

Noble Energy

Garfield County, CO

Sec. 8-T8S-R95W (SGV 8D PAD)

SGV Federal 8-11B - A10

Plan #1

Plan: Plan #1 Proposal

Sperry Drilling Services

Proposal Report

07 April, 2009

Well Coordinates: 573,846.59 N, 1,286,213.11 E (39° 22' 54.33" N, 108° 01' 31.88" W)

Ground Level: 6,342.00 ft

Local Coordinate Origin:

Centered on Well SGV Federal 8-11B - Slot A10

Viewing Datum:

RKB 25' @ 6367.00ft (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 SGV Federal 8-11B - 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
225.00	0.00	0.00	225.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Kickoff at 225.00ft										
300.00	1.50	29.44	299.99	0.85	0.48	0.98	2.00	2.00	0.00	29.44
400.00	3.50	29.44	399.89	4.65	2.63	5.34	2.00	2.00	0.00	0.00
500.00	5.50	29.44	499.58	11.49	6.48	13.18	2.00	2.00	0.00	0.00
522.00	5.94	29.44	521.47	13.39	7.56	15.37	2.00	2.00	0.00	0.00
Build Rate = 2.00°/100ft										
600.00	7.50	29.44	598.93	21.34	12.05	24.49	2.00	2.00	0.00	0.00
700.00	9.50	29.44	697.83	34.21	19.31	39.26	2.00	2.00	0.00	0.00
800.00	11.50	29.44	796.15	50.08	28.27	57.47	2.00	2.00	0.00	0.00
819.43	11.89	29.44	815.17	53.51	30.21	61.40	2.00	2.00	0.00	0.00
End Build at 819.43ft										
900.00	11.89	29.44	894.02	67.97	38.37	77.99	0.00	0.00	0.00	0.00
1,000.00	11.89	29.44	991.87	85.91	48.49	98.58	0.00	0.00	0.00	0.00
1,100.00	11.89	29.44	1,089.73	103.85	58.62	119.16	0.00	0.00	0.00	0.00
1,200.00	11.89	29.44	1,187.58	121.79	68.74	139.75	0.00	0.00	0.00	0.00
1,300.00	11.89	29.44	1,285.44	139.73	78.87	160.33	0.00	0.00	0.00	0.00
1,400.00	11.89	29.44	1,383.29	157.67	89.00	180.92	0.00	0.00	0.00	0.00
1,500.00	11.89	29.44	1,481.15	175.61	99.12	201.50	0.00	0.00	0.00	0.00
8 5/8" Casing Pt										
1,600.00	11.89	29.44	1,579.00	193.55	109.25	222.09	0.00	0.00	0.00	0.00
1,700.00	11.89	29.44	1,676.86	211.49	119.38	242.67	0.00	0.00	0.00	0.00
1,800.00	11.89	29.44	1,774.71	229.43	129.50	263.26	0.00	0.00	0.00	0.00
1,900.00	11.89	29.44	1,872.57	247.37	139.63	283.85	0.00	0.00	0.00	0.00
2,000.00	11.89	29.44	1,970.42	265.31	149.76	304.43	0.00	0.00	0.00	0.00
2,100.00	11.89	29.44	2,068.28	283.25	159.88	325.02	0.00	0.00	0.00	0.00
2,200.00	11.89	29.44	2,166.13	301.19	170.01	345.60	0.00	0.00	0.00	0.00
2,300.00	11.89	29.44	2,263.99	319.13	180.14	366.19	0.00	0.00	0.00	0.00
2,400.00	11.89	29.44	2,361.84	337.07	190.26	386.77	0.00	0.00	0.00	0.00
2,500.00	11.89	29.44	2,459.70	355.01	200.39	407.36	0.00	0.00	0.00	0.00
2,555.00	11.89	29.44	2,513.52	364.88	205.96	418.68	0.00	0.00	0.00	0.00
11.89 Inclination										
2,600.00	11.89	29.44	2,557.55	372.95	210.52	427.94	0.00	0.00	0.00	0.00
2,700.00	11.89	29.44	2,655.41	390.89	220.64	448.53	0.00	0.00	0.00	0.00
2,800.00	11.89	29.44	2,753.26	408.83	230.77	469.12	0.00	0.00	0.00	0.00
2,900.00	11.89	29.44	2,851.12	426.77	240.90	489.70	0.00	0.00	0.00	0.00
3,000.00	11.89	29.44	2,948.97	444.71	251.02	510.29	0.00	0.00	0.00	0.00
3,100.00	11.89	29.44	3,046.83	462.65	261.15	530.87	0.00	0.00	0.00	0.00
3,200.00	11.89	29.44	3,144.68	480.59	271.28	551.46	0.00	0.00	0.00	0.00
3,300.00	11.89	29.44	3,242.54	498.53	281.40	572.04	0.00	0.00	0.00	0.00
3,400.00	11.89	29.44	3,340.39	516.47	291.53	592.63	0.00	0.00	0.00	0.00
3,500.00	11.89	29.44	3,438.25	534.41	301.66	613.21	0.00	0.00	0.00	0.00
3,600.00	11.89	29.44	3,536.10	552.35	311.78	633.80	0.00	0.00	0.00	0.00
3,700.00	11.89	29.44	3,633.96	570.29	321.91	654.39	0.00	0.00	0.00	0.00
3,800.00	11.89	29.44	3,731.81	588.23	332.04	674.97	0.00	0.00	0.00	0.00
3,900.00	11.89	29.44	3,829.67	606.17	342.16	695.56	0.00	0.00	0.00	0.00
4,000.00	11.89	29.44	3,927.52	624.11	352.29	716.14	0.00	0.00	0.00	0.00
4,054.65	11.89	29.44	3,981.00	633.91	357.82	727.39	0.00	0.00	0.00	0.00
Williams Fork										
4,100.00	11.89	29.44	4,025.38	642.05	362.42	736.73	0.00	0.00	0.00	0.00
4,200.00	11.89	29.44	4,123.23	659.99	372.54	757.31	0.00	0.00	0.00	0.00
4,289.80	11.89	29.44	4,211.11	676.10	381.64	775.80	0.00	0.00	0.00	0.00
Begin Drop at 4289.80ft										
4,300.00	11.74	29.44	4,221.09	677.92	382.66	777.89	1.50	-1.50	0.00	180.00

Plan Report for SGV Federal 8-11B - 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 (°)
4,400.00	10.24	29.44	4,319.25	694.51	392.03	796.93	1.50	-1.50	0.00	180.00
4,500.00	8.74	29.44	4,417.88	708.86	400.13	813.39	1.50	-1.50	0.00	180.00
4,600.00	7.24	29.44	4,516.91	720.96	406.96	827.28	1.50	-1.50	0.00	180.00
4,686.00	5.95	29.44	4,602.34	729.56	411.81	837.14	1.50	-1.50	0.00	-180.00
Drop Rate = 1.50°/100ft										
4,700.00	5.74	29.44	4,616.27	730.80	412.51	838.56	1.50	-1.50	0.00	180.00
4,800.00	4.24	29.44	4,715.89	738.37	416.78	847.25	1.50	-1.50	0.00	180.00
4,900.00	2.74	29.44	4,815.70	743.66	419.77	853.32	1.50	-1.50	0.00	180.00
5,000.00	1.24	29.44	4,915.64	746.68	421.47	856.78	1.50	-1.50	0.00	180.00
5,082.37	0.00	0.00	4,998.00	747.45	421.91	857.67	1.50	-1.50	0.00	-180.00
End Drop at 5082.37ft - Top of gas - SGV Federal 8-11B Plan #1 Driller's Tgt										
5,100.00	0.03	243.43	5,015.63	747.45	421.91	857.67	0.19	0.19	0.00	243.43
5,200.00	0.22	243.43	5,115.63	747.35	421.70	857.49	0.19	0.19	0.00	0.00
5,300.00	0.41	243.43	5,215.63	747.10	421.21	857.04	0.19	0.19	0.00	0.00
5,400.00	0.60	243.43	5,315.62	746.70	420.41	856.32	0.19	0.19	0.00	0.00
5,500.00	0.79	243.43	5,415.62	746.16	419.32	855.34	0.19	0.19	0.00	0.00
5,600.00	0.98	243.43	5,515.60	745.46	417.94	854.09	0.19	0.19	0.00	0.00
5,700.00	1.17	243.43	5,615.59	744.62	416.25	852.57	0.19	0.19	0.00	0.00
5,800.00	1.36	243.43	5,715.56	743.63	414.27	850.78	0.19	0.19	0.00	0.00
5,900.00	1.55	243.43	5,815.53	742.49	412.00	848.73	0.19	0.19	0.00	0.00
6,000.00	1.74	243.43	5,915.49	741.21	409.42	846.40	0.19	0.19	0.00	0.00
6,100.00	1.93	243.43	6,015.44	739.77	406.55	843.82	0.19	0.19	0.00	0.00
6,200.00	2.12	243.43	6,115.37	738.19	403.39	840.96	0.19	0.19	0.00	0.00
6,300.00	2.31	243.43	6,215.30	736.46	399.93	837.83	0.19	0.19	0.00	0.00
6,378.94	2.46	243.43	6,294.17	734.99	396.98	835.18	0.19	0.19	0.00	0.00
6,400.00	2.42	243.43	6,315.21	734.58	396.18	834.46	0.19	-0.19	0.00	-180.00
6,472.85	2.29	243.43	6,388.00	733.25	393.50	832.04	0.19	-0.19	0.00	180.00
Cameo										
6,500.00	2.23	243.43	6,415.13	732.77	392.55	831.18	0.19	-0.19	0.00	-180.00
6,600.00	2.05	243.43	6,515.06	731.10	389.20	828.16	0.19	-0.19	0.00	180.00
6,700.00	1.86	243.43	6,615.00	729.57	386.16	825.41	0.19	-0.19	0.00	180.00
6,800.00	1.67	243.43	6,714.95	728.20	383.41	822.93	0.19	-0.19	0.00	-180.00
6,812.05	1.65	243.43	6,727.00	728.04	383.10	822.65	0.19	-0.19	0.00	-180.00
Rollins										
6,900.00	1.48	243.43	6,814.92	726.97	380.95	820.71	0.19	-0.19	0.00	180.00
7,000.00	1.29	243.43	6,914.89	725.89	378.79	818.76	0.19	-0.19	0.00	180.00
7,081.13	1.14	243.43	6,996.00	725.12	377.25	817.38	0.19	-0.19	0.00	-180.00
Cozzette										
7,100.00	1.10	243.43	7,014.86	724.95	376.92	817.08	0.19	-0.19	0.00	180.00
7,200.00	0.91	243.43	7,114.85	724.17	375.35	815.66	0.19	-0.19	0.00	180.00
7,300.00	0.72	243.43	7,214.84	723.53	374.07	814.51	0.19	-0.19	0.00	180.00
7,319.16	0.69	243.43	7,234.00	723.42	373.86	814.32	0.19	-0.19	0.00	-180.00
Corcoran										
7,400.00	0.53	243.43	7,314.83	723.04	373.09	813.62	0.19	-0.19	0.00	180.00
7,433.17	0.47	243.43	7,348.00	722.91	372.83	813.39	0.19	-0.19	0.00	180.00
Mancos										
7,500.00	0.35	243.43	7,414.83	722.69	372.40	813.00	0.19	-0.19	0.00	-180.00
7,600.00	0.16	243.43	7,514.83	722.50	372.01	812.65	0.19	-0.19	0.00	180.00
7,683.17	0.00	0.00	7,598.00	722.45	371.91	812.56	0.19	-0.19	140.16	180.00
Total Depth = 7683.17ft - SGV Federal 8-11B Plan #1 BH Tgt										

Plan Report for SGV Federal 8-11B - Plan #1 Proposal

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
225.00	225.00	0.00	0.00	Kickoff at 225.00ft
522.00	521.47	13.39	7.56	Build Rate = 2.00°/100ft
819.43	815.17	53.51	30.21	End Build at 819.43ft
2,555.00	2,513.52	364.88	205.96	11.89 Inclination
4,289.80	4,211.11	676.10	381.64	Begin Drop at 4289.80ft
4,686.00	4,602.34	729.56	411.81	Drop Rate = 1.50°/100ft
5,082.37	4,998.00	747.45	421.91	End Drop at 5082.37ft
7,683.17	7,598.00	722.45	371.91	Total Depth = 7683.17ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/-S (ft)	+E/-W (ft)	
User	SGV Federal 8-11B Plan #1 BH Tgt	27.24	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	7,683.17	Plan #1 Proposal	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
1,500.00	1,481.15	8 5/8" Casing Pt	8-5/8	12-1/4

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,054.65	3,981.00	Williams Fork		0.00	
5,082.37	4,998.00	Top of gas		0.00	
6,472.85	6,388.00	Cameo		0.00	
6,812.05	6,727.00	Rollins		0.00	
7,081.13	6,996.00	Cozzette		0.00	
7,319.16	7,234.00	Corcoran		0.00	
7,433.17	7,348.00	Mancos		0.00	

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
SGV Federal 8-11B Plan #1 Driller's Tgt	4,998.00	747.45	421.91	Rectangle
SGV Federal 8-11B Plan #1 Zone Tgt	4,998.00	722.45	371.91	Rectangle
SGV Federal 8-11B Plan #1 BH Tgt	7,598.00	722.45	371.91	Point

North Reference Sheet for Sec. 8-T8S-R95W (SGV 8D PAD) - SGV Federal 8-11B - Plan #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 25' @ 6367.00ft (Original Well Elev). Northing and Easting are relative to SGV Federal 8-11B - Slot A10

Coordinate System is US State Plane 1927 (Exact solution), Colorado Central 502 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866

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: 2,000,000.00ft, False Northing: 0.00ft, Scale Reduction: 0.99994788

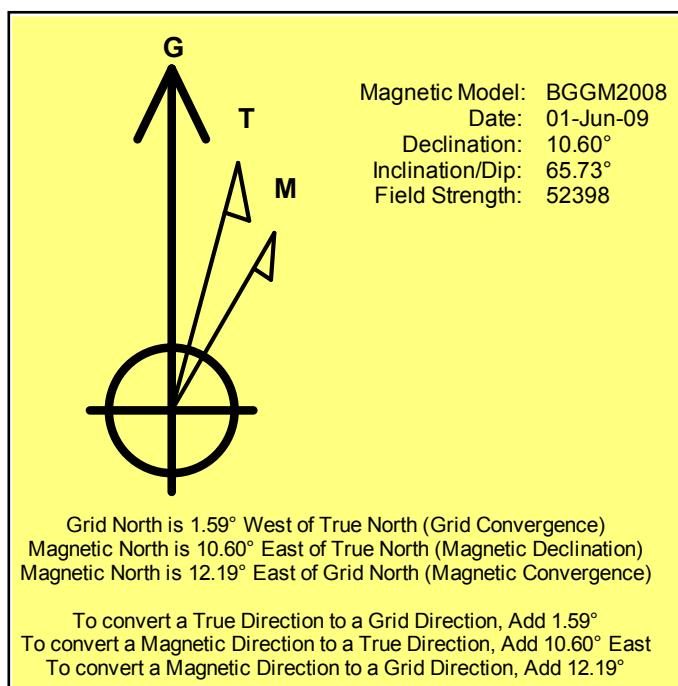
Grid Coordinates of Well: 573,846.59 ft N, 1,286,213.11 ft E

Geographical Coordinates of Well: 39° 22' 54.33" N, 108° 01' 31.88" W

Grid Convergence at Surface is: -1.59°

Based upon Minimum Curvature type calculations, at a Measured Depth of 7,683.17ft
the Bottom Hole Displacement is 812.56ft in the Direction of 27.24° (Grid).

Magnetic Convergence at surface is: -12.19° (1 June 2009, , BGGM2008)



PROJECT DETAILS: Garfield County, CO	
Geodetic System: US State Plane 1927 (Exact solution) Datum: NAD 1927 (NADCON CONUS) Ellipsoid: Clarke 1866 Zone: Colorado Central 502	
System Datum: Mean Sea Level	
Plan: Plan #1 Proposal (SGV Federal 8-11B/Plan #1)	
Created By: Puneet Bhatia	Date: 04/06/2009
Checked: _____	Date: _____
Reviewed: _____	Date: _____
Approved: _____	Date: _____