

# Noble Energy

Garfield County, CO

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

SGV Federal 6-44D - A 6

Plan #1

Plan: Plan #1 Proposal

## Sperry Drilling Services

### Proposal Report

06 April, 2009

Well Coordinates: 573,836.04 N, 1,286,185.03 E (39° 22' 54.21" N, 108° 01' 32.23" W)

Ground Level: 6,342.00 ft

Local Coordinate Origin: Centered on Well SGV Federal 6-44D - Slot A 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 6-44D - 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
<b>Kickoff at 225.00ft</b>										
300.00	1.50	326.64	299.99	0.82	-0.54	0.98	2.00	2.00	0.00	326.64
400.00	3.50	326.64	399.89	4.46	-2.94	5.34	2.00	2.00	0.00	0.00
500.00	5.50	326.64	499.58	11.02	-7.25	13.18	2.00	2.00	0.00	0.00
600.00	7.50	326.64	598.93	20.47	-13.48	24.50	2.00	2.00	0.00	0.00
700.00	9.50	326.64	697.83	32.82	-21.60	39.27	2.00	2.00	0.00	0.00
800.00	11.50	326.64	796.15	48.04	-31.62	57.48	2.00	2.00	0.00	0.00
882.00	13.14	326.64	876.26	62.65	-41.25	74.97	2.00	2.00	0.00	0.00
<b>Build Rate = 2.00°/100ft</b>										
900.00	13.50	326.64	893.77	66.11	-43.53	79.11	2.00	2.00	0.00	0.00
1,000.00	15.50	326.64	990.58	87.02	-57.29	104.14	2.00	2.00	0.00	0.00
1,100.00	17.50	326.64	1,086.46	110.75	-72.91	132.52	2.00	2.00	0.00	0.00
1,200.00	19.50	326.64	1,181.29	137.25	-90.36	164.24	2.00	2.00	0.00	0.00
1,300.00	21.50	326.64	1,274.95	166.50	-109.61	199.24	2.00	2.00	0.00	0.00
1,400.00	23.50	326.64	1,367.33	198.46	-130.66	237.48	2.00	2.00	0.00	0.00
1,500.00	25.50	326.64	1,458.32	233.09	-153.46	278.93	2.00	2.00	0.00	0.00
<b>8 5/8" Casing Pt</b>										
1,539.92	26.30	326.64	1,494.23	247.66	-163.05	296.36	2.00	2.00	0.00	0.00
<b>End Build at 1539.92ft</b>										
1,600.00	26.30	326.64	1,548.10	269.89	-177.68	322.96	0.00	0.00	0.00	0.00
1,700.00	26.30	326.64	1,637.75	306.89	-202.05	367.24	0.00	0.00	0.00	0.00
1,800.00	26.30	326.64	1,727.40	343.90	-226.41	411.52	0.00	0.00	0.00	0.00
1,900.00	26.30	326.64	1,817.05	380.90	-250.77	455.81	0.00	0.00	0.00	0.00
2,000.00	26.30	326.64	1,906.69	417.91	-275.13	500.09	0.00	0.00	0.00	0.00
2,100.00	26.30	326.64	1,996.34	454.91	-299.50	544.37	0.00	0.00	0.00	0.00
2,200.00	26.30	326.64	2,085.99	491.92	-323.86	588.65	0.00	0.00	0.00	0.00
2,300.00	26.30	326.64	2,175.64	528.92	-348.22	632.93	0.00	0.00	0.00	0.00
2,400.00	26.30	326.64	2,265.29	565.93	-372.58	677.21	0.00	0.00	0.00	0.00
2,500.00	26.30	326.64	2,354.94	602.93	-396.95	721.50	0.00	0.00	0.00	0.00
2,600.00	26.30	326.64	2,444.59	639.94	-421.31	765.78	0.00	0.00	0.00	0.00
2,700.00	26.30	326.64	2,534.24	676.94	-445.67	810.06	0.00	0.00	0.00	0.00
<b>26.30 Inclination</b>										
2,800.00	26.30	326.64	2,623.89	713.95	-470.03	854.34	0.00	0.00	0.00	0.00
2,900.00	26.30	326.64	2,713.54	750.95	-494.40	898.62	0.00	0.00	0.00	0.00
3,000.00	26.30	326.64	2,803.19	787.96	-518.76	942.90	0.00	0.00	0.00	0.00
3,100.00	26.30	326.64	2,892.84	824.96	-543.12	987.19	0.00	0.00	0.00	0.00
3,200.00	26.30	326.64	2,982.49	861.97	-567.48	1,031.47	0.00	0.00	0.00	0.00
3,300.00	26.30	326.64	3,072.14	898.97	-591.85	1,075.75	0.00	0.00	0.00	0.00
3,400.00	26.30	326.64	3,161.79	935.98	-616.21	1,120.03	0.00	0.00	0.00	0.00
3,500.00	26.30	326.64	3,251.44	972.98	-640.57	1,164.31	0.00	0.00	0.00	0.00
3,600.00	26.30	326.64	3,341.09	1,009.99	-664.93	1,208.60	0.00	0.00	0.00	0.00
3,700.00	26.30	326.64	3,430.74	1,046.99	-689.30	1,252.88	0.00	0.00	0.00	0.00
3,800.00	26.30	326.64	3,520.39	1,084.00	-713.66	1,297.16	0.00	0.00	0.00	0.00
3,861.68	26.30	326.64	3,575.69	1,106.82	-728.69	1,324.47	0.00	0.00	0.00	0.00
<b>Begin Drop at 3861.68ft</b>										
3,900.00	25.72	326.64	3,610.13	1,120.86	-737.93	1,341.27	1.50	-1.50	0.00	180.00
4,000.00	24.22	326.64	3,700.78	1,156.12	-761.14	1,383.46	1.50	-1.50	0.00	180.00
4,100.00	22.72	326.64	3,792.50	1,189.39	-783.04	1,423.28	1.50	-1.50	0.00	180.00
4,200.00	21.22	326.64	3,885.23	1,220.64	-803.62	1,460.67	1.50	-1.50	0.00	180.00
4,300.00	19.72	326.64	3,978.91	1,249.86	-822.85	1,495.63	1.50	-1.50	0.00	180.00
4,400.00	18.22	326.64	4,073.47	1,277.01	-840.73	1,528.13	1.50	-1.50	0.00	180.00
4,500.00	16.72	326.64	4,168.86	1,302.09	-857.24	1,558.14	1.50	-1.50	0.00	180.00
4,585.49	15.44	326.64	4,251.00	1,321.87	-870.26	1,581.81	1.50	-1.50	0.00	-180.00

## Plan Report for SGV Federal 6-44D - 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 (°)
<b>Williams Fork</b>										
4,600.00	15.22	326.64	4,264.99	1,325.07	-872.37	1,585.64	1.50	-1.50	0.00	180.00
4,700.00	13.72	326.64	4,361.82	1,345.95	-886.12	1,610.62	1.50	-1.50	0.00	180.00
4,738.00	13.15	326.64	4,398.78	1,353.33	-890.97	1,619.45	1.50	-1.50	0.00	-180.00
<b>Drop Rate = 1.50°/100ft</b>										
4,800.00	12.22	326.64	4,459.26	1,364.70	-898.46	1,633.06	1.50	-1.50	0.00	180.00
4,900.00	10.72	326.64	4,557.26	1,381.31	-909.40	1,652.94	1.50	-1.50	0.00	180.00
5,000.00	9.22	326.64	4,655.75	1,395.78	-918.92	1,670.25	1.50	-1.50	0.00	180.00
5,100.00	7.72	326.64	4,754.65	1,408.09	-927.02	1,684.98	1.50	-1.50	0.00	180.00
5,200.00	6.22	326.64	4,853.91	1,418.23	-933.70	1,697.11	1.50	-1.50	0.00	180.00
5,300.00	4.72	326.64	4,953.45	1,426.19	-938.95	1,706.65	1.50	-1.50	0.00	180.00
5,400.00	3.22	326.64	5,053.21	1,431.98	-942.76	1,713.57	1.50	-1.50	0.00	180.00
5,500.00	1.72	326.64	5,153.11	1,435.59	-945.13	1,717.89	1.50	-1.50	0.00	180.00
5,600.00	0.22	326.64	5,253.09	1,437.01	-946.06	1,719.58	1.50	-1.50	0.00	180.00
5,614.91	0.00	0.00	5,268.00	1,437.03	-946.08	1,719.61	1.50	-1.50	223.80	180.00
<b>End Drop at 5614.91ft - Top of gas - SGV Federal 6-44D Plan #1 Driller's Tgt</b>										
5,700.00	0.16	243.44	5,353.09	1,436.98	-946.19	1,719.63	0.19	0.19	-136.98	-116.56
5,800.00	0.35	243.44	5,453.09	1,436.78	-946.59	1,719.70	0.19	0.19	0.00	0.00
5,900.00	0.54	243.44	5,553.09	1,436.43	-947.29	1,719.82	0.19	0.19	0.00	0.00
6,000.00	0.73	243.44	5,653.08	1,435.93	-948.28	1,719.98	0.19	0.19	0.00	0.00
6,100.00	0.92	243.44	5,753.07	1,435.29	-949.57	1,720.20	0.19	0.19	0.00	0.00
6,200.00	1.11	243.44	5,853.06	1,434.49	-951.16	1,720.47	0.19	0.19	0.00	0.00
6,300.00	1.30	243.44	5,953.04	1,433.55	-953.04	1,720.78	0.19	0.19	0.00	0.00
6,400.00	1.49	243.44	6,053.01	1,432.46	-955.22	1,721.15	0.19	0.19	0.00	0.00
6,500.00	1.68	243.44	6,152.97	1,431.22	-957.70	1,721.56	0.19	0.19	0.00	0.00
6,600.00	1.87	243.44	6,252.92	1,429.84	-960.47	1,722.03	0.19	0.19	0.00	0.00
6,700.00	2.06	243.44	6,352.86	1,428.30	-963.54	1,722.54	0.19	0.19	0.00	0.00
6,800.00	2.25	243.44	6,452.79	1,426.62	-966.91	1,723.11	0.19	0.19	0.00	0.00
6,900.00	2.44	243.44	6,552.71	1,424.79	-970.57	1,723.73	0.19	0.19	0.00	0.00
6,911.44	2.46	243.44	6,564.14	1,424.57	-971.01	1,723.80	0.19	0.19	0.00	0.00
7,000.00	2.30	243.44	6,652.62	1,422.92	-974.30	1,724.35	0.19	-0.19	0.00	-180.00
7,005.39	2.29	243.44	6,658.00	1,422.83	-974.49	1,724.38	0.19	-0.19	0.00	-180.00
<b>Cameo</b>										
7,100.00	2.11	243.44	6,752.54	1,421.21	-977.73	1,724.93	0.19	-0.19	0.00	180.00
7,200.00	1.92	243.44	6,852.48	1,419.64	-980.87	1,725.46	0.19	-0.19	0.00	180.00
7,300.00	1.73	243.44	6,952.43	1,418.21	-983.72	1,725.93	0.19	-0.19	0.00	180.00
7,344.59	1.65	243.44	6,997.00	1,417.63	-984.90	1,726.13	0.19	-0.19	0.00	180.00
<b>Rollins</b>										
7,400.00	1.54	243.44	7,052.39	1,416.94	-986.27	1,726.36	0.19	-0.19	0.00	-180.00
7,500.00	1.35	243.44	7,152.36	1,415.81	-988.53	1,726.74	0.19	-0.19	0.00	180.00
7,600.00	1.16	243.44	7,252.34	1,414.83	-990.49	1,727.07	0.19	-0.19	0.00	180.00
7,613.67	1.14	243.44	7,266.00	1,414.70	-990.74	1,727.11	0.19	-0.19	0.00	-180.00
<b>Cozzette</b>										
7,700.00	0.97	243.44	7,352.32	1,413.99	-992.16	1,727.35	0.19	-0.19	0.00	180.00
7,800.00	0.79	243.44	7,452.31	1,413.31	-993.53	1,727.58	0.19	-0.19	0.00	180.00
7,851.70	0.69	243.44	7,504.00	1,413.01	-994.13	1,727.68	0.19	-0.19	0.00	-180.00
<b>Corcoran</b>										
7,900.00	0.60	243.44	7,552.30	1,412.77	-994.61	1,727.76	0.19	-0.19	0.00	180.00
7,965.70	0.47	243.44	7,618.00	1,412.49	-995.16	1,727.86	0.19	-0.19	0.00	-180.00
<b>Mancos</b>										
8,000.00	0.41	243.44	7,652.29	1,412.38	-995.40	1,727.89	0.19	-0.19	0.00	180.00
8,100.00	0.22	243.44	7,752.29	1,412.13	-995.88	1,727.98	0.19	-0.19	0.00	180.00
8,200.00	0.03	243.44	7,852.29	1,412.04	-996.08	1,728.01	0.19	-0.19	0.00	180.00
8,215.71	0.00	1.60	7,868.00	1,412.03	-996.08	1,728.01	0.19	-0.19	0.00	180.00
<b>SGV Federal 6-44D Plan #1 BH Tgt</b>										

## Plan Report for SGV Federal 6-44D - 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
882.00	876.26	62.65	-41.25	Build Rate = 2.00°/100ft
1,539.92	1,494.23	247.66	-163.05	End Build at 1539.92ft
2,700.00	2,534.24	676.94	-445.67	26.30 Inclination
3,861.68	3,575.69	1,106.82	-728.69	Begin Drop at 3861.68ft
4,738.00	4,398.78	1,353.33	-890.97	Drop Rate = 1.50°/100ft
5,614.91	5,268.00	1,437.03	-946.08	End Drop at 5614.91ft
8,215.71	7,868.00	1,412.03	-996.08	Total Depth = 8215.71ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/-S (ft)	+E/-W (ft)	
Target	SGV Federal 6-44D Plan #1 BH Tgt	324.80	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	8,215.71	Plan #1 Proposal	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
1,500.00	1,458.32	8 5/8" Casing Pt	8-5/8	12-1/4

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,585.49	4,251.00	Williams Fork		0.00	
5,614.91	5,268.00	Top of gas		0.00	
7,005.39	6,658.00	Cameo		0.00	
7,344.59	6,997.00	Rollins		0.00	
7,613.67	7,266.00	Cozzette		0.00	
7,851.70	7,504.00	Corcoran		0.00	
7,965.70	7,618.00	Mancos		0.00	

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
SGV Federal 6-44D Plan #1 Driller's Tgt	5,268.00	1,437.03	-946.08	Rectangle
SGV Federal 6-44D Plan #1 BH Tgt	7,868.00	1,412.03	-996.08	Point
SGV Federal 6-44D Plan #1 Zone Tgt	5,268.00	1,412.03	-996.08	Rectangle

**North Reference Sheet for Sec. 8-T8S-R95W (SGV 8D PAD) - SGV Federal 6-44D - 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 6-44D - Slot A 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

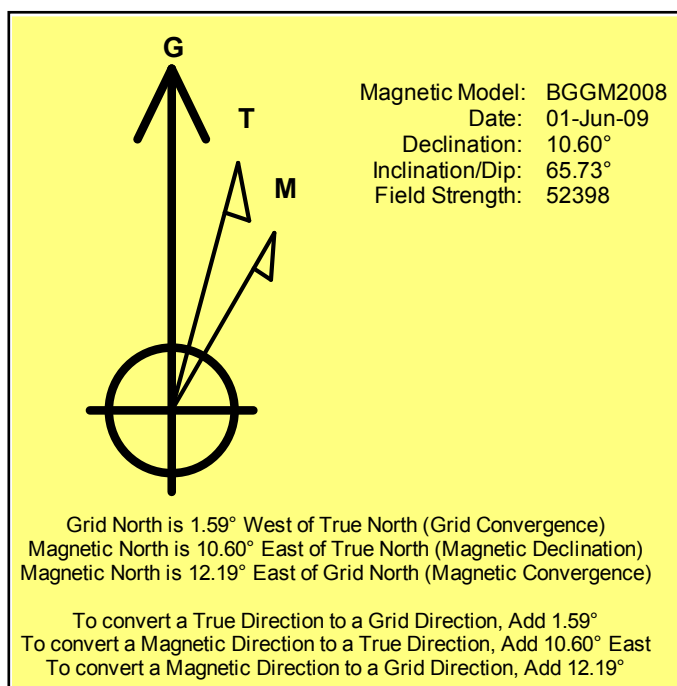
Grid Coordinates of Well: 573,836.04 ft N, 1,286,185.03 ft E

Geographical Coordinates of Well: 39° 22' 54.21" N, 108° 01' 32.23" W

Grid Convergence at Surface is: -1.59°

Based upon Minimum Curvature type calculations, at a Measured Depth of 8,215.71ft  
the Bottom Hole Displacement is 1,728.01ft in the Direction of 324.80° (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 6-44D  
Wellbore: Plan #1  
Plan: Plan #1 Proposal

# Noble Energy

HALLIBURTON

## SECTION DETAILS

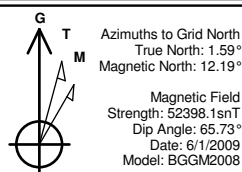
MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
225.00	0.00	0.00	225.00	0.00	0.00	0.00	0.00	0.00
1539.92	26.30	326.64	1494.23	247.66	-163.05	2.00	326.64	296.36
3861.68	26.30	326.64	3575.69	1106.82	-728.69	0.00	0.00	1324.47
5614.91	0.00	0.00	5268.00	1437.03	-946.08	1.50	180.00	1719.61
6911.44	2.46	243.44	6564.14	1424.57	-971.01	0.19	243.44	1723.80
8215.71	0.00	1.60	7868.00	1412.03	-996.08	0.19	180.00	1728.01

SGV Federal 6-44D Plan #1 Driller's Tgt

SGV Federal 6-44D Plan #1 BH Tgt

## WELL DETAILS: SGV Federal 6-44D

Ground Level:	6342.00	Latitude	39° 22' 54.215 N	Longitude	108° 1' 32.234 W	A 6
Northing	573836.04	Easting	1286185.03			



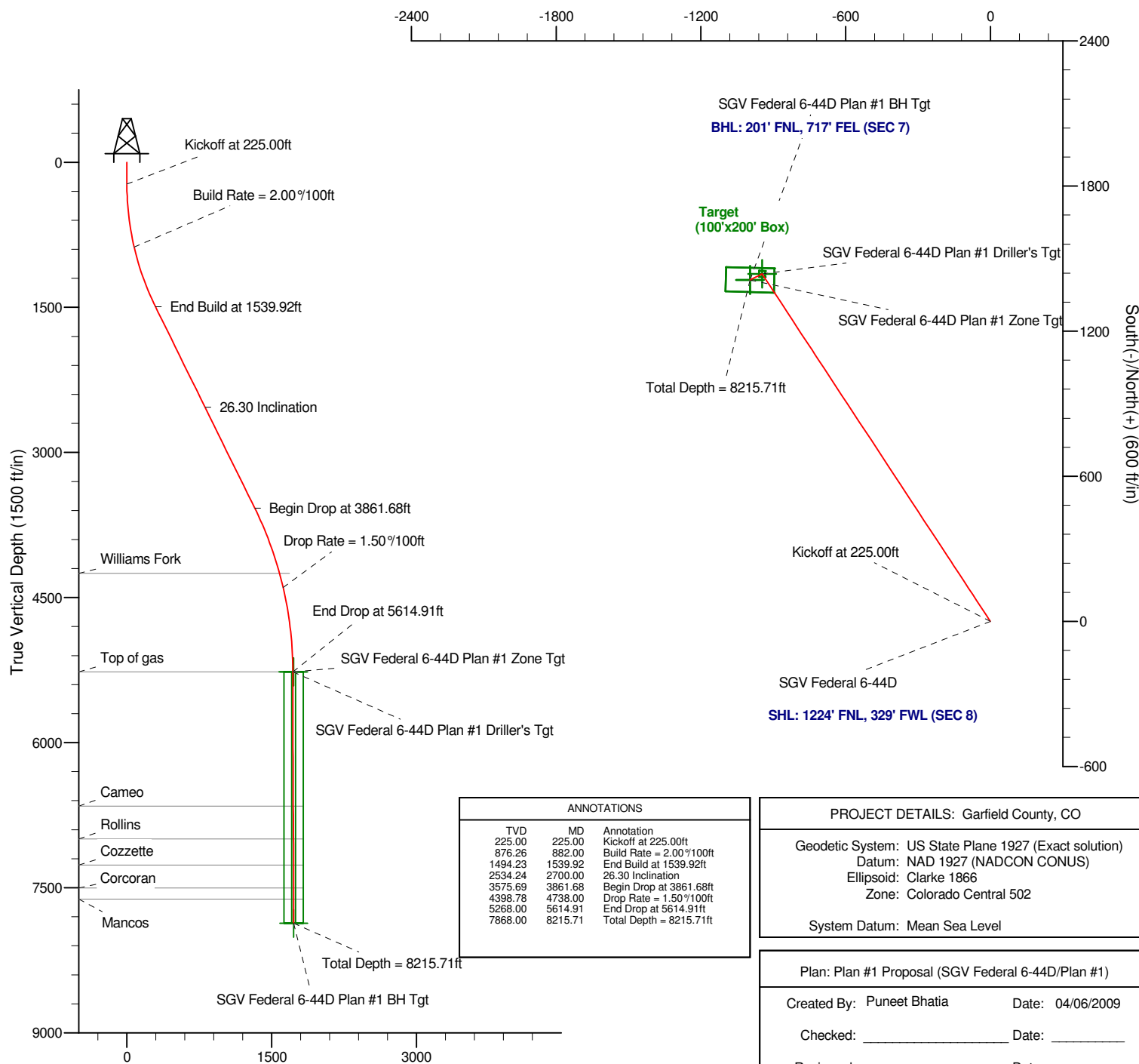
## FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4251.00	4585.49	Williams Fork
5268.00	5614.91	Top of gas
6658.00	7005.39	Cameo
6997.00	7344.59	Rollins
7266.00	7613.67	Cozzette
7504.00	7851.70	Corcoran
7618.00	7965.70	Mancos

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SGV Federal 6-44D Plan #1 Driller's Tgt	5268.00	1437.03	-946.08	Rectangle (Sides: L25.00 W25.00)
SGV Federal 6-44D Plan #1 Zone Tgt	5268.00	1412.03	-996.08	Rectangle (Sides: L100.00 W200.00)
SGV Federal 6-44D Plan #1 BH Tgt	7868.00	1412.03	-996.08	Point

West(-)/East(+) (600 ft/in)



## ANNOTATIONS

TVD	MD	Annotation
225.00	225.00	Kickoff at 225.00ft
876.26	882.00	Build Rate = 2.00%/100ft
1494.23	1539.92	End Build at 1539.92ft
2534.24	2700.00	26.30 Inclination
3575.69	3861.68	Begin Drop at 3861.68ft
4398.78	4738.00	Drop Rate = 1.50%/100ft
5268.00	5614.91	End Drop at 5614.91ft
7868.00	8215.71	Total Depth = 8215.71ft

## 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 6-44D/Plan #1)

Created By: Puneet Bhatia Date: 04/06/2009

Checked: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed: \_\_\_\_\_ Date: \_\_\_\_\_

Approved: \_\_\_\_\_ Date: \_\_\_\_\_