

Project: Weld County, CO  
 Site: Sec. 5-T7N-R64W  
 Well: Dillard USX AB05-99HZ  
 Wellbore: Wellbore #1  
 Design: Plan #1 Proposal

# Noble Energy

**APPROVED**

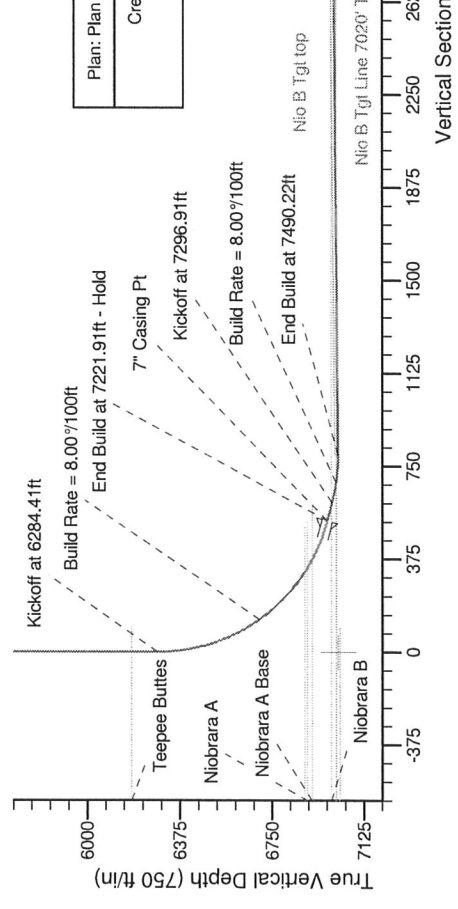
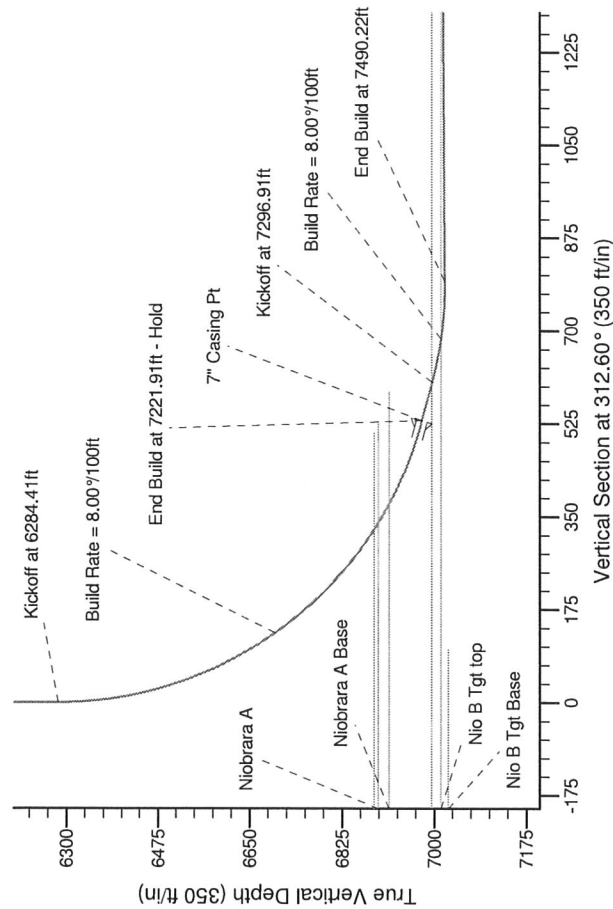
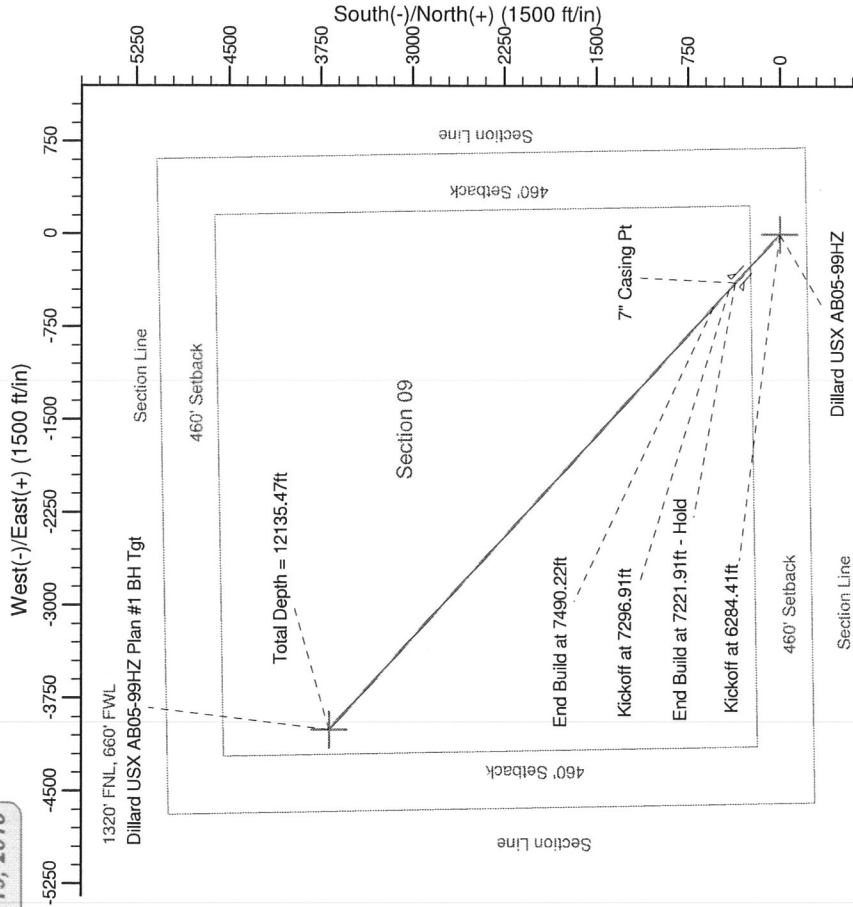
By Doug Sproul at 11:29 am, Jan 19, 2010

**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	0.00
2	6284.41	0.00	0.00	6284.41	0.00	0.00	0.00	0.00	0.00	0.00
3	7221.91	75.00	312.60	6976.20	359.31	-390.74	8.00	312.60	530.83	530.83
4	7296.91	75.00	312.60	6995.61	408.35	-444.06	8.00	0.00	603.28	603.28
5	7490.22	90.46	312.60	7020.00	537.75	-584.79	8.00	-0.01	794.45	794.45
6	12135.47	90.46	312.60	6982.33	3681.76	-4004.16	0.00	0.00	5439.55	5439.55

Dillard USX AB05-99HZ Plan #1 BH Tgt



Plan: Plan #1 Proposal (Dillard USX AB05-99HZ/Wellbore #1)  
 Created By: Puneet Bhatia Date: 12/30/2009

WELL DETAILS: Dillard USX AB05-99HZ  
 Northing: 1461078.07 Easting: 3259289.46 Ground Level: 4942.00  
 Longitude: 104° 33' 58.572 W  
 Latitude: 40° 35' 43.116 N

Dillard USX AB05-99HZ Plan #1 BH Tgt

Total Depth = 12135.47ft

Hold Angle at 90.46°

Nio B Tgt Line 7020' TVD @ 0° VS w/90.457° Uprlip

Vertical Section at 312.60° (750 ft/in)

Project: Weld County, CO  
 Site: Sec. 5-T7N-R64W  
 Well: Dillard USX AB05-99HZ  
 Wellbore: Wellbore #1  
 Design: Plan #1 Proposal

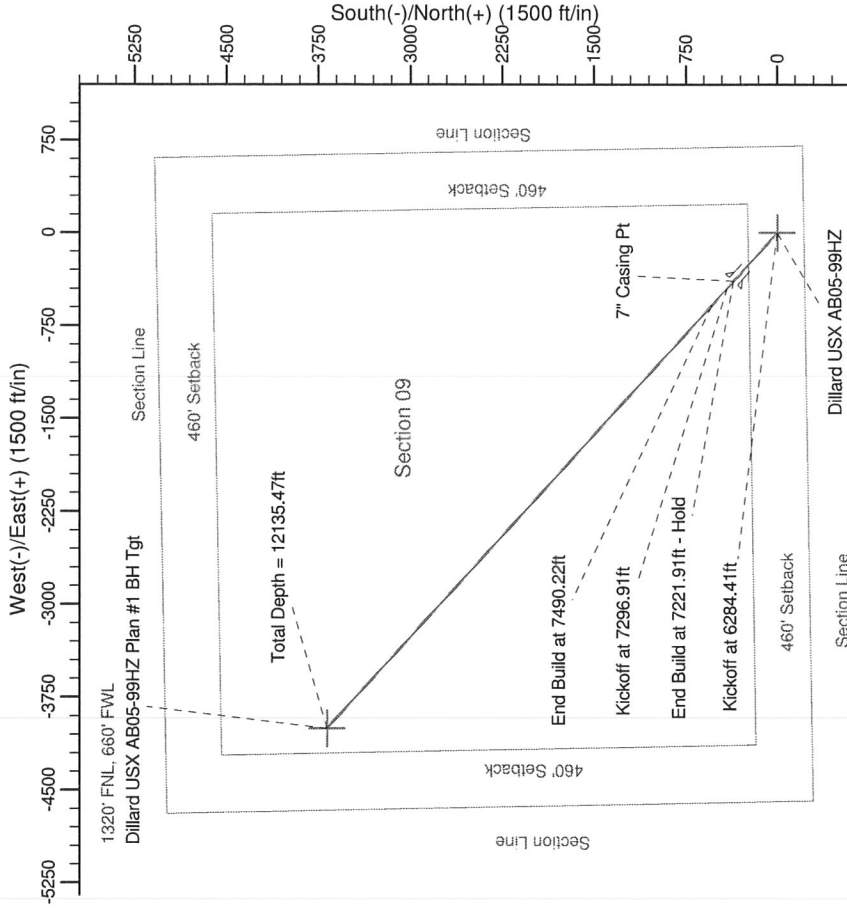
# Noble Energy



### SECTION DETAILS

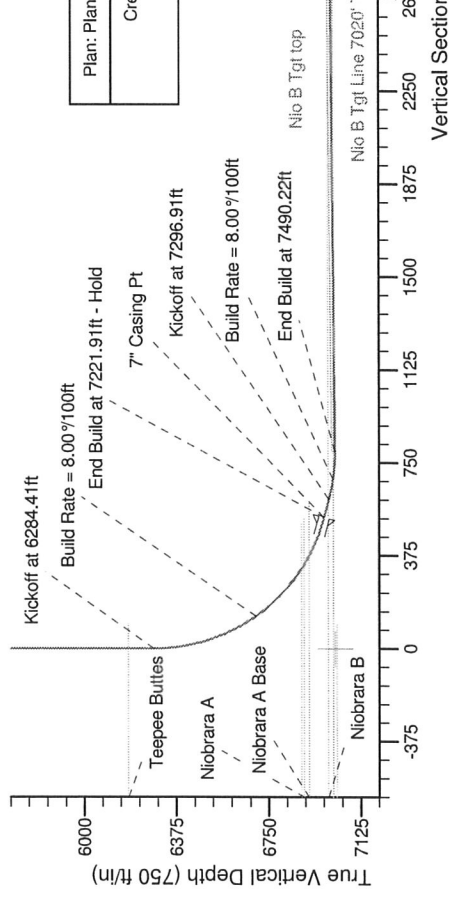
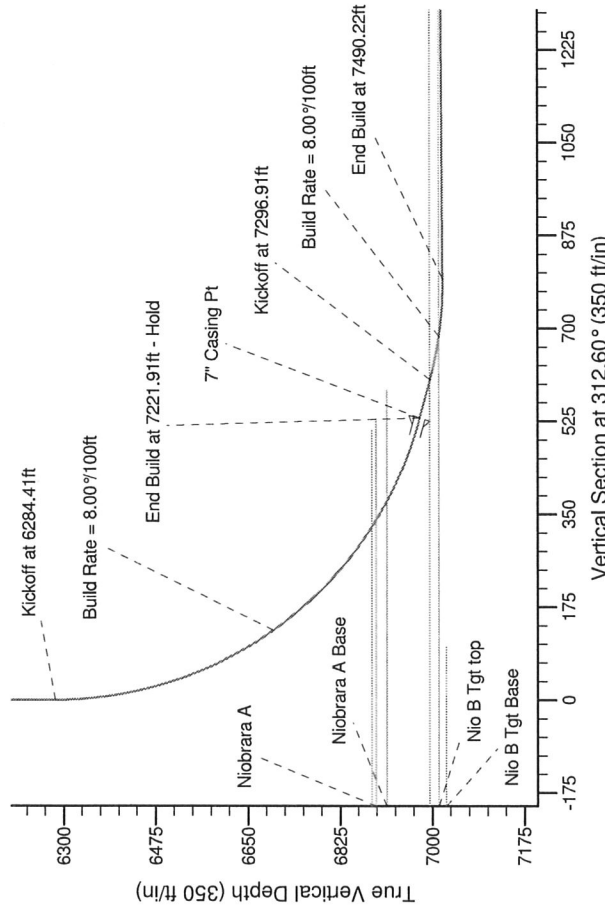
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	6284.41	0.00	0.00	6284.41	0.00	0.00	0.00	0.00	0.00	0.00
3	7221.91	75.00	312.60	6976.20	359.31	-390.74	8.00	312.60	530.83	530.83
4	7296.91	75.00	312.60	6995.61	408.35	-444.06	0.00	0.00	603.28	603.28
5	7490.22	90.46	312.60	7020.00	537.75	-584.79	8.00	-0.01	794.45	794.45
6	12135.47	90.46	312.60	6982.33	3681.76	-4004.16	0.00	0.00	5439.55	5439.55

Dillard USX AB05-99HZ Plan #1 BH Tgt  
 Dillard USX AB05-99HZ Plan #1 BH Tgt



Plan: Plan #1 Proposal (Dillard USX AB05-99HZ Wellbore #1)  
 Created By: Puneet Bhatia Date: 12/30/2009

WELL DETAILS: Dillard USX AB05-99HZ  
 Northing: 1461078.07  
 Easting: 325299.46  
 Ground Level: 4942.00  
 Latitude: 40° 35' 43.116 N  
 Longitude: 104° 33' 58.572 W



Dillard USX AB05-99HZ Plan #1 BH Tgt

Total Depth = 12135.47ft

Hold Angle at 90.46°

Nio B Tgt Line 7020' TVD @ 0° VS w/90.457° Updip

Vertical Section at 312.60° (750 ft/in)

# Noble Energy

Weld County, CO

Sec. 5-T7N-R64W

Dillard USX AB05-99HZ

Wellbore #1

Plan: Plan #1 Proposal

## Sperry Drilling Services

### Proposal Report

14 January, 2010

Well Coordinates: 1,461,078.07 N, 3,259,299.46 E (40° 35' 43.12" N, 104° 33' 58.57" W)

Ground Level: 4,942.00 ft

Local Coordinate Origin: Centered on Well Dillard USX AB05-99HZ

Viewing Datum: RKB - 13' @ 4955.00ft (Original Well Elev)

TVDs to System: N

North Reference: Grid

Unit System: API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 2003.16 Build: 431

**HALLIBURTON**



Plan Report for Dillard USX AB05-99HZ - Plan #1 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 (°)
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
1,600.00	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
1,900.00	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
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,961.00	0.00	0.00	2,961.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Pierre Silt</b>										
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,778.00	0.00	0.00	3,778.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Parkman</b>										
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,540.00	0.00	0.00	4,540.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Sussex</b>										
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

## Plan Report for Dillard USX AB05-99HZ - Plan #1 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 (°)
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,229.00	0.00	0.00	5,229.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Shannon</b>										
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,182.00	0.00	0.00	6,182.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Teepee Buttes</b>										
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,284.41	0.00	0.00	6,284.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Kickoff at 6284.41ft</b>										
6,300.00	1.25	312.60	6,300.00	0.11	-0.12	0.17	8.00	8.00	0.00	312.60
6,400.00	9.25	312.60	6,399.50	6.30	-6.85	9.31	8.00	8.00	0.00	0.00
6,500.00	17.25	312.60	6,496.76	21.80	-23.71	32.20	8.00	8.00	0.00	0.00
6,600.00	25.25	312.60	6,589.89	46.31	-50.36	68.41	8.00	8.00	0.00	0.00
6,700.00	33.25	312.60	6,677.07	79.35	-86.29	117.23	8.00	8.00	0.00	0.00
6,725.00	35.25	312.60	6,697.73	88.88	-96.65	131.30	8.00	8.00	0.00	0.00
<b>Build Rate = 8.00°/100ft</b>										
6,800.00	41.25	312.60	6,756.61	120.29	-130.81	177.71	8.00	8.00	0.00	0.00
6,900.00	49.25	312.60	6,826.95	168.32	-183.04	248.67	8.00	8.00	0.00	0.00
6,996.79	56.99	312.60	6,885.00	220.69	-239.99	326.03	8.00	8.00	0.00	0.00
<b>Niobrara</b>										
7,000.00	57.25	312.60	6,886.74	222.51	-241.97	328.72	8.00	8.00	0.00	0.00
7,013.62	58.34	312.60	6,894.00	230.31	-250.45	340.25	8.00	8.00	0.00	0.00
<b>Niobrara A</b>										
7,053.54	61.53	312.60	6,914.00	253.70	-275.88	374.80	8.00	8.00	0.00	0.00
<b>Niobrara A Base</b>										
7,100.00	65.25	312.60	6,934.80	281.80	-306.45	416.32	8.00	8.00	0.00	0.00
7,200.00	73.25	312.60	6,970.21	345.05	-375.23	509.76	8.00	8.00	0.00	0.00
7,221.91	75.00	312.60	6,976.20	359.31	-390.74	530.83	8.00	8.00	0.00	0.00
<b>End Build at 7221.91ft - Hold - 7" Casing Pt</b>										
7,294.53	75.00	312.60	6,995.00	406.80	-442.37	600.98	0.00	0.00	0.00	0.00
<b>Niobrara B</b>										
7,296.91	75.00	312.60	6,995.61	408.35	-444.06	603.28	0.00	0.00	0.00	0.00
<b>Kickoff at 7296.91ft</b>										
7,300.00	75.25	312.60	6,996.41	410.37	-446.26	606.26	8.00	8.00	0.00	-0.01
7,380.00	81.65	312.60	7,012.42	463.40	-503.92	684.60	8.00	8.00	0.00	-0.01
<b>Build Rate = 8.00°/100ft</b>										
7,384.06	81.97	312.60	7,013.00	466.12	-506.88	688.62	8.00	8.00	0.00	-0.01
<b>Nio B Tgt top</b>										
7,400.00	83.25	312.60	7,015.05	476.82	-518.52	704.43	8.00	8.00	0.00	-0.01
7,490.22	90.46	312.60	7,020.00	537.75	-584.79	794.45	8.00	8.00	0.00	-0.01
<b>End Build at 7490.22ft</b>										
7,500.00	90.46	312.60	7,019.92	544.37	-591.99	804.23	0.00	0.00	0.00	0.00
7,600.00	90.46	312.60	7,019.11	612.05	-665.60	904.23	0.00	0.00	0.00	0.00
7,700.00	90.46	312.60	7,018.29	679.74	-739.21	1,004.22	0.00	0.00	0.00	0.00
7,800.00	90.46	312.60	7,017.48	747.42	-812.82	1,104.22	0.00	0.00	0.00	0.00
7,900.00	90.46	312.60	7,016.67	815.10	-886.43	1,204.22	0.00	0.00	0.00	0.00
8,000.00	90.46	312.60	7,015.86	882.78	-960.04	1,304.21	0.00	0.00	0.00	0.00
8,100.00	90.46	312.60	7,015.05	950.47	-1,033.65	1,404.21	0.00	0.00	0.00	0.00
8,200.00	90.46	312.60	7,014.24	1,018.15	-1,107.26	1,504.21	0.00	0.00	0.00	0.00
8,300.00	90.46	312.60	7,013.43	1,085.83	-1,180.87	1,604.20	0.00	0.00	0.00	0.00

Plan Report for Dillard USX AB05-99HZ - Plan #1 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 (°)
8,400.00	90.46	312.60	7,012.62	1,153.51	-1,254.48	1,704.20	0.00	0.00	0.00	0.00
8,500.00	90.46	312.60	7,011.81	1,221.19	-1,328.09	1,804.20	0.00	0.00	0.00	0.00
8,600.00	90.46	312.60	7,011.00	1,288.88	-1,401.70	1,904.20	0.00	0.00	0.00	0.00
8,700.00	90.46	312.60	7,010.19	1,356.56	-1,475.31	2,004.19	0.00	0.00	0.00	0.00
8,800.00	90.46	312.60	7,009.38	1,424.24	-1,548.92	2,104.19	0.00	0.00	0.00	0.00
8,900.00	90.46	312.60	7,008.56	1,491.92	-1,622.53	2,204.19	0.00	0.00	0.00	0.00
9,000.00	90.46	312.60	7,007.75	1,559.61	-1,696.14	2,304.18	0.00	0.00	0.00	0.00
9,100.00	90.46	312.60	7,006.94	1,627.29	-1,769.75	2,404.18	0.00	0.00	0.00	0.00
9,200.00	90.46	312.60	7,006.13	1,694.97	-1,843.36	2,504.18	0.00	0.00	0.00	0.00
9,300.00	90.46	312.60	7,005.32	1,762.65	-1,916.97	2,604.17	0.00	0.00	0.00	0.00
9,400.00	90.46	312.60	7,004.51	1,830.34	-1,990.58	2,704.17	0.00	0.00	0.00	0.00
9,500.00	90.46	312.60	7,003.70	1,898.02	-2,064.19	2,804.17	0.00	0.00	0.00	0.00
9,600.00	90.46	312.60	7,002.89	1,965.70	-2,137.80	2,904.16	0.00	0.00	0.00	0.00
9,700.00	90.46	312.60	7,002.08	2,033.38	-2,211.41	3,004.16	0.00	0.00	0.00	0.00
9,800.00	90.46	312.60	7,001.27	2,101.06	-2,285.02	3,104.16	0.00	0.00	0.00	0.00
9,900.00	90.46	312.60	7,000.46	2,168.75	-2,358.63	3,204.15	0.00	0.00	0.00	0.00
10,000.00	90.46	312.60	6,999.65	2,236.43	-2,432.24	3,304.15	0.00	0.00	0.00	0.00
10,100.00	90.46	312.60	6,998.83	2,304.11	-2,505.85	3,404.15	0.00	0.00	0.00	0.00
10,200.00	90.46	312.60	6,998.02	2,371.79	-2,579.46	3,504.14	0.00	0.00	0.00	0.00
10,300.00	90.46	312.60	6,997.21	2,439.48	-2,653.07	3,604.14	0.00	0.00	0.00	0.00
10,400.00	90.46	312.60	6,996.40	2,507.16	-2,726.68	3,704.14	0.00	0.00	0.00	0.00
10,500.00	90.46	312.60	6,995.59	2,574.84	-2,800.29	3,804.13	0.00	0.00	0.00	0.00
Hold Angle at 90.46°										
10,600.00	90.46	312.60	6,994.78	2,642.52	-2,873.90	3,904.13	0.00	0.00	0.00	0.00
10,700.00	90.46	312.60	6,993.97	2,710.21	-2,947.51	4,004.13	0.00	0.00	0.00	0.00
10,800.00	90.46	312.60	6,993.16	2,777.89	-3,021.12	4,104.12	0.00	0.00	0.00	0.00
10,900.00	90.46	312.60	6,992.35	2,845.57	-3,094.73	4,204.12	0.00	0.00	0.00	0.00
11,000.00	90.46	312.60	6,991.54	2,913.25	-3,168.34	4,304.12	0.00	0.00	0.00	0.00
11,100.00	90.46	312.60	6,990.73	2,980.93	-3,241.95	4,404.11	0.00	0.00	0.00	0.00
11,200.00	90.46	312.60	6,989.92	3,048.62	-3,315.56	4,504.11	0.00	0.00	0.00	0.00
11,300.00	90.46	312.60	6,989.10	3,116.30	-3,389.17	4,604.11	0.00	0.00	0.00	0.00
11,400.00	90.46	312.60	6,988.29	3,183.98	-3,462.78	4,704.10	0.00	0.00	0.00	0.00
11,500.00	90.46	312.60	6,987.48	3,251.66	-3,536.39	4,804.10	0.00	0.00	0.00	0.00
11,600.00	90.46	312.60	6,986.67	3,319.35	-3,610.00	4,904.10	0.00	0.00	0.00	0.00
11,700.00	90.46	312.60	6,985.86	3,387.03	-3,683.61	5,004.09	0.00	0.00	0.00	0.00
11,800.00	90.46	312.60	6,985.05	3,454.71	-3,757.22	5,104.09	0.00	0.00	0.00	0.00
11,900.00	90.46	312.60	6,984.24	3,522.39	-3,830.83	5,204.09	0.00	0.00	0.00	0.00
12,000.00	90.46	312.60	6,983.43	3,590.08	-3,904.44	5,304.08	0.00	0.00	0.00	0.00
12,100.00	90.46	312.60	6,982.62	3,657.76	-3,978.05	5,404.08	0.00	0.00	0.00	0.00
12,135.47	90.46	312.60	6,982.33	3,681.76	-4,004.16	5,439.55	0.00	0.00	0.00	0.00

Dillard USX AB05-99HZ Plan #1 BH Tgt

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
6,284.41	6,284.41	0.00	0.00	Kickoff at 6284.41ft
6,725.00	6,697.73	88.88	-96.65	Build Rate = 8.00°/100ft
7,221.91	6,976.20	359.31	-390.74	End Build at 7221.91ft - Hold
7,296.91	6,995.61	408.35	-444.06	Kickoff at 7296.91ft
7,380.00	7,012.42	463.40	-503.92	Build Rate = 8.00°/100ft
7,490.22	7,020.00	537.75	-584.79	End Build at 7490.22ft
10,500.00	6,995.59	2,574.84	-2,800.29	Hold Angle at 90.46°
12,135.47	6,982.33	3,681.76	-4,004.16	Total Depth = 12135.47ft

## Plan Report for Dillard USX AB05-99HZ - Plan #1 Proposal

### Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (ft)	Origin +E/-W (ft)	Start TVD (ft)
Target	Dillard USX AB05-99HZ Plan #1 BH Tgt	312.60	Slot	0.00	0.00	0.00

### Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	12,135.46	Plan #1 Proposal	MWD

### Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,221.91	6,976.20	7" Casing Pt	7	12-1/4

### Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	7,027.00	Nio B Tgt Base		0.00	
2,961.00	2,961.00	Pierre Silt		0.00	
3,778.00	3,778.00	Parkman		0.00	
4,540.00	4,540.00	Sussex		0.00	
5,229.00	5,229.00	Shannon		0.00	
6,182.00	6,182.00	Teepee Buttes		0.00	
6,996.79	6,885.00	Niobrara		0.00	
7,013.62	6,894.00	Niobrara A		0.00	
7,053.54	6,914.00	Niobrara A Base		0.00	
7,294.53	6,995.00	Niobrara B		0.00	
7,384.06	7,013.00	Nio B Tgt top		0.00	

### *Targets associated with this wellbore*

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Dillard USX AB05-99HZ Nio B Tgt Line	7,020.00	0.01	0.00	Polygon
Dillard USX AB05-99HZ Plan #1 BH Tgt	6,982.33	3,681.76	-4,004.16	Point

# HALLIBURTON

## North Reference Sheet for Sec. 5-T7N-R64W - Dillard USX AB05-99HZ - Wellbore #1

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to RKB - 13' @ 4955.00ft (Original Well Elev). Northing and Easting are relative to Dillard USX AB05-99HZ

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: 3,000,000.00ft, False Northing: 1,000,000.00ft, Scale Reduction: 0.99997489

Grid Coordinates of Well: 1,461,078.07 ft N, 3,259,299.46 ft E

Geographical Coordinates of Well: 40° 35' 43.12" N, 104° 33' 58.57" W

Grid Convergence at Surface is: 0.60°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,135.47ft  
the Bottom Hole Displacement is 5,439.55ft in the Direction of 312.60° (Grid).

Magnetic Convergence at surface is: -8.29° (28 February 2010, , BGGM2009)

