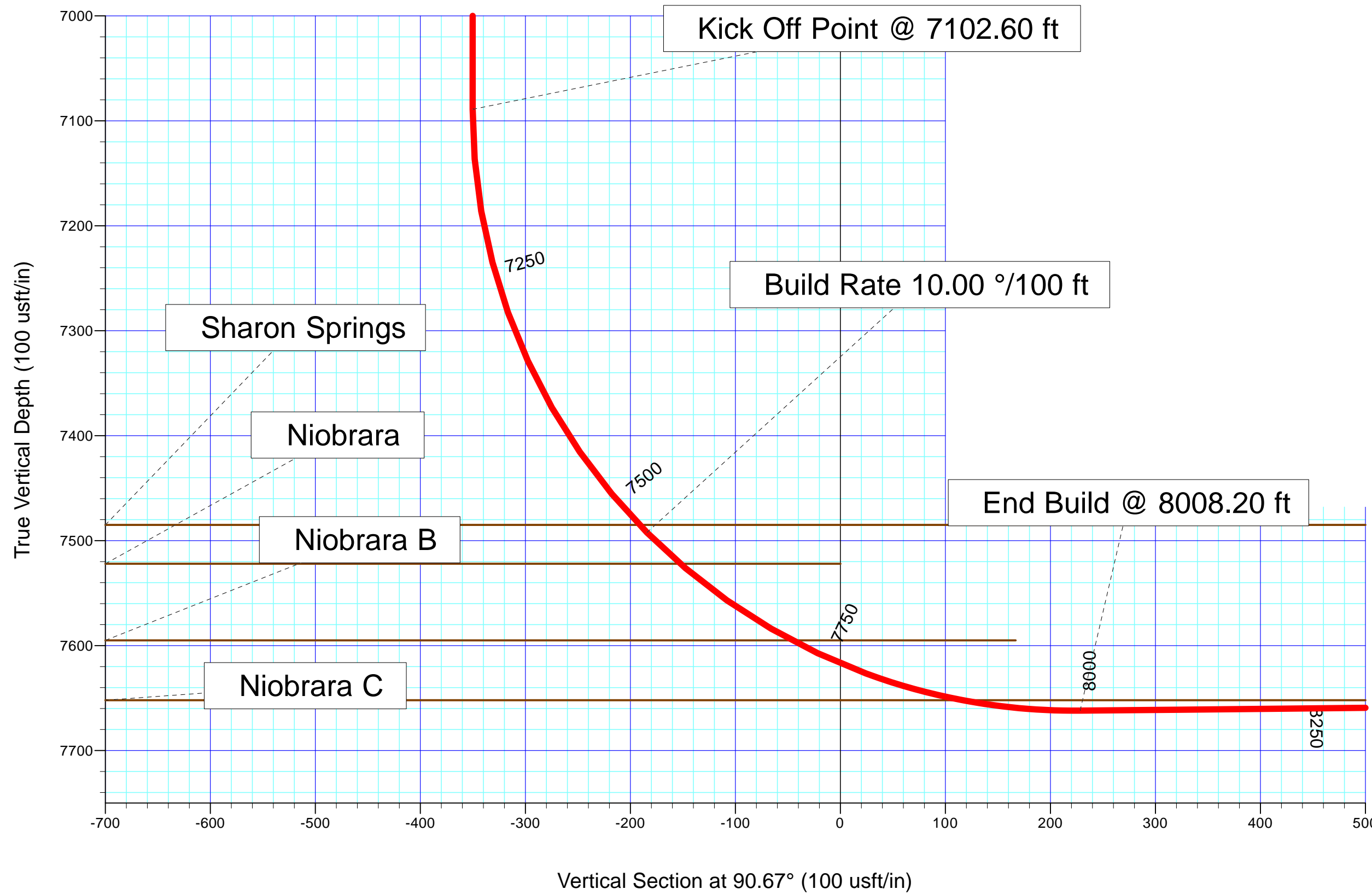
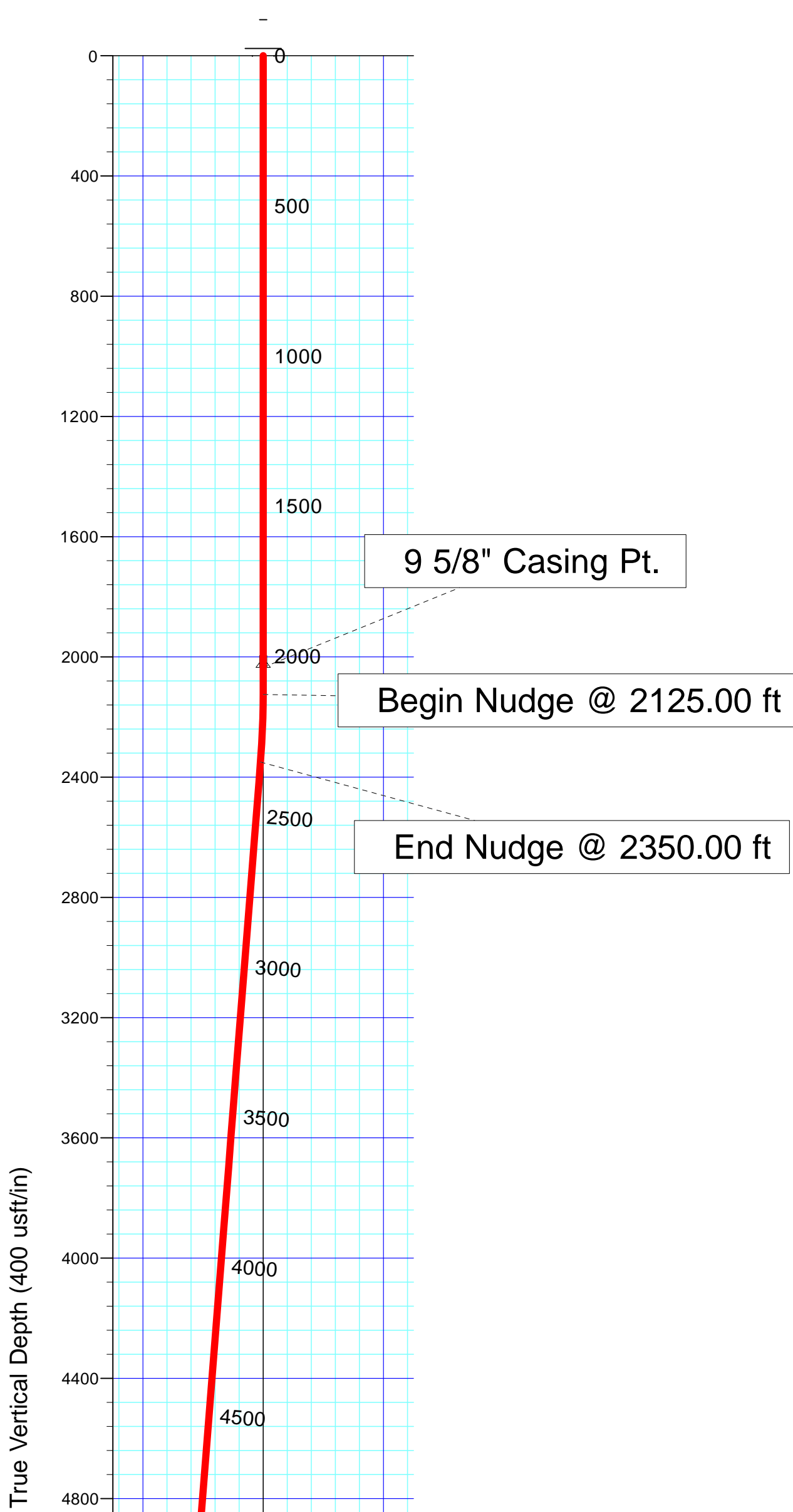
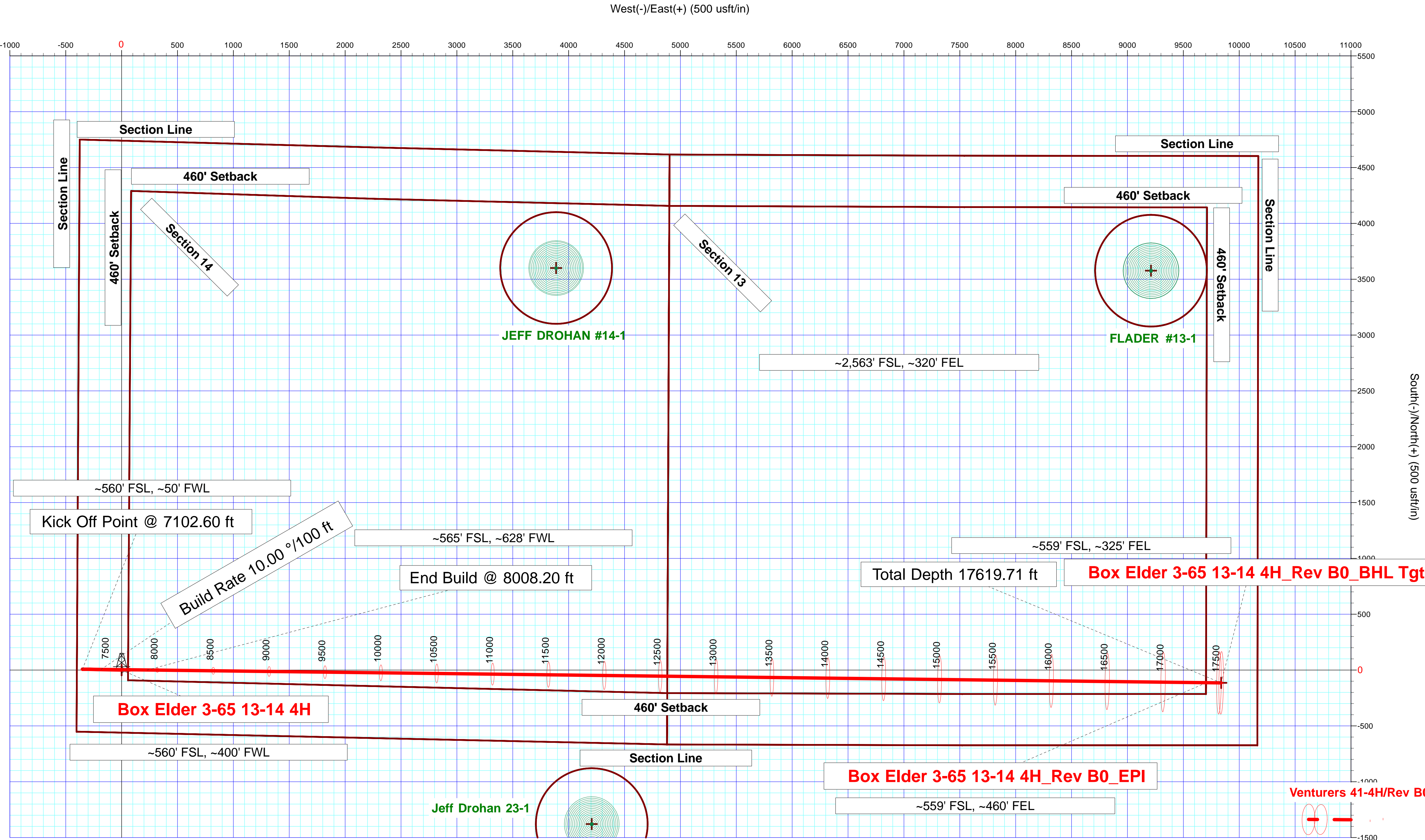
Checked: Date:

Reviewed: Date:

Approved: Date:



Azimuths to True North
Magnetic Field
Magnetic North: 8.39°
Strength: 52346.9snT
Dip Angle: 66.45°
Date: 10/30/2014
Model: BGGM2014



Plan Report for Box Elder 3-65 13-14 4H - Rev B0

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
1,562.00	0.00	0.00	1,562.00	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
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,835.00	0.00	0.00	1,835.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre Shale										
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,035.00	0.00	0.00	2,035.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Surface Casing - 9 5/8" Casing Pt.										
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,125.00	0.00	0.00	2,125.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 2125.00 ft										
2,200.00	1.50	271.25	2,199.99	0.02	-0.98	-0.98	2.00	2.00	0.00	271.25
2,300.00	3.50	271.25	2,299.89	0.12	-5.34	-5.34	2.00	2.00	0.00	0.00
2,350.00	4.50	271.25	2,349.77	0.19	-8.83	-8.83	2.00	2.00	0.00	0.00
End Nudge @ 2350.00 ft										
2,400.00	4.50	271.25	2,399.61	0.28	-12.75	-12.75	0.00	0.00	0.00	0.00
2,500.00	4.50	271.25	2,499.31	0.45	-20.60	-20.60	0.00	0.00	0.00	0.00
2,600.00	4.50	271.25	2,599.00	0.62	-28.44	-28.44	0.00	0.00	0.00	0.00
2,700.00	4.50	271.25	2,698.69	0.79	-36.28	-36.29	0.00	0.00	0.00	0.00
2,800.00	4.50	271.25	2,798.38	0.96	-44.13	-44.14	0.00	0.00	0.00	0.00
2,900.00	4.50	271.25	2,898.07	1.13	-51.97	-51.98	0.00	0.00	0.00	0.00
3,000.00	4.50	271.25	2,997.77	1.31	-59.82	-59.83	0.00	0.00	0.00	0.00
3,100.00	4.50	271.25	3,097.46	1.48	-67.66	-67.67	0.00	0.00	0.00	0.00
3,200.00	4.50	271.25	3,197.15	1.65	-75.50	-75.52	0.00	0.00	0.00	0.00
3,300.00	4.50	271.25	3,296.84	1.82	-83.35	-83.36	0.00	0.00	0.00	0.00
3,400.00	4.50	271.25	3,396.53	1.99	-91.19	-91.21	0.00	0.00	0.00	0.00
3,500.00	4.50	271.25	3,496.22	2.16	-99.04	-99.05	0.00	0.00	0.00	0.00
3,600.00	4.50	271.25	3,595.92	2.33	-106.88	-106.90	0.00	0.00	0.00	0.00
3,700.00	4.50	271.25	3,695.61	2.50	-114.72	-114.75	0.00	0.00	0.00	0.00
3,800.00	4.50	271.25	3,795.30	2.67	-122.57	-122.59	0.00	0.00	0.00	0.00
3,900.00	4.50	271.25	3,894.99	2.85	-130.41	-130.44	0.00	0.00	0.00	0.00
4,000.00	4.50	271.25	3,994.68	3.02	-138.26	-138.28	0.00	0.00	0.00	0.00
4,100.00	4.50	271.25	4,094.37	3.19	-146.10	-146.13	0.00	0.00	0.00	0.00
4,200.00	4.50	271.25	4,194.07	3.36	-153.94	-153.97	0.00	0.00	0.00	0.00
4,300.00	4.50	271.25	4,293.76	3.53	-161.79	-161.82	0.00	0.00	0.00	0.00
4,400.00	4.50	271.25	4,393.45	3.70	-169.63	-169.66	0.00	0.00	0.00	0.00
4,500.00	4.50	271.25	4,493.14	3.87	-177.48	-177.51	0.00	0.00	0.00	0.00
4,600.00	4.50	271.25	4,592.83	4.04	-185.32	-185.35	0.00	0.00	0.00	0.00
4,700.00	4.50	271.25	4,692.52	4.21	-193.16	-193.20	0.00	0.00	0.00	0.00

Plan Report for Box Elder 3-65 13-14 4H - Rev B0

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	4.50	271.25	4,792.22	4.39	-201.01	-201.05	0.00	0.00	0.00	0.00
4,900.00	4.50	271.25	4,891.91	4.56	-208.85	-208.89	0.00	0.00	0.00	0.00
5,000.00	4.50	271.25	4,991.60	4.73	-216.70	-216.74	0.00	0.00	0.00	0.00
5,100.00	4.50	271.25	5,091.29	4.90	-224.54	-224.58	0.00	0.00	0.00	0.00
5,200.00	4.50	271.25	5,190.98	5.07	-232.38	-232.43	0.00	0.00	0.00	0.00
5,300.00	4.50	271.25	5,290.67	5.24	-240.23	-240.27	0.00	0.00	0.00	0.00
5,400.00	4.50	271.25	5,390.37	5.41	-248.07	-248.12	0.00	0.00	0.00	0.00
5,500.00	4.50	271.25	5,490.06	5.58	-255.92	-255.96	0.00	0.00	0.00	0.00
5,600.00	4.50	271.25	5,589.75	5.76	-263.76	-263.81	0.00	0.00	0.00	0.00
5,700.00	4.50	271.25	5,689.44	5.93	-271.60	-271.66	0.00	0.00	0.00	0.00
5,800.00	4.50	271.25	5,789.13	6.10	-279.45	-279.50	0.00	0.00	0.00	0.00
5,900.00	4.50	271.25	5,888.83	6.27	-287.29	-287.35	0.00	0.00	0.00	0.00
6,000.00	4.50	271.25	5,988.52	6.44	-295.14	-295.19	0.00	0.00	0.00	0.00
6,100.00	4.50	271.25	6,088.21	6.61	-302.98	-303.04	0.00	0.00	0.00	0.00
6,200.00	4.50	271.25	6,187.90	6.78	-310.82	-310.88	0.00	0.00	0.00	0.00
6,300.00	4.50	271.25	6,287.59	6.95	-318.67	-318.73	0.00	0.00	0.00	0.00
6,400.00	4.50	271.25	6,387.28	7.12	-326.51	-326.57	0.00	0.00	0.00	0.00
6,500.00	4.50	271.25	6,486.98	7.30	-334.36	-334.42	0.00	0.00	0.00	0.00
6,588.30	4.50	271.25	6,575.00	7.45	-341.28	-341.35	0.00	0.00	0.00	0.00
Begin Drop @ 6588.30 ft										
6,600.00	4.27	271.25	6,586.67	7.47	-342.18	-342.24	2.00	-2.00	0.00	180.00
6,700.00	2.27	271.25	6,686.50	7.59	-347.87	-347.94	2.00	-2.00	0.00	180.00
6,800.00	0.27	271.25	6,786.47	7.64	-350.08	-350.15	2.00	-2.00	0.00	180.00
6,813.30	0.00	0.00	6,799.77	7.64	-350.11	-350.18	2.00	-2.00	0.00	180.00
End Drop @ 6813.30 ft										
6,900.00	0.00	0.00	6,886.47	7.64	-350.11	-350.18	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	6,986.47	7.64	-350.11	-350.18	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,086.47	7.64	-350.11	-350.18	0.00	0.00	0.00	0.00
7,102.60	0.00	0.00	7,089.07	7.64	-350.11	-350.18	0.00	0.00	0.00	0.00
Kick Off Point @ 7102.60 ft										
7,200.00	9.74	90.69	7,186.00	7.54	-341.85	-341.92	10.00	10.00	0.00	90.69
7,300.00	19.74	90.69	7,282.59	7.24	-316.44	-316.51	10.00	10.00	0.00	0.00
7,400.00	29.74	90.69	7,373.30	6.74	-274.65	-274.71	10.00	10.00	0.00	0.00
7,500.00	39.74	90.69	7,455.37	6.05	-217.74	-217.80	10.00	10.00	0.00	0.00
7,539.71	43.71	90.69	7,485.00	5.74	-191.32	-191.37	10.00	10.00	0.00	0.00
Sharon Springs										
7,550.00	44.74	90.69	7,492.37	5.65	-184.14	-184.19	10.00	10.00	0.00	0.00
Build Rate 10.00 °/100 ft										
7,593.38	49.08	90.69	7,522.00	5.27	-152.47	-152.52	10.00	10.00	0.00	0.00
Niobrara										
7,600.00	49.74	90.69	7,526.31	5.21	-147.45	-147.50	10.00	10.00	0.00	0.00
7,700.00	59.74	90.69	7,583.96	4.23	-65.90	-65.94	10.00	10.00	0.00	0.00
7,722.68	62.01	90.69	7,595.00	4.00	-46.09	-46.13	10.00	10.00	0.00	0.00
Niobrara B										
7,800.00	69.74	90.69	7,626.58	3.15	24.42	24.38	10.00	10.00	0.00	0.00
7,895.24	79.26	90.69	7,652.00	2.05	116.09	116.05	10.00	10.00	0.00	0.00
Niobrara C										
7,900.00	79.74	90.69	7,652.87	2.00	120.76	120.73	10.00	10.00	0.00	0.00
8,000.00	89.74	90.69	7,662.02	0.81	220.21	220.18	10.00	10.00	0.00	0.00
8,008.20	90.56	90.69	7,662.00	0.71	228.41	228.38	10.00	10.00	0.00	0.00
End Build @ 8008.20 ft										
8,100.00	90.56	90.69	7,661.10	-0.39	320.20	320.18	0.00	0.00	0.00	0.00
8,200.00	90.56	90.69	7,660.12	-1.59	420.18	420.17	0.00	0.00	0.00	0.00
8,300.00	90.56	90.69	7,659.15	-2.79	520.17	520.17	0.00	0.00	0.00	0.00
8,400.00	90.56	90.69	7,658.17	-3.98	620.16	620.16	0.00	0.00	0.00	0.00
8,500.00	90.56	90.69	7,657.19	-5.18	720.15	720.16	0.00	0.00	0.00	0.00
8,600.00	90.56	90.69	7,656.21	-6.38	820.14	820.15	0.00	0.00	0.00	0.00
8,700.00	90.56	90.69	7,655.23	-7.58	920.12	920.15	0.00	0.00	0.00	0.00

Plan Report for Box Elder 3-65 13-14 4H - Rev B0

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	90.56	90.69	7,654.26	-8.77	1,020.11	1,020.14	0.00	0.00	0.00	0.00
8,900.00	90.56	90.69	7,653.28	-9.97	1,120.10	1,120.14	0.00	0.00	0.00	0.00
9,000.00	90.56	90.69	7,652.30	-11.17	1,220.09	1,220.14	0.00	0.00	0.00	0.00
9,100.00	90.56	90.69	7,651.32	-12.37	1,320.08	1,320.13	0.00	0.00	0.00	0.00
9,200.00	90.56	90.69	7,650.34	-13.57	1,420.06	1,420.13	0.00	0.00	0.00	0.00
9,300.00	90.56	90.69	7,649.37	-14.76	1,520.05	1,520.12	0.00	0.00	0.00	0.00
9,400.00	90.56	90.69	7,648.39	-15.96	1,620.04	1,620.12	0.00	0.00	0.00	0.00
9,500.00	90.56	90.69	7,647.41	-17.16	1,720.03	1,720.11	0.00	0.00	0.00	0.00
9,600.00	90.56	90.69	7,646.43	-18.36	1,820.02	1,820.11	0.00	0.00	0.00	0.00
9,700.00	90.56	90.69	7,645.45	-19.55	1,920.00	1,920.10	0.00	0.00	0.00	0.00
9,800.00	90.56	90.69	7,644.48	-20.75	2,019.99	2,020.10	0.00	0.00	0.00	0.00
9,900.00	90.56	90.69	7,643.50	-21.95	2,119.98	2,120.09	0.00	0.00	0.00	0.00
10,000.00	90.56	90.69	7,642.52	-23.15	2,219.97	2,220.09	0.00	0.00	0.00	0.00
10,100.00	90.56	90.69	7,641.54	-24.35	2,319.96	2,320.08	0.00	0.00	0.00	0.00
10,200.00	90.56	90.69	7,640.56	-25.54	2,419.94	2,420.08	0.00	0.00	0.00	0.00
10,300.00	90.56	90.69	7,639.59	-26.74	2,519.93	2,520.07	0.00	0.00	0.00	0.00
10,400.00	90.56	90.69	7,638.61	-27.94	2,619.92	2,620.07	0.00	0.00	0.00	0.00
10,500.00	90.56	90.69	7,637.63	-29.14	2,719.91	2,720.06	0.00	0.00	0.00	0.00
10,600.00	90.56	90.69	7,636.65	-30.33	2,819.90	2,820.06	0.00	0.00	0.00	0.00
10,700.00	90.56	90.69	7,635.67	-31.53	2,919.88	2,920.05	0.00	0.00	0.00	0.00
10,800.00	90.56	90.69	7,634.70	-32.73	3,019.87	3,020.05	0.00	0.00	0.00	0.00
10,900.00	90.56	90.69	7,633.72	-33.93	3,119.86	3,120.04	0.00	0.00	0.00	0.00
11,000.00	90.56	90.69	7,632.74	-35.13	3,219.85	3,220.04	0.00	0.00	0.00	0.00
11,100.00	90.56	90.69	7,631.76	-36.32	3,319.84	3,320.03	0.00	0.00	0.00	0.00
11,200.00	90.56	90.69	7,630.78	-37.52	3,419.82	3,420.03	0.00	0.00	0.00	0.00
11,300.00	90.56	90.69	7,629.81	-38.72	3,519.81	3,520.03	0.00	0.00	0.00	0.00
11,400.00	90.56	90.69	7,628.83	-39.92	3,619.80	3,620.02	0.00	0.00	0.00	0.00
11,500.00	90.56	90.69	7,627.85	-41.11	3,719.79	3,720.02	0.00	0.00	0.00	0.00
11,600.00	90.56	90.69	7,626.87	-42.31	3,819.78	3,820.01	0.00	0.00	0.00	0.00
11,700.00	90.56	90.69	7,625.89	-43.51	3,919.77	3,920.01	0.00	0.00	0.00	0.00
11,800.00	90.56	90.69	7,624.92	-44.71	4,019.75	4,020.00	0.00	0.00	0.00	0.00
11,900.00	90.56	90.69	7,623.94	-45.91	4,119.74	4,120.00	0.00	0.00	0.00	0.00
12,000.00	90.56	90.69	7,622.96	-47.10	4,219.73	4,219.99	0.00	0.00	0.00	0.00
12,100.00	90.56	90.69	7,621.98	-48.30	4,319.72	4,319.99	0.00	0.00	0.00	0.00
12,200.00	90.56	90.69	7,621.00	-49.50	4,419.71	4,419.98	0.00	0.00	0.00	0.00
12,300.00	90.56	90.69	7,620.03	-50.70	4,519.69	4,519.98	0.00	0.00	0.00	0.00
12,400.00	90.56	90.69	7,619.05	-51.89	4,619.68	4,619.97	0.00	0.00	0.00	0.00
12,500.00	90.56	90.69	7,618.07	-53.09	4,719.67	4,719.97	0.00	0.00	0.00	0.00
12,600.00	90.56	90.69	7,617.09	-54.29	4,819.66	4,819.96	0.00	0.00	0.00	0.00
12,700.00	90.56	90.69	7,616.11	-55.49	4,919.65	4,919.96	0.00	0.00	0.00	0.00
12,800.00	90.56	90.69	7,615.14	-56.69	5,019.63	5,019.95	0.00	0.00	0.00	0.00
12,900.00	90.56	90.69	7,614.16	-57.88	5,119.62	5,119.95	0.00	0.00	0.00	0.00
13,000.00	90.56	90.69	7,613.18	-59.08	5,219.61	5,219.94	0.00	0.00	0.00	0.00
13,100.00	90.56	90.69	7,612.20	-60.28	5,319.60	5,319.94	0.00	0.00	0.00	0.00
13,200.00	90.56	90.69	7,611.22	-61.48	5,419.59	5,419.93	0.00	0.00	0.00	0.00
13,300.00	90.56	90.69	7,610.25	-62.67	5,519.57	5,519.93	0.00	0.00	0.00	0.00
13,400.00	90.56	90.69	7,609.27	-63.87	5,619.56	5,619.92	0.00	0.00	0.00	0.00
13,500.00	90.56	90.69	7,608.29	-65.07	5,719.55	5,719.92	0.00	0.00	0.00	0.00
13,600.00	90.56	90.69	7,607.31	-66.27	5,819.54	5,819.92	0.00	0.00	0.00	0.00
13,700.00	90.56	90.69	7,606.33	-67.47	5,919.53	5,919.91	0.00	0.00	0.00	0.00
13,800.00	90.56	90.69	7,605.36	-68.66	6,019.51	6,019.91	0.00	0.00	0.00	0.00
13,900.00	90.56	90.69	7,604.38	-69.86	6,119.50	6,119.90	0.00	0.00	0.00	0.00
14,000.00	90.56	90.69	7,603.40	-71.06	6,219.49	6,219.90	0.00	0.00	0.00	0.00
14,100.00	90.56	90.69	7,602.42	-72.26	6,319.48	6,319.89	0.00	0.00	0.00	0.00
14,200.00	90.56	90.69	7,601.44	-73.45	6,419.47	6,419.89	0.00	0.00	0.00	0.00
14,300.00	90.56	90.69	7,600.47	-74.65	6,519.45	6,519.88	0.00	0.00	0.00	0.00
14,400.00	90.56	90.69	7,599.49	-75.85	6,619.44	6,619.88	0.00	0.00	0.00	0.00
14,500.00	90.56	90.69	7,598.51	-77.05	6,719.43	6,719.87	0.00	0.00	0.00	0.00
14,600.00	90.56	90.69	7,597.53	-78.25	6,819.42	6,819.87	0.00	0.00	0.00	0.00
14,700.00	90.56	90.69	7,596.55	-79.44	6,919.41	6,919.86	0.00	0.00	0.00	0.00

Plan Report for Box Elder 3-65 13-14 4H - Rev B0

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 (°)
14,800.00	90.56	90.69	7,595.58	-80.64	7,019.39	7,019.86	0.00	0.00	0.00	0.00
14,900.00	90.56	90.69	7,594.60	-81.84	7,119.38	7,119.85	0.00	0.00	0.00	0.00
15,000.00	90.56	90.69	7,593.62	-83.04	7,219.37	7,219.85	0.00	0.00	0.00	0.00
15,100.00	90.56	90.69	7,592.64	-84.23	7,319.36	7,319.84	0.00	0.00	0.00	0.00
15,200.00	90.56	90.69	7,591.66	-85.43	7,419.35	7,419.84	0.00	0.00	0.00	0.00
15,300.00	90.56	90.69	7,590.69	-86.63	7,519.33	7,519.83	0.00	0.00	0.00	0.00
15,400.00	90.56	90.69	7,589.71	-87.83	7,619.32	7,619.83	0.00	0.00	0.00	0.00
15,500.00	90.56	90.69	7,588.73	-89.02	7,719.31	7,719.82	0.00	0.00	0.00	0.00
15,600.00	90.56	90.69	7,587.75	-90.22	7,819.30	7,819.82	0.00	0.00	0.00	0.00
15,700.00	90.56	90.69	7,586.77	-91.42	7,919.29	7,919.81	0.00	0.00	0.00	0.00
15,800.00	90.56	90.69	7,585.80	-92.62	8,019.27	8,019.81	0.00	0.00	0.00	0.00
15,900.00	90.56	90.69	7,584.82	-93.82	8,119.26	8,119.80	0.00	0.00	0.00	0.00
16,000.00	90.56	90.69	7,583.84	-95.01	8,219.25	8,219.80	0.00	0.00	0.00	0.00
16,100.00	90.56	90.69	7,582.86	-96.21	8,319.24	8,319.80	0.00	0.00	0.00	0.00
16,200.00	90.56	90.69	7,581.88	-97.41	8,419.23	8,419.79	0.00	0.00	0.00	0.00
16,300.00	90.56	90.69	7,580.91	-98.61	8,519.22	8,519.79	0.00	0.00	0.00	0.00
16,400.00	90.56	90.69	7,579.93	-99.80	8,619.20	8,619.78	0.00	0.00	0.00	0.00
16,500.00	90.56	90.69	7,578.95	-101.00	8,719.19	8,719.78	0.00	0.00	0.00	0.00
16,600.00	90.56	90.69	7,577.97	-102.20	8,819.18	8,819.77	0.00	0.00	0.00	0.00
16,700.00	90.56	90.69	7,576.99	-103.40	8,919.17	8,919.77	0.00	0.00	0.00	0.00
16,800.00	90.56	90.69	7,576.02	-104.60	9,019.16	9,019.76	0.00	0.00	0.00	0.00
16,900.00	90.56	90.69	7,575.04	-105.79	9,119.14	9,119.76	0.00	0.00	0.00	0.00
17,000.00	90.56	90.69	7,574.06	-106.99	9,219.13	9,219.75	0.00	0.00	0.00	0.00
17,100.00	90.56	90.69	7,573.08	-108.19	9,319.12	9,319.75	0.00	0.00	0.00	0.00
17,200.00	90.56	90.69	7,572.10	-109.39	9,419.11	9,419.74	0.00	0.00	0.00	0.00
17,300.00	90.56	90.69	7,571.13	-110.58	9,519.10	9,519.74	0.00	0.00	0.00	0.00
17,400.00	90.56	90.69	7,570.15	-111.78	9,619.08	9,619.73	0.00	0.00	0.00	0.00
17,500.00	90.56	90.69	7,569.17	-112.98	9,719.07	9,719.73	0.00	0.00	0.00	0.00
17,600.00	90.56	90.69	7,568.19	-114.18	9,819.06	9,819.72	0.00	0.00	0.00	0.00
17,619.71	90.56	90.69	7,568.00	-114.41	9,838.77	9,839.43	0.00	0.00	0.00	0.00
Total Depth 17619.71 ft										

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,125.00	2,125.00	0.00	0.00	Begin Nudge @ 2125.00 ft
2,350.00	2,349.77	0.19	-8.83	End Nudge @ 2350.00 ft
6,588.30	6,575.00	7.45	-341.28	Begin Drop @ 6588.30 ft
6,813.30	6,799.77	7.64	-350.11	End Drop @ 6813.30 ft
7,102.60	7,089.07	7.64	-350.11	Kick Off Point @ 7102.60 ft
7,550.00	7,492.37	5.65	-184.14	Build Rate 10.00 °/100 ft
8,008.20	7,662.00	0.71	228.41	End Build @ 8008.20 ft
17,619.71	7,568.00	-114.41	9,838.77	Total Depth 17619.71 ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/_S (usft)	+E/-W (usft)	
Target	Box Elder 3-65 13-14 4H_Rev B0_BHL Tgt	90.67	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	2,035.00	Rev B0	NS-GYRO-MS

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Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
2,035.00	17,619.71	Rev B0	MWD

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
2,035.00	2,035.00	9 5/8" Casing Pt.	9-5/8	13-1/2

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,562.00	1,562.00	Fox Hills			
1,835.00	1,835.00	Pierre Shale			
2,035.00	2,035.00	Surface Casing			
7,539.71	7,485.00	Sharon Springs			
7,593.38	7,522.00	Niobrara			
7,722.68	7,595.00	Niobrara B			
7,895.24	7,652.00	Niobrara C			

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
Jeff Drohan 23-1_SB	0.00	-1,378.91	4,206.85	Circle
Box Elder 3-65 13-14 4H_SL	0.00	0.00	0.00	Polygon
Flader #13-1_SB	0.00	3,576.52	9,210.87	Circle
Jeff Drohan #14-1_SB	0.00	3,600.62	3,888.46	Circle
Box Elder 3-65 13-14 4H_SB	0.00	0.00	0.00	Polygon
Box Elder 3-65 13-14 4H_Rev B0_EPI	7,568.00	-114.47	9,703.71	Point
Box Elder 3-65 13-14 4H_Rev B0_BHL Tgt	7,568.00	-114.41	9,838.77	Point

Directional Difficulty Index

Average Dogleg over Survey:	0.57 °/100usft	Maximum Dogleg over Survey:	10.00 °/100usft at 8,008.20 usft
Net Tortousity applicable to Plans:	0.57 °/100usft	Directional Difficulty Index:	6.508

Audit Info

North Reference Sheet for Sec. 14-T3S-65W - Box Elder 3-65 13-14 4H - Plan B

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 @ 5486.40usft (H&P 280). Northing and Easting are relative to Box Elder 3-65 13-14 4H
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° 0' 0.000 E°, Latitude Origin:40° 47' 0.000 N°
False Easting: 3,000,000.00usft, False Northing: 1,000,000.00usft, Scale Reduction: 0.99998966

Grid Coordinates of Well: 1,165,728.59 usft N, 3,241,968.64 usft E
Geographical Coordinates of Well: 39° 47' 06.25" N, 104° 38' 20.40" W
Grid Convergence at Surface is: 0.56°

Based upon Minimum Curvature type calculations, at a Measured Depth of 17,619.71usft
the Bottom Hole Displacement is 9,839.43usft in the Direction of 90.67° (True).
Magnetic Convergence at surface is: -7.84° (30 October 2014, , BGGM2014)

