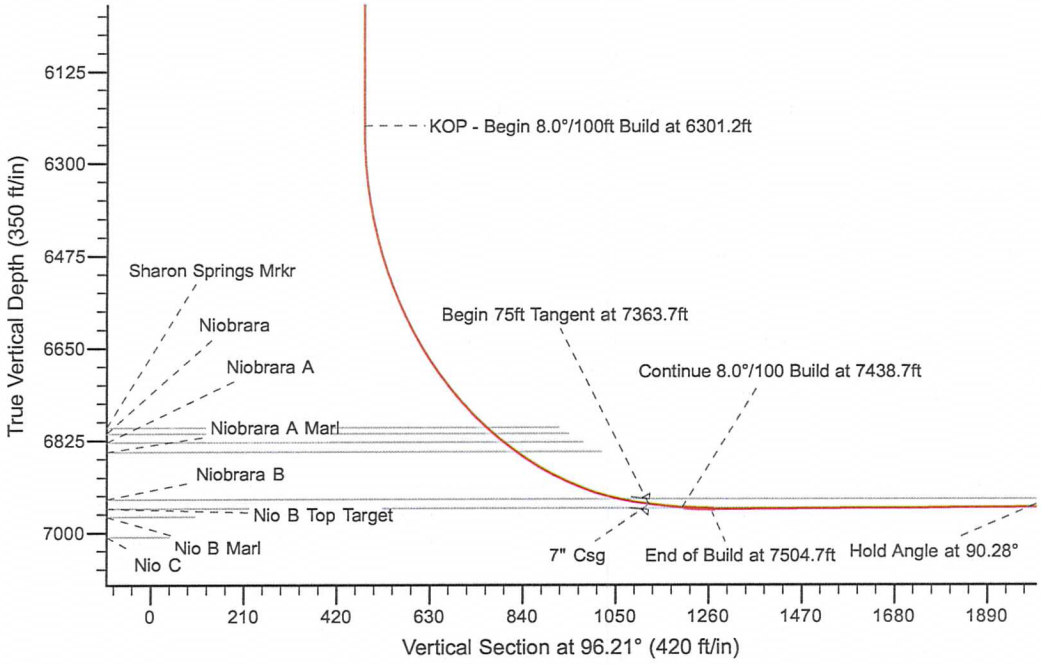
Project: Weld County Colorado (NAD 83)
Site: Sec.34, T7N, R64W
Well: Dyer USX AB35-68-1HN
Wellbore: Plan A - Rev 0 (PERMITTING PLAN ONLY)
Design: Plan A - Rev 0 Proposal

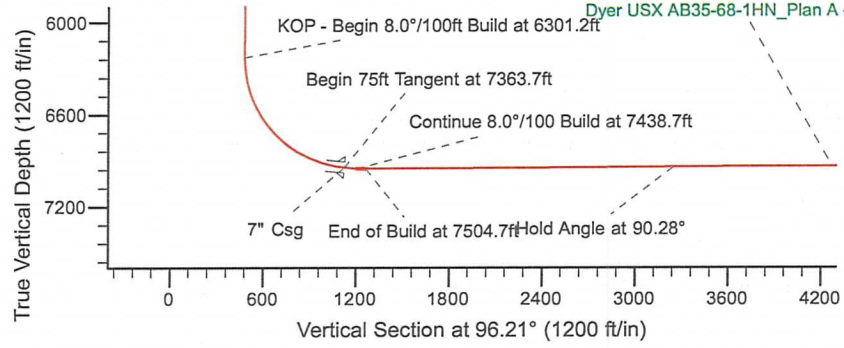
Noble Energy

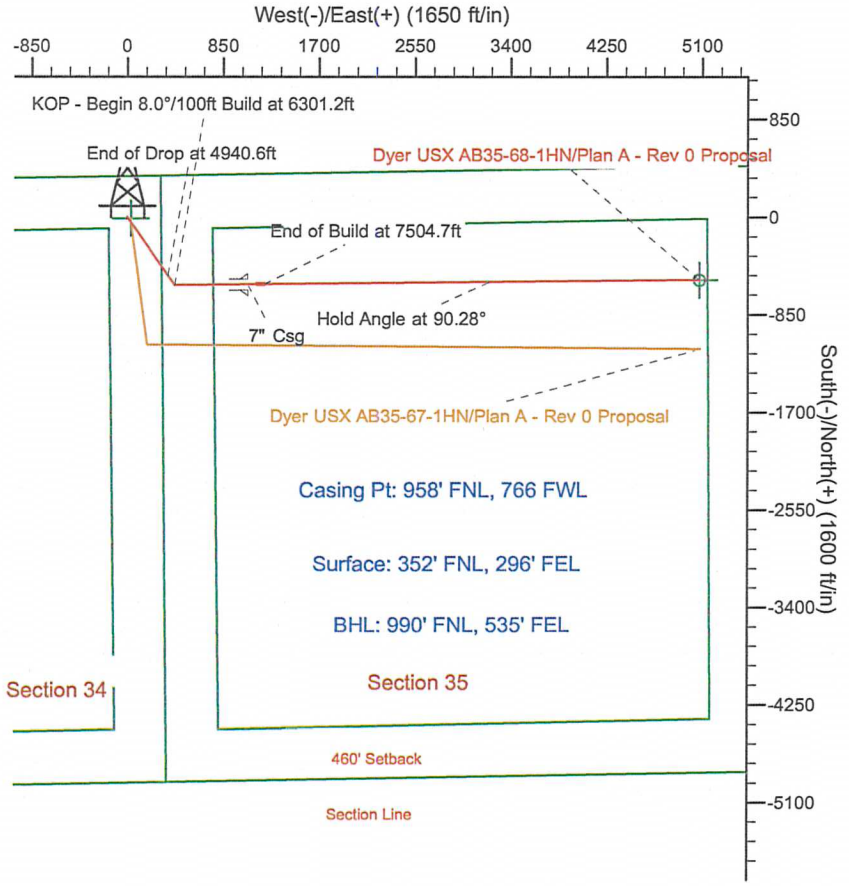
HALLIBURTON
Sperry Drilling

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1700.0	0.00	0.00	1700.0	0.0	0.0	0.00	0.00	0.0	
3	2180.0	12.00	144.78	2176.5	-40.9	28.9	2.50	144.78	33.1	
4	5201.0	12.00	144.78	5131.5	-554.1	391.1	0.00	0.00	448.8	
5	5681.0	0.00	0.00	5608.0	-595.0	420.0	2.50	180.00	481.9	
6	6307.2	0.00	0.00	6234.2	-595.0	420.0	0.00	0.00	481.9	
7	7369.7	85.00	89.47	6947.7	-589.0	1073.7	8.00	89.47	1131.2	
8	7444.7	85.00	89.47	6954.2	-588.3	1148.5	0.00	0.00	1205.4	
9	7510.7	90.28	89.47	6956.9	-587.7	1214.4	8.00	0.00	1270.8	
10	11370.3	90.28	89.48	6938.1	-552.3	5073.7	0.00	89.29	5103.7	Dyer USX AB35-68-1HN_Plan A - Rev 0_BHL Tgt-







WELL DETAILS: Dyer USX AB35-68-1HN(NAD83 Geodetic System)

Ground Level: 4871.0

Northing	Easting	Latitude	Longitude
438792.48	996763.04	40° 32' 9.780 N	104° 31' 40.152 W

Plan: Plan A - Rev 0 Proposal (Dyer USX AB35-68-1HN/Plan A - Rev 0 (PERMITTING PLAN ONLY))

Created By: Erasmo Mendoza Date: 15:25, August 03 2011

Noble Energy

Weld County Colorado (NAD 83)
Sec.34, T7N, R64W
Dyer USX AB35-68-1HN

Plan A - Rev 0 (PERMITTING PLAN ONLY)

Plan: Plan A - Rev 0 Proposal

Standard Planning Report

28 July, 2011

Halliburton Company

Planning Report

Database:	Noble Single User Db	**Local Co-ordinate Reference:**	Well Dyer USX AB35-68-1HN
Company:	Noble Energy	**TVD Reference:**	WELL @ 4895.0ft (Original Well Elev)
Project:	Weld County Colorado (NAD 83)	**MD Reference:**	WELL @ 4895.0ft (Original Well Elev)
Site:	Sec.34, T7N, R64W	**North Reference:**	Grid
Well:	Dyer USX AB35-68-1HN	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Plan A - Rev 0 (PERMITTING PLAN ONLY)		
Design:	Plan A - Rev 0 Proposal		

Project	Weld County Colorado (NAD 83)		
Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Sec.34, T7N, R64W				
Site Position:		**Northing:**	438,788.14 m	**Latitude:**	40° 32' 9.636 N
From:	Lat/Long	**Easting:**	996,771.56 m	**Longitude:**	104° 31' 39.792 W
Position Uncertainty:	0.0 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.63 °

Well	Dyer USX AB35-68-1HN					
Well Position	**+N/-S**	14.3 ft	**Northing:**	438,792.48 m	**Latitude:**	40° 32' 9.780 N
	+E/-W	-28.0 ft	**Easting:**	996,763.04 m	**Longitude:**	104° 31' 40.152 W
Position Uncertainty		0.0 ft	**Wellhead Elevation:**		**Ground Level:**	4,871.0 ft

Wellbore	Plan A - Rev 0 (PERMITTING PLAN ONLY)			
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF200510	7/26/2011	8.69	67.20	53,237

Design	Plan A - Rev 0 Proposal			
Audit Notes:				
Version:	**Phase:**	PLAN	**Tie On Depth:**	0.0
Vertical Section:	**Depth From (TVD) (ft)**	**+N/-S (ft)**	**+E/-W (ft)**	**Direction (°)**
	0.0	0.0	0.0	96.21

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,179.8	17.00	153.24	3,169.9	-89.4	45.1	2.50	2.50	0.00	153.24	
4,774.7	17.00	153.24	4,695.1	-505.6	254.9	0.00	0.00	0.00	0.00	
5,454.5	0.00	0.00	5,365.0	-595.0	300.0	2.50	-2.50	0.00	180.00	
6,324.2	0.00	0.00	6,234.7	-595.0	300.0	0.00	0.00	0.00	0.00	
7,386.7	85.00	89.49	6,948.2	-589.2	953.8	8.00	8.00	0.00	89.49	
7,461.7	85.00	89.49	6,954.7	-588.5	1,028.5	0.00	0.00	0.00	0.00	
7,527.7	90.28	89.49	6,957.4	-587.9	1,094.4	8.00	8.00	0.00	0.00	
11,507.2	90.28	89.48	6,938.1	-552.3	5,073.7	0.00	0.00	0.00	-111.42	Dyer USX AB35-68-1

Database:	Noble Single User Db	**Local Co-ordinate Reference:**	Well Dyer USX AB35-68-1HN
Company:	Noble Energy	**TVD Reference:**	WELL @ 4895.0ft (Original Well Elev)
Project:	Weld County Colorado (NAD 83)	**MD Reference:**	WELL @ 4895.0ft (Original Well Elev)
Site:	Sec.34, T7N, R64W	**North Reference:**	Grid
Well:	Dyer USX AB35-68-1HN	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Plan A - Rev 0 (PERMITTING PLAN ONLY)		
Design:	Plan A - Rev 0 Proposal		

Planned Survey

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
Begin 2.5°/100ft Nudge to 12° Inclination at 2500ft									
2,600.0	2.50	153.24	2,600.0	-1.9	1.0	1.2	2.50	2.50	0.00
2,700.0	5.00	153.24	2,699.7	-7.8	3.9	4.7	2.50	2.50	0.00
2,800.0	7.50	153.24	2,799.1	-17.5	8.8	10.7	2.50	2.50	0.00
2,900.0	10.00	153.24	2,898.0	-31.1	15.7	18.9	2.50	2.50	0.00
3,000.0	12.50	153.24	2,996.0	-48.5	24.5	29.6	2.50	2.50	0.00
3,100.0	15.00	153.24	3,093.2	-69.7	35.2	42.5	2.50	2.50	0.00
3,179.8	17.00	153.24	3,169.9	-89.4	45.1	54.5	2.50	2.50	0.00
Begin 1594.9ft Tangent at 4774.7ft									
3,200.0	17.00	153.24	3,189.2	-94.6	47.7	57.7	0.00	0.00	0.00
3,300.0	17.00	153.24	3,284.8	-120.7	60.9	73.6	0.00	0.00	0.00
3,400.0	17.00	153.24	3,380.5	-146.8	74.0	89.5	0.00	0.00	0.00
3,500.0	17.00	153.24	3,476.1	-172.9	87.2	105.4	0.00	0.00	0.00
3,600.0	17.00	153.24	3,571.7	-199.0	100.4	121.3	0.00	0.00	0.00
3,700.0	17.00	153.24	3,667.4	-225.1	113.5	137.2	0.00	0.00	0.00
3,800.0	17.00	153.24	3,763.0	-251.2	126.7	153.1	0.00	0.00	0.00
3,900.0	17.00	153.24	3,858.6	-277.3	139.8	169.0	0.00	0.00	0.00
4,000.0	17.00	153.24	3,954.3	-303.4	153.0	184.9	0.00	0.00	0.00
4,100.0	17.00	153.24	4,049.9	-329.5	166.2	200.8	0.00	0.00	0.00
4,200.0	17.00	153.24	4,145.5	-355.6	179.3	216.7	0.00	0.00	0.00
4,300.0	17.00	153.24	4,241.2	-381.7	192.5	232.7	0.00	0.00	0.00
4,400.0	17.00	153.24	4,336.8	-407.8	205.6	248.6	0.00	0.00	0.00
4,500.0	17.00	153.24	4,432.4	-433.9	218.8	264.5	0.00	0.00	0.00
4,600.0	17.00	153.24	4,528.1	-460.0	232.0	280.4	0.00	0.00	0.00
4,700.0	17.00	153.24	4,623.7	-486.1	245.1	296.3	0.00	0.00	0.00
4,774.7	17.00	153.24	4,695.1	-505.6	254.9	308.2	0.00	0.00	0.00
Begin 2.5°/100ft Drop to Vertical at 4774.7ft									

Database:	Noble Single User Db	**Local Co-ordinate Reference:**	Well Dyer USX AB35-68-1HN
Company:	Noble Energy	**TVD Reference:**	WELL @ 4895.0ft (Original Well Elev)
Project:	Weld County Colorado (NAD 83)	**MD Reference:**	WELL @ 4895.0ft (Original Well Elev)
Site:	Sec.34, T7N, R64W	**North Reference:**	Grid
Well:	Dyer USX AB35-68-1HN	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Plan A - Rev 0 (PERMITTING PLAN ONLY)		
Design:	Plan A - Rev 0 Proposal		

Planned Survey

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)
4,800.0	16.36	153.24	4,719.4	-512.1	258.2	312.1	2.50	-2.50	0.00
4,900.0	13.86	153.24	4,815.9	-535.4	269.9	326.3	2.50	-2.50	0.00
5,000.0	11.36	153.24	4,913.5	-554.9	279.8	338.2	2.50	-2.50	0.00
5,100.0	8.86	153.24	5,011.9	-570.6	287.7	347.7	2.50	-2.50	0.00
5,200.0	6.36	153.24	5,111.0	-582.4	293.6	354.9	2.50	-2.50	0.00
5,300.0	3.86	153.24	5,210.6	-590.4	297.7	359.8	2.50	-2.50	0.00
5,400.0	1.36	153.24	5,310.5	-594.4	299.7	362.3	2.50	-2.50	0.00
5,454.5	0.00	0.00	5,365.0	-595.0	300.0	362.6	2.50	-2.50	-281.18
End of Drop at 5454.5ft									
5,500.0	0.00	0.00	5,410.5	-595.0	300.0	362.6	0.00	0.00	0.00
5,600.0	0.00	0.00	5,510.5	-595.0	300.0	362.6	0.00	0.00	0.00
5,700.0	0.00	0.00	5,610.5	-595.0	300.0	362.6	0.00	0.00	0.00
5,800.0	0.00	0.00	5,710.5	-595.0	300.0	362.6	0.00	0.00	0.00
5,900.0	0.00	0.00	5,810.5	-595.0	300.0	362.6	0.00	0.00	0.00
6,000.0	0.00	0.00	5,910.5	-595.0	300.0	362.6	0.00	0.00	0.00
6,100.0	0.00	0.00	6,010.5	-595.0	300.0	362.6	0.00	0.00	0.00
6,200.0	0.00	0.00	6,110.5	-595.0	300.0	362.6	0.00	0.00	0.00
6,300.0	0.00	0.00	6,210.5	-595.0	300.0	362.6	0.00	0.00	0.00
6,324.2	0.00	0.00	6,234.7	-595.0	300.0	362.6	0.00	0.00	0.00
KOP - Begin 8.0°/100ft Build at 6324.20ft									
6,400.0	6.06	89.49	6,310.4	-595.0	304.0	366.6	8.00	8.00	0.00
6,500.0	14.06	89.49	6,408.7	-594.8	321.5	383.9	8.00	8.00	0.00
6,600.0	22.06	89.49	6,503.7	-594.5	352.4	414.7	8.00	8.00	0.00
6,700.0	30.06	89.49	6,593.5	-594.1	396.3	458.3	8.00	8.00	0.00
6,800.0	38.06	89.49	6,676.3	-593.6	452.3	513.9	8.00	8.00	0.00
6,900.0	46.06	89.49	6,750.4	-593.0	519.3	580.4	8.00	8.00	0.00
6,977.3	52.25	89.49	6,801.0	-592.5	577.7	638.5	8.00	8.00	0.00
Sharon Springs Mrkr									
6,997.3	53.85	89.49	6,813.0	-592.4	593.7	654.3	8.00	8.00	0.00
Niobrara									
7,000.0	54.06	89.49	6,814.6	-592.4	595.9	656.5	8.00	8.00	0.00
7,025.2	56.08	89.49	6,829.0	-592.2	616.5	677.0	8.00	8.00	0.00
Niobrara A									
7,058.6	58.75	89.49	6,847.0	-591.9	644.7	704.9	8.00	8.00	0.00
Niobrara A Marl									
7,100.0	62.06	89.49	6,867.4	-591.6	680.7	740.7	8.00	8.00	0.00
7,200.0	70.06	89.49	6,908.0	-590.8	772.0	831.4	8.00	8.00	0.00
7,300.0	78.06	89.49	6,935.4	-589.9	868.1	926.8	8.00	8.00	0.00
7,307.9	78.70	89.49	6,937.0	-589.9	875.8	934.5	8.00	8.00	0.00
Niobrara B									
7,374.5	84.02	89.49	6,947.0	-589.3	941.6	999.8	8.00	8.00	0.00
7" Csg									
7,386.7	85.00	89.49	6,948.2	-589.2	953.8	1,011.9	8.00	8.00	0.00
Begin 75ft Tangent at 7386.7ft									
7,400.0	85.00	89.49	6,949.3	-589.1	967.0	1,025.1	0.00	0.00	0.00
7,461.7	85.00	89.49	6,954.7	-588.5	1,028.5	1,086.1	0.00	0.00	0.00
Continue 8.0°/100 Build at 7461.7ft									
7,465.2	85.28	89.49	6,955.0	-588.5	1,031.9	1,089.5	8.00	8.00	0.00
Nio B Top Target									
7,500.0	88.06	89.49	6,957.0	-588.2	1,066.7	1,124.1	8.00	8.00	0.00
7,527.7	90.28	89.49	6,957.4	-587.9	1,094.4	1,151.6	8.00	8.00	0.00
End of Build at 7527.7ft									

Database:	Noble Single User Db	**Local Co-ordinate Reference:**	Well Dyer USX AB35-68-1HN
Company:	Noble Energy	**TVD Reference:**	WELL @ 4895.0ft (Original Well Elev)
Project:	Weld County Colorado (NAD 83)	**MD Reference:**	WELL @ 4895.0ft (Original Well Elev)
Site:	Sec.34, T7N, R64W	**North Reference:**	Grid
Well:	Dyer USX AB35-68-1HN	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Plan A - Rev 0 (PERMITTING PLAN ONLY)		
Design:	Plan A - Rev 0 Proposal		

Planned Survey

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)
7,600.0	90.28	89.49	6,957.1	-587.3	1,166.7	1,223.4	0.00	0.00	0.00
7,700.0	90.28	89.49	6,956.6	-586.4	1,266.7	1,322.7	0.00	0.00	0.00
7,800.0	90.28	89.49	6,956.1	-585.5	1,366.7	1,422.0	0.00	0.00	0.00
7,900.0	90.28	89.49	6,955.6	-584.6	1,466.7	1,521.3	0.00	0.00	0.00
8,000.0	90.28	89.49	6,955.1	-583.7	1,566.7	1,620.6	0.00	0.00	0.00
8,100.0	90.28	89.49	6,954.6	-582.8	1,666.7	1,719.9	0.00	0.00	0.00
8,200.0	90.28	89.49	6,954.1	-581.9	1,766.6	1,819.2	0.00	0.00	0.00
8,300.0	90.28	89.49	6,953.7	-581.0	1,866.6	1,918.6	0.00	0.00	0.00
8,400.0	90.28	89.49	6,953.2	-580.2	1,966.6	2,017.9	0.00	0.00	0.00
8,500.0	90.28	89.49	6,952.7	-579.3	2,066.6	2,117.2	0.00	0.00	0.00
8,600.0	90.28	89.49	6,952.2	-578.4	2,166.6	2,216.5	0.00	0.00	0.00
8,700.0	90.28	89.49	6,951.7	-577.5	2,266.6	2,315.8	0.00	0.00	0.00
8,800.0	90.28	89.49	6,951.2	-576.6	2,366.6	2,415.1	0.00	0.00	0.00
8,900.0	90.28	89.49	6,950.7	-575.7	2,466.6	2,514.4	0.00	0.00	0.00
9,000.0	90.28	89.49	6,950.2	-574.8	2,566.6	2,613.7	0.00	0.00	0.00
9,100.0	90.28	89.49	6,949.8	-573.9	2,666.6	2,713.0	0.00	0.00	0.00
9,200.0	90.28	89.49	6,949.3	-573.0	2,766.6	2,812.4	0.00	0.00	0.00
9,300.0	90.28	89.49	6,948.8	-572.1	2,866.6	2,911.7	0.00	0.00	0.00
9,400.0	90.28	89.49	6,948.3	-571.2	2,966.6	3,011.0	0.00	0.00	0.00
9,500.0	90.28	89.49	6,947.8	-570.3	3,066.6	3,110.3	0.00	0.00	0.00
Hold Angle at 90.28°									
9,600.0	90.28	89.49	6,947.3	-569.4	3,166.6	3,209.6	0.00	0.00	0.00
9,700.0	90.28	89.49	6,946.8	-568.5	3,266.6	3,308.9	0.00	0.00	0.00
9,800.0	90.28	89.49	6,946.3	-567.6	3,366.6	3,408.2	0.00	0.00	0.00
9,900.0	90.28	89.49	6,945.9	-566.7	3,466.6	3,507.5	0.00	0.00	0.00
10,000.0	90.28	89.49	6,945.4	-565.8	3,566.6	3,606.8	0.00	0.00	0.00
10,100.0	90.28	89.49	6,944.9	-564.9	3,666.5	3,706.2	0.00	0.00	0.00
10,200.0	90.28	89.49	6,944.4	-564.0	3,766.5	3,805.5	0.00	0.00	0.00
10,300.0	90.28	89.49	6,943.9	-563.1	3,866.5	3,904.8	0.00	0.00	0.00
10,400.0	90.28	89.49	6,943.4	-562.3	3,966.5	4,004.1	0.00	0.00	0.00
10,500.0	90.28	89.49	6,942.9	-561.4	4,066.5	4,103.4	0.00	0.00	0.00
10,600.0	90.28	89.49	6,942.5	-560.5	4,166.5	4,202.7	0.00	0.00	0.00
10,700.0	90.28	89.49	6,942.0	-559.6	4,266.5	4,302.0	0.00	0.00	0.00
10,800.0	90.28	89.48	6,941.5	-558.7	4,366.5	4,401.3	0.00	0.00	0.00
10,900.0	90.28	89.48	6,941.0	-557.8	4,466.5	4,500.6	0.00	0.00	0.00
11,000.0	90.28	89.48	6,940.5	-556.9	4,566.5	4,599.9	0.00	0.00	0.00
11,100.0	90.28	89.48	6,940.0	-556.0	4,666.5	4,699.3	0.00	0.00	0.00
11,200.0	90.28	89.48	6,939.5	-555.1	4,766.5	4,798.6	0.00	0.00	0.00
11,300.0	90.28	89.48	6,939.1	-554.2	4,866.5	4,897.9	0.00	0.00	0.00
11,400.0	90.28	89.48	6,938.6	-553.3	4,966.5	4,997.2	0.00	0.00	0.00
11,500.0	90.28	89.48	6,938.1	-552.4	5,066.5	5,096.5	0.00	0.00	0.00
11,507.2	90.28	89.48	6,938.1	-552.3	5,073.7	5,103.6	0.00	0.00	0.00
Total Depth at 11507.2ft									

Database:	Noble Single User Db	**Local Co-ordinate Reference:**	Well Dyer USX AB35-68-1HN
Company:	Noble Energy	**TVD Reference:**	WELL @ 4895.0ft (Original Well Elev)
Project:	Weld County Colorado (NAD 83)	**MD Reference:**	WELL @ 4895.0ft (Original Well Elev)
Site:	Sec.34, T7N, R64W	**North Reference:**	Grid
Well:	Dyer USX AB35-68-1HN	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Plan A - Rev 0 (PERMITTING PLAN ONLY)		
Design:	Plan A - Rev 0 Proposal		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (m)	Easting (m)	Latitude	Longitude
Dyer USX AB35-68-1HN	0.00	0.00	0.0	-14.3	28.0	438,788.14	996,771.56	40° 32' 9.636 N	104° 31' 39.792 W
- plan misses target center by 31.4ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E)									
- Polygon									
Point 1			0.0	-4,530.5	-4,484.3	437,407.28	995,404.79		
Point 2			0.0	-172.3	-4,580.0	438,735.62	995,375.62		
Point 3			0.0	-89.1	-194.4	438,760.98	996,712.31		
Point 4			0.0	-4,444.1	-133.8	437,433.62	996,730.78		
Point 5			0.0	-4,530.5	-4,484.3	437,407.28	995,404.79		
Dyer USX AB35-68-1HN	0.00	0.00	0.0	-14.3	28.0	438,788.14	996,771.56	40° 32' 9.636 N	104° 31' 39.792 W
- plan misses target center by 31.4ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E)									
- Polygon									
Point 1			0.0	-4,444.1	786.2	437,433.62	997,011.19		
Point 2			0.0	-89.1	725.6	438,760.98	996,992.72		
Point 3			0.0	-1.1	5,113.9	438,787.80	998,330.23		
Point 4			0.0	-4,360.1	5,145.2	437,459.22	998,339.77		
Point 5			0.0	-4,444.1	786.2	437,433.62	997,011.19		
Dyer USX AB35-68-1HN	0.00	0.00	0.0	-14.3	28.0	438,788.14	996,771.56	40° 32' 9.636 N	104° 31' 39.792 W
- plan misses target center by 31.4ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E)									
- Polygon									
Point 1			0.0	-4,990.5	-4,944.3	437,267.08	995,264.58		
Point 2			0.0	287.7	-5,040.0	438,875.83	995,235.42		
Point 3			0.0	370.9	265.6	438,901.18	996,852.51		
Point 4			0.0	-4,904.1	326.2	437,293.41	996,870.98		
Point 5			0.0	-4,990.5	-4,944.3	437,267.08	995,264.58		
Dyer USX AB35-68-1HN	0.00	0.00	0.0	-14.3	28.0	438,788.14	996,771.56	40° 32' 9.636 N	104° 31' 39.792 W
- plan misses target center by 31.4ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E)									
- Polygon									
Point 1			0.0	-4,904.1	326.2	437,293.41	996,870.98		
Point 2			0.0	370.9	265.6	438,901.18	996,852.51		
Point 3			0.0	458.9	5,573.9	438,928.01	998,470.43		
Point 4			0.0	-4,820.1	5,605.2	437,319.02	998,479.97		
Point 5			0.0	-4,904.1	326.2	437,293.41	996,870.98		
Dyer USX AB35-68-1HN	0.00	0.00	6,938.1	-552.3	5,073.7	438,624.15	998,309.46	40° 32' 3.768 N	104° 30' 34.524 W
- plan hits target center									
- Circle (radius 50.0)									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
7,374.5	6,947.0	7" Csg	7.000	7.500

Database:	Noble Single User Db	**Local Co-ordinate Reference:**	Well Dyer USX AB35-68-1HN
Company:	Noble Energy	**TVD Reference:**	WELL @ 4895.0ft (Original Well Elev)
Project:	Weld County Colorado (NAD 83)	**MD Reference:**	WELL @ 4895.0ft (Original Well Elev)
Site:	Sec.34, T7N, R64W	**North Reference:**	Grid
Well:	Dyer USX AB35-68-1HN	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Plan A - Rev 0 (PERMITTING PLAN ONLY)		
Design:	Plan A - Rev 0 Proposal		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,977.3	6,801.0	Sharon Springs Mrkr			
6,997.3	6,813.0	Niobrara			
7,025.2	6,829.0	Niobrara A			
7,058.6	6,847.0	Niobrara A Marl			
7,307.9	6,937.0	Niobrara B			
7,465.2	6,955.0	Nio B Top Target			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
2,500.0	2,500.0	0.0	0.0	Begin 2.5°/100ft Nudge to 12° Inclination at 2500ft
3,179.8	3,169.9	-89.4	45.1	Begin 1594.9ft Tangent at 4774.7ft
4,774.7	4,695.1	-505.6	254.9	Begin 2.5°/100ft Drop to Vertical at 4774.7ft
5,454.5	5,365.0	-595.0	300.0	End of Drop at 5454.5ft
6,324.2	6,234.7	-595.0	300.0	KOP - Begin 8.0°/100ft Build at 6324.20ft
7,386.7	6,948.2	-589.2	953.8	Begin 75ft Tangent at 7386.7ft
7,461.7	6,954.7	-588.5	1,028.5	Continue 8.0°/100 Build at 7461.7ft
7,527.7	6,957.4	-587.9	1,094.4	End of Build at 7527.7ft
9,500.0	6,947.8	-570.3	3,066.6	Hold Angle at 90.28°
11,507.2	6,938.1	-552.3	5,073.7	Total Depth at 11507.2ft