

Noble Energy

Garfield County, CO

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

SGV Federal 8-12A - B 6

Plan #1

Plan: Plan #1 Proposal

Sperry Drilling Services

Proposal Report

07 April, 2009

Well Coordinates: 573,827.15 N, 1,286,188.37 E (39° 22' 54.13" N, 108° 01' 32.19" W)

Ground Level: 6,342.00 ft

Local Coordinate Origin:

Centered on Well SGV Federal 8-12A - Slot B 6

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 8-12A - 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	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
384.00	0.00	0.00	384.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Build Rate = 2.00°/100ft										
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
542.71	0.00	0.00	542.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00
End Build at 542.71ft										
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
750.00	0.00	0.00	750.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	1.00	117.83	800.00	-0.20	0.39	0.43	2.00	2.00	0.00	117.83
900.00	3.00	117.83	899.93	-1.83	3.47	3.91	2.00	2.00	0.00	0.00
1,000.00	5.00	117.83	999.68	-5.09	9.64	10.85	2.00	2.00	0.00	0.00
1,100.00	7.00	117.83	1,099.13	-9.97	18.88	21.24	2.00	2.00	0.00	0.00
1,117.13	7.34	117.83	1,116.12	-10.97	20.77	23.37	2.00	2.00	0.00	0.00
1,200.00	7.34	117.83	1,198.32	-15.91	30.14	33.91	0.00	0.00	0.00	0.00
1,300.00	7.34	117.83	1,297.50	-21.88	41.44	46.62	0.00	0.00	0.00	0.00
1,400.00	7.34	117.83	1,396.68	-27.85	52.74	59.34	0.00	0.00	0.00	0.00
1,500.00	7.34	117.83	1,495.86	-33.82	64.04	72.05	0.00	0.00	0.00	0.00
8 5/8" Casing Pt										
1,600.00	7.34	117.83	1,595.04	-39.78	75.35	84.76	0.00	0.00	0.00	0.00
1,700.00	7.34	117.83	1,694.22	-45.75	86.65	97.48	0.00	0.00	0.00	0.00
1,800.00	7.34	117.83	1,793.40	-51.72	97.95	110.19	0.00	0.00	0.00	0.00
1,900.00	7.34	117.83	1,892.58	-57.68	109.25	122.91	0.00	0.00	0.00	0.00
2,000.00	7.34	117.83	1,991.76	-63.65	120.55	135.62	0.00	0.00	0.00	0.00
2,100.00	7.34	117.83	2,090.94	-69.62	131.85	148.33	0.00	0.00	0.00	0.00
2,200.00	7.34	117.83	2,190.12	-75.59	143.15	161.05	0.00	0.00	0.00	0.00
2,300.00	7.34	117.83	2,289.30	-81.55	154.46	173.76	0.00	0.00	0.00	0.00
2,400.00	7.34	117.83	2,388.48	-87.52	165.76	186.48	0.00	0.00	0.00	0.00
2,500.00	7.34	117.83	2,487.66	-93.49	177.06	199.19	0.00	0.00	0.00	0.00
2,516.00	7.34	117.83	2,503.52	-94.44	178.87	201.22	0.00	0.00	0.00	0.00
6.35 Inclination										
2,600.00	7.34	117.83	2,586.84	-99.45	188.36	211.90	0.00	0.00	0.00	0.00
2,700.00	7.34	117.83	2,686.02	-105.42	199.66	224.62	0.00	0.00	0.00	0.00
2,800.00	7.34	117.83	2,785.20	-111.39	210.96	237.33	0.00	0.00	0.00	0.00
2,900.00	7.34	117.83	2,884.38	-117.36	222.27	250.05	0.00	0.00	0.00	0.00
3,000.00	7.34	117.83	2,983.56	-123.32	233.57	262.76	0.00	0.00	0.00	0.00
3,100.00	7.34	117.83	3,082.74	-129.29	244.87	275.47	0.00	0.00	0.00	0.00
3,200.00	7.34	117.83	3,181.92	-135.26	256.17	288.19	0.00	0.00	0.00	0.00
3,300.00	7.34	117.83	3,281.10	-141.23	267.47	300.90	0.00	0.00	0.00	0.00
3,400.00	7.34	117.83	3,380.28	-147.19	278.77	313.62	0.00	0.00	0.00	0.00
3,500.00	7.34	117.83	3,479.46	-153.16	290.07	326.33	0.00	0.00	0.00	0.00
3,600.00	7.34	117.83	3,578.64	-159.13	301.38	339.05	0.00	0.00	0.00	0.00
3,700.00	7.34	117.83	3,677.82	-165.09	312.68	351.76	0.00	0.00	0.00	0.00
3,800.00	7.34	117.83	3,777.00	-171.06	323.98	364.47	0.00	0.00	0.00	0.00
3,894.78	7.34	117.83	3,871.00	-176.72	334.69	376.52	0.00	0.00	0.00	0.00
Williams Fork										
3,900.00	7.34	117.83	3,876.18	-177.03	335.28	377.19	0.00	0.00	0.00	0.00
4,000.00	7.34	117.83	3,975.36	-183.00	346.58	389.90	0.00	0.00	0.00	0.00
4,100.00	7.34	117.83	4,074.54	-188.96	357.88	402.62	0.00	0.00	0.00	0.00
4,200.00	7.34	117.83	4,173.72	-194.93	369.19	415.33	0.00	0.00	0.00	0.00
4,300.00	7.34	117.83	4,272.90	-200.90	380.49	428.04	0.00	0.00	0.00	0.00
4,400.00	7.34	117.83	4,372.08	-206.86	391.79	440.76	0.00	0.00	0.00	0.00

Plan Report for SGV Federal 8-12A - 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 (°)
4,427.99	7.34	117.83	4,399.83	-208.54	394.95	444.32	0.00	0.00	0.00	0.00
4,490.16	6.41	117.83	4,461.56	-212.01	401.53	451.72	1.50	-1.50	0.00	180.00
Begin Drop at 4490.16ft										
4,500.00	6.26	117.83	4,471.34	-212.52	402.49	452.80	1.50	-1.50	0.00	-180.00
4,600.00	4.76	117.83	4,570.87	-217.00	410.99	462.36	1.50	-1.50	0.00	180.00
4,700.00	3.26	117.83	4,670.62	-220.27	417.18	469.32	1.50	-1.50	0.00	180.00
4,702.00	3.23	117.83	4,672.62	-220.32	417.28	469.43	1.50	-1.50	0.00	180.00
Drop Rate = 1.50°/100ft										
4,800.00	1.76	117.83	4,770.53	-222.32	421.05	473.68	1.50	-1.50	0.00	-180.00
4,900.00	0.26	117.83	4,870.51	-223.14	422.61	475.44	1.50	-1.50	0.00	180.00
4,913.77	0.06	117.83	4,884.28	-223.16	422.65	475.48	1.50	-1.50	0.00	180.00
End Drop at 4913.77ft										
4,917.49	0.00	0.00	4,888.00	-223.16	422.65	475.48	1.50	-1.50	0.00	-180.00
Top of gas - SGV Federal 8-12A Plan #1 Driller's Tgt										
5,000.00	0.16	243.43	4,970.51	-223.21	422.55	475.42	0.19	0.19	0.00	243.43
5,100.00	0.35	243.43	5,070.51	-223.41	422.16	475.20	0.19	0.19	0.00	0.00
5,200.00	0.54	243.43	5,170.50	-223.75	421.47	474.82	0.19	0.19	0.00	0.00
5,300.00	0.73	243.43	5,270.50	-224.24	420.48	474.27	0.19	0.19	0.00	0.00
5,400.00	0.92	243.43	5,370.49	-224.89	419.20	473.56	0.19	0.19	0.00	0.00
5,500.00	1.11	243.43	5,470.47	-225.68	417.62	472.68	0.19	0.19	0.00	0.00
5,600.00	1.30	243.43	5,570.45	-226.61	415.74	471.64	0.19	0.19	0.00	0.00
5,700.00	1.49	243.43	5,670.42	-227.70	413.57	470.44	0.19	0.19	0.00	0.00
5,800.00	1.68	243.43	5,770.38	-228.94	411.10	469.07	0.19	0.19	0.00	0.00
5,900.00	1.87	243.43	5,870.33	-230.32	408.34	467.53	0.19	0.19	0.00	0.00
6,000.00	2.06	243.43	5,970.27	-231.85	405.27	465.83	0.19	0.19	0.00	0.00
6,100.00	2.25	243.43	6,070.20	-233.53	401.92	463.97	0.19	0.19	0.00	0.00
6,200.00	2.44	243.43	6,170.12	-235.36	398.26	461.94	0.19	0.19	0.00	0.00
6,214.07	2.46	243.43	6,184.18	-235.62	397.72	461.64	0.19	0.19	0.00	0.00
6,300.00	2.30	243.43	6,270.03	-237.22	394.53	459.87	0.19	-0.19	0.00	180.00
6,307.97	2.29	243.43	6,278.00	-237.36	394.24	459.71	0.19	-0.19	0.00	-180.00
Cameo										
6,400.00	2.11	243.43	6,369.96	-238.94	391.08	457.95	0.19	-0.19	0.00	180.00
6,500.00	1.92	243.43	6,469.90	-240.52	387.94	456.21	0.19	-0.19	0.00	180.00
6,600.00	1.73	243.43	6,569.85	-241.95	385.08	454.62	0.19	-0.19	0.00	180.00
6,647.17	1.65	243.43	6,617.00	-242.57	383.84	453.93	0.19	-0.19	0.00	-180.00
Rollins										
6,700.00	1.55	243.43	6,669.81	-243.23	382.52	453.20	0.19	-0.19	0.00	180.00
6,800.00	1.36	243.43	6,769.77	-244.36	380.26	451.94	0.19	-0.19	0.00	180.00
6,900.00	1.17	243.43	6,869.75	-245.34	378.29	450.85	0.19	-0.19	0.00	180.00
6,916.25	1.14	243.43	6,886.00	-245.49	377.99	450.69	0.19	-0.19	0.00	180.00
Cozzette										
7,000.00	0.98	243.43	6,969.73	-246.18	376.61	449.92	0.19	-0.19	0.00	-180.00
7,100.00	0.79	243.43	7,069.72	-246.87	375.23	449.15	0.19	-0.19	0.00	180.00
7,154.29	0.69	243.43	7,124.00	-247.19	374.60	448.80	0.19	-0.19	0.00	180.00
Corcoran										
7,200.00	0.60	243.43	7,169.71	-247.42	374.14	448.55	0.19	-0.19	0.00	-180.00
7,268.29	0.47	243.43	7,238.00	-247.70	373.57	448.23	0.19	-0.19	0.00	180.00
Mancos										
7,300.00	0.41	243.43	7,269.71	-247.81	373.35	448.11	0.19	-0.19	0.00	-180.00
7,400.00	0.22	243.43	7,369.71	-248.06	372.86	447.83	0.19	-0.19	0.00	180.00
7,500.00	0.03	243.43	7,469.71	-248.16	372.65	447.72	0.19	-0.19	0.00	-180.00
7,514.57	0.01	243.43	7,484.28	-248.16	372.65	447.72	0.19	-0.19	0.00	-180.00
Total Depth = 7514.57ft										
7,518.29	0.00	1.60	7,488.00	-248.16	372.65	447.72	0.19	-0.19	0.00	180.00
SGV Federal 8-12A Plan #1 BH Tgt										

Plan Report for SGV Federal 8-12A - 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
384.00	384.00	0.00	0.00	Build Rate = 2.00°/100ft
542.71	542.71	0.00	0.00	End Build at 542.71ft
2,516.00	2,503.52	-94.44	178.87	6.35 Inclination
4,490.16	4,461.56	-212.01	401.53	Begin Drop at 4490.16ft
4,702.00	4,672.62	-220.32	417.28	Drop Rate = 1.50°/100ft
4,913.77	4,884.28	-223.16	422.65	End Drop at 4913.77ft
7,514.57	7,484.28	-248.16	372.65	Total Depth = 7514.57ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/-S (ft)	+E/-W (ft)	
Target	SGV Federal 8-12A Plan #1 BH Tgt	123.66	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	7,518.29	Plan #1 Proposal	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
1,500.00	1,495.86	8 5/8" Casing Pt	8-5/8	12-1/4

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,894.78	3,871.00	Williams Fork		0.00	
4,917.49	4,888.00	Top of gas		0.00	
6,307.97	6,278.00	Cameo		0.00	
6,647.17	6,617.00	Rollins		0.00	
6,916.25	6,886.00	Cozzette		0.00	
7,154.29	7,124.00	Corcoran		0.00	
7,268.29	7,238.00	Mancos		0.00	

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
SGV Federal 8-12A Plan #1 Zone Tgt	4,888.00	-248.16	372.65	Rectangle
SGV Federal 8-12A Plan #1 Driller's Tgt	4,888.00	-223.16	422.65	Rectangle
SGV Federal 8-12A Plan #1 BH Tgt	7,488.00	-248.16	372.65	Point

North Reference Sheet for Sec. 8-T8S-R95W (SGV 8D PAD) - SGV Federal 8-12A - 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 8-12A - Slot B 6

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

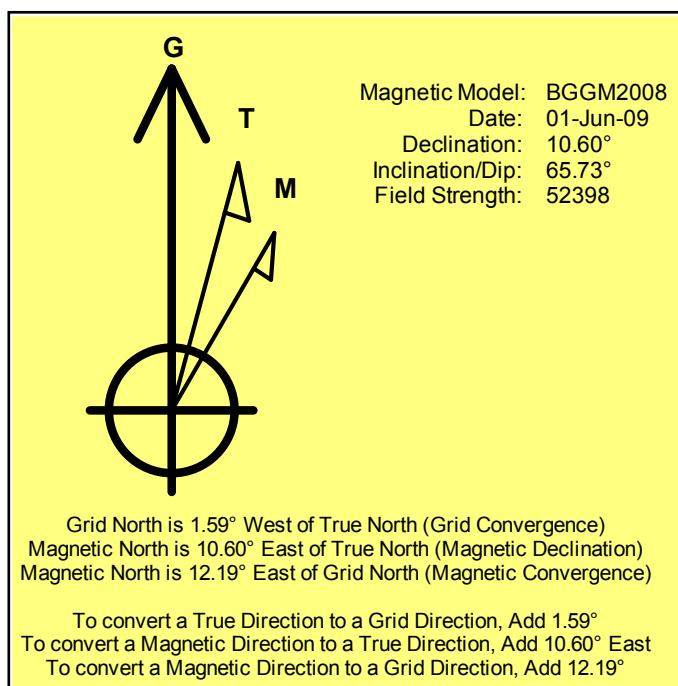
Grid Coordinates of Well: 573,827.15 ft N, 1,286,188.37 ft E

Geographical Coordinates of Well: 39° 22' 54.13" N, 108° 01' 32.19" W

Grid Convergence at Surface is: -1.59°

Based upon Minimum Curvature type calculations, at a Measured Depth of 7,518.29ft
the Bottom Hole Displacement is 447.72ft in the Direction of 123.66° (Grid).

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



Project: Garfield County, CO
Site: Sec. 8-T8S-R95W (SGV 8D PAD)
Well: SGV Federal 8-12A
Wellbore: Plan #1
Plan: Plan #1 Proposal

Noble Energy

HALLIBURTON

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
750.00	0.00	0.00	750.00	0.00	0.00	0.00	0.00	0.00
1117.13	7.34	117.83	1116.12	-10.97	20.77	2.00	117.83	23.37
4427.99	7.34	117.83	4399.83	-208.54	394.95	0.00	0.00	444.32
4917.49	0.00	0.00	4888.00	-223.16	422.65	1.50	180.00	475.48
6214.07	2.46	243.43	6184.18	-235.62	397.72	0.19	243.43	461.64
7518.29	0.00	1.60	7488.00	-248.16	372.65	0.19	180.00	447.72

SGV Federal 8-12A Plan #1 Driller's Tgt

SGV Federal 8-12A Plan #1 BH Tgt

WELL DETAILS: SGV Federal 8-12A

Ground Level:	6342.00
Latitude	39° 22' 54.128 N
Longitude	108° 1' 32.188 W
B 6	



Azimuths to Grid North
True North: 1.59°
Magnetic North: 12.19°
Magnetic Field
Strength: 52398.1snT
Dip Angle: 65.73°
Date: 6/1/2009
Model: BGGM2008

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3871.00	3894.78	Williams Fork
4888.00	4917.49	Top of gas
6278.00	6307.97	Cameo
6617.00	6647.17	Rollins
6886.00	6916.25	Cozzette
7124.00	7154.29	Corcoran
7238.00	7268.29	Mancos

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SGV Federal 8-12A Plan #1 Driller's Tgt	4888.00	-223.16	422.65	Rectangle (Sides: L25.00 W25.00)
SGV Federal 8-12A Plan #1 Zone Tgt	4888.00	-248.16	372.65	Rectangle (Sides: L100.00 W200.00)
SGV Federal 8-12A Plan #1 BH Tgt	7488.00	-248.16	372.65	Point

