

Cimarex Energy

Eddy County

Sec 14-T19S-R29E

State "A" 14 Com #2

Wellbore #1

Design: Wellbore #1

Sperry Drilling Services Combo Report

18 April, 2006

Well Coordinates: 605,126.23 N, 629,369.79 E (32° 39' 46.40" N, 103° 54' 46.63" W)
Ground Level: 3,362.00 ft

Local Coordinate Origin:

Viewing Datum:

TVDs to System:

North Reference:

Unit System:

Centered on Site Sec 14-T19S-R29E

WELL @ 3382.00ft (Original Well Elev)

N

Grid

API - US Survey Feet

Version: 2003.14 Build: 77

HALLIBURTON

HALLIBURTON

Cimarex Energy
Eddy County

Design Report for State "A" 14 Com #2 - Wellbore #1 - Wellbore #1

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Easting (ft)	Map Coordinates Northing (ft)	Easting (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
0.00	0.00	0.00	3,382.00	0.00	0.00 N	0.00 E	605,126.23	629,369.79	0.00	0.00	
100.00	0.42	286.18	3,282.00	100.00	0.10 N	0.35 W	605,126.33	629,369.44	0.42	-0.30	
200.00	0.58	296.89	3,182.00	200.00	0.43 N	1.16 W	605,126.66	629,368.63	0.18	-1.06	
300.00	0.40	316.19	3,082.01	299.99	0.91 N	1.85 W	605,127.14	629,367.94	0.24	-1.87	
400.00	0.21	359.17	2,982.01	399.99	1.35 N	2.09 W	605,127.58	629,367.70	0.28	-2.36	
500.00	0.28	14.90	2,882.01	499.99	1.77 N	2.03 W	605,128.00	629,367.76	0.10	-2.65	
600.00	0.32	24.30	2,782.01	599.99	2.26 N	1.85 W	605,128.49	629,367.94	0.06	-2.92	
700.00	0.37	20.12	2,682.01	699.99	2.82 N	1.63 W	605,129.05	629,368.16	0.06	-3.22	
800.00	0.30	27.23	2,582.02	799.98	3.35 N	1.40 W	605,129.58	629,368.39	0.08	-3.49	
900.00	0.35	34.79	2,482.02	899.98	3.84 N	1.10 W	605,130.07	629,368.69	0.07	-3.68	
1,000.00	0.46	43.76	2,382.02	999.98	4.38 N	0.65 W	605,130.61	629,369.14	0.13	-3.82	
1,100.00	0.94	64.46	2,282.03	1,099.97	5.02 N	0.37 E	605,131.25	629,370.16	0.54	-3.69	
1,200.00	0.98	65.68	2,182.04	1,199.96	5.73 N	1.89 E	605,131.96	629,371.68	0.04	-3.29	
1,300.00	0.73	62.76	2,082.05	1,299.95	6.37 N	3.23 E	605,132.60	629,373.02	0.25	-2.95	
1,400.00	0.50	57.09	1,982.06	1,399.94	6.90 N	4.16 E	605,133.13	629,373.95	0.24	-2.78	
1,500.00	0.39	51.18	1,882.06	1,499.94	7.35 N	4.79 E	605,133.58	629,374.58	0.12	-2.74	
1,600.00	0.36	55.84	1,782.06	1,599.94	7.74 N	5.32 E	605,133.97	629,375.11	0.04	-2.72	
1,700.00	0.27	68.17	1,682.06	1,699.94	8.00 N	5.80 E	605,134.23	629,375.59	0.11	-2.62	
1,800.00	0.13	131.25	1,582.07	1,799.93	8.02 N	6.10 E	605,134.25	629,375.89	0.24	-2.44	
1,900.00	0.19	248.23	1,482.07	1,899.93	7.88 N	6.03 E	605,134.11	629,375.82	0.27	-2.38	
2,000.00	0.33	265.84	1,382.07	1,999.93	7.80 N	5.59 E	605,134.03	629,375.38	0.16	-2.59	
2,100.00	0.34	265.47	1,282.07	2,099.93	7.75 N	5.01 E	605,133.98	629,374.80	0.01	-2.92	
2,200.00	0.33	266.53	1,182.07	2,199.93	7.71 N	4.43 E	605,133.94	629,374.22	0.01	-3.25	
2,300.00	0.30	293.62	1,082.07	2,299.93	7.80 N	3.90 E	605,134.03	629,373.69	0.15	-3.65	
2,400.00	0.35	305.71	982.07	2,399.93	8.08 N	3.41 E	605,134.31	629,373.20	0.08	-4.18	
2,500.00	0.38	317.94	882.08	2,499.92	8.51 N	2.94 E	605,134.74	629,372.73	0.08	-4.80	
2,600.00	0.43	324.11	782.08	2,599.92	9.06 N	2.50 E	605,135.29	629,372.29	0.07	-5.51	
2,700.00	0.34	337.35	682.08	2,699.92	9.64 N	2.16 E	605,135.87	629,371.95	0.13	-6.17	
2,800.00	0.55	338.87	582.08	2,799.92	10.36 N	1.88 E	605,136.59	629,371.67	0.21	-6.91	
2,900.00	0.54	339.38	482.09	2,899.91	11.25 N	1.54 E	605,137.48	629,371.33	0.01	-7.82	
3,000.00	0.21	336.86	382.09	2,999.91	11.86 N	1.30 E	605,138.09	629,371.09	0.33	-8.44	
3,175.00	0.34	351.06	207.09	3,174.91	12.66 N	1.09 E	605,138.89	629,370.88	0.08	-9.20	last gyro
3,262.00	0.45	4.44	120.09	3,261.91	13.26 N	1.08 E	605,139.49	629,370.87	0.16	-9.68	
3,283.00	0.49	340.17	99.09	3,282.91	13.43 N	1.06 E	605,139.66	629,370.85	0.96	-9.82	
3,314.00	0.09	32.93	68.10	3,313.90	13.57 N	1.02 E	605,139.80	629,370.81	1.42	-9.95	
3,410.00	3.00	140.87	-27.86	3,409.86	11.68 N	2.65 E	605,137.91	629,372.44	3.16	-7.46	
3,505.00	5.89	141.84	-122.57	3,504.57	5.92 N	7.23 E	605,132.15	629,377.02	3.04	-0.10	
3,600.00	8.36	141.00	-216.82	3,598.82	3.28 S	14.59 E	605,122.95	629,384.38	2.60	11.68	
3,695.00	10.26	142.37	-310.57	3,692.57	15.35 S	24.10 E	605,110.88	629,393.89	2.01	27.05	
3,790.00	11.69	141.01	-403.83	3,785.83	29.53 S	35.33 E	605,096.70	629,405.12	1.53	45.13	

HALLIBURTON

Design Report for State "A" 14 Com #2 - Wellbore #1 - Wellbore #1

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
					Northing (ft)	Easting (ft)	Northing (ft)	Easting (ft)			
3,885.00	13.10	139.77	-496.61	3,878.61	45.23 S	48.34 E	605,081.00	629,418.13	1.51	65.52	
3,981.00	15.29	138.17	-589.68	3,971.68	62.97 S	63.81 E	605,063.26	629,433.60	2.32	89.03	
4,074.00	16.71	139.92	-679.07	4,061.07	82.34 S	80.59 E	605,043.89	629,450.38	1.61	114.65	
4,167.00	17.23	139.99	-768.02	4,150.02	103.12 S	98.06 E	605,023.11	629,467.85	0.56	141.78	
4,262.00	17.67	143.15	-858.65	4,240.65	125.43 S	115.75 E	605,000.80	629,485.54	1.10	170.26	
4,357.00	18.19	140.69	-949.04	4,331.04	148.44 S	133.79 E	604,977.79	629,503.58	0.97	199.50	
4,451.00	16.79	142.27	-1,038.69	4,420.69	170.53 S	151.39 E	604,955.70	629,521.18	1.57	227.74	
4,545.00	17.67	142.62	-1,128.47	4,510.47	192.61 S	168.36 E	604,933.62	629,538.15	0.94	255.58	
4,640.00	16.96	141.39	-1,219.17	4,601.17	214.89 S	185.76 E	604,911.34	629,555.55	0.84	283.85	
4,735.00	16.26	144.20	-1,310.20	4,692.20	236.51 S	202.19 E	604,889.72	629,571.98	1.12	310.99	
4,830.00	16.70	145.08	-1,401.30	4,783.30	258.49 S	217.78 E	604,867.74	629,587.57	0.53	337.90	
4,924.00	17.67	143.15	-1,491.10	4,873.10	280.98 S	234.07 E	604,845.25	629,603.86	1.20	365.63	
5,019.00	16.35	141.74	-1,581.95	4,963.95	303.02 S	251.00 E	604,823.21	629,620.79	1.46	393.42	
5,114.00	16.17	141.22	-1,673.15	5,055.15	323.83 S	267.56 E	604,802.40	629,637.35	0.24	420.01	
5,209.00	16.00	139.46	-1,764.43	5,146.43	344.09 S	284.36 E	604,782.14	629,654.15	0.54	446.33	
5,304.00	16.00	145.44	-1,855.75	5,237.75	364.82 S	300.30 E	604,761.41	629,670.09	1.73	472.48	
5,399.00	16.17	147.37	-1,947.04	5,329.04	386.75 S	314.86 E	604,739.48	629,684.65	0.59	498.69	
5,493.00	17.05	144.91	-2,037.11	5,419.11	409.05 S	329.84 E	604,717.18	629,699.63	1.20	525.46	
5,588.00	17.75	143.50	-2,127.77	5,509.77	432.08 S	346.46 E	604,694.15	629,716.25	0.86	553.83	
5,690.00	17.05	139.65	-2,225.10	5,607.10	455.98 S	365.39 E	604,670.25	629,735.18	1.32	584.32	
5,785.00	15.56	141.57	-2,316.28	5,698.28	476.58 S	382.33 E	604,649.65	629,752.12	1.67	610.98	
5,881.00	15.03	140.69	-2,408.88	5,790.88	496.29 S	398.22 E	604,629.94	629,768.01	0.60	636.30	
5,975.00	14.33	144.03	-2,499.81	5,881.81	515.14 S	412.77 E	604,611.09	629,782.56	1.17	660.11	
6,070.00	14.73	148.33	-2,591.78	5,973.78	534.93 S	426.02 E	604,591.30	629,795.81	1.21	683.84	
6,160.00	17.32	146.84	-2,678.27	6,060.27	555.89 S	439.36 E	604,570.34	629,809.15	2.91	708.54	
6,254.00	16.44	144.73	-2,768.22	6,150.22	578.46 S	454.69 E	604,547.77	629,824.48	1.14	735.74	
6,349.00	16.08	144.77	-2,859.42	6,241.42	600.19 S	470.04 E	604,526.04	629,839.83	0.38	762.30	
6,444.00	17.43	140.78	-2,950.39	6,332.39	621.96 S	486.63 E	604,504.27	629,856.42	1.87	789.66	
6,539.00	15.69	141.07	-3,041.44	6,423.44	642.98 S	503.70 E	604,483.25	629,873.49	1.83	816.73	
6,635.00	13.90	145.12	-3,134.26	6,516.26	662.53 S	518.45 E	604,463.70	629,888.24	2.15	841.22	
6,729.00	14.78	144.24	-3,225.33	6,607.33	681.53 S	531.91 E	604,444.70	629,901.70	0.96	864.46	
6,825.00	16.71	139.25	-3,317.73	6,699.73	701.92 S	548.08 E	604,424.31	629,917.87	2.45	890.49	
6,920.00	19.48	139.59	-3,408.02	6,790.02	724.33 S	567.27 E	604,401.90	629,937.06	2.92	919.98	
7,014.00	18.35	139.93	-3,496.94	6,878.94	747.59 S	586.96 E	604,378.64	629,956.75	1.21	950.44	
7,109.00	17.02	144.04	-3,587.46	6,968.46	770.29 S	604.75 E	604,355.94	629,974.54	1.92	979.28	
7,202.00	17.93	144.80	-3,676.16	7,058.16	793.01 S	620.99 E	604,333.22	629,990.78	1.01	1,007.16	
7,295.00	19.47	140.52	-3,764.26	7,146.26	816.67 S	639.10 E	604,309.56	630,008.89	2.22	1,036.95	
7,390.00	20.57	137.64	-3,853.52	7,235.52	841.22 S	660.41 E	604,285.01	630,030.20	1.55	1,069.44	
7,486.00	20.18	134.96	-3,943.51	7,325.51	865.39 S	683.49 E	604,260.84	630,053.28	1.05	1,102.73	

HALLIBURTON**Design Report for State "A" 14 Com #2 - Wellbore #1 - Wellbore #1**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	East (ft)	Map Coordinates Northing (ft)	East (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
7,581.00	17.93	139.55	-4,033.31	7,415.31	888.10 S	704.58 E	604,238.13	630,074.37	2.84	1,133.63	
7,676.00	17.37	142.66	-4,123.83	7,505.83	910.50 S	722.67 E	604,215.73	630,092.46	1.15	1,162.43	
7,769.00	16.69	137.33	-4,212.76	7,594.76	931.36 S	740.14 E	604,194.87	630,109.93	1.83	1,189.63	
7,864.00	16.54	140.96	-4,303.80	7,685.80	951.89 S	757.91 E	604,174.34	630,127.70	1.10	1,216.76	
7,959.00	16.68	139.87	-4,394.83	7,776.83	972.82 S	775.21 E	604,153.41	630,145.00	0.36	1,243.91	
8,055.00	17.14	141.14	-4,486.68	7,868.68	994.37 S	792.97 E	604,131.86	630,162.76	0.61	1,271.83	
8,150.00	17.09	140.83	-4,577.48	7,959.48	1,016.09 S	810.57 E	604,110.14	630,180.36	0.11	1,299.79	
8,245.00	17.65	140.61	-4,668.14	8,050.14	1,038.04 S	828.52 E	604,088.19	630,198.31	0.59	1,328.15	
8,341.00	18.71	143.22	-4,759.35	8,141.35	1,061.62 S	846.98 E	604,064.61	630,216.77	1.39	1,358.09	
8,436.00	17.41	139.66	-4,849.67	8,231.67	1,084.66 S	865.30 E	604,041.57	630,235.09	1.79	1,387.53	
8,531.00	17.71	139.98	-4,940.25	8,322.25	1,106.56 S	883.79 E	604,019.67	630,253.58	0.33	1,416.18	
8,626.00	16.84	142.15	-5,030.96	8,412.96	1,128.49 S	901.53 E	603,997.74	630,271.32	1.14	1,444.39	
8,720.00	16.29	142.86	-5,121.06	8,503.06	1,149.75 S	917.84 E	603,976.48	630,287.63	0.62	1,471.18	
8,815.00	17.37	142.46	-5,211.99	8,593.99	1,171.62 S	934.53 E	603,954.61	630,304.32	1.14	1,498.68	
8,909.00	17.60	140.96	-5,301.65	8,683.65	1,193.78 S	952.03 E	603,932.45	630,321.82	0.54	1,526.92	
9,004.00	17.42	141.47	-5,392.24	8,774.24	1,216.06 S	969.93 E	603,910.17	630,339.72	0.25	1,555.50	
9,099.00	17.47	141.17	-5,482.87	8,864.87	1,238.30 S	987.73 E	603,887.93	630,357.52	0.11	1,583.98	
9,194.00	18.12	141.07	-5,573.33	8,955.33	1,260.90 S	1,005.96 E	603,865.33	630,375.75	0.68	1,613.01	
9,290.00	18.01	141.36	-5,664.60	9,046.60	1,284.10 S	1,024.91 E	603,842.13	630,394.40	0.15	1,642.78	
9,385.00	16.20	140.17	-5,755.39	9,137.39	1,305.75 S	1,042.27 E	603,820.48	630,412.06	1.94	1,670.72	
9,480.00	16.97	140.08	-5,846.44	9,228.44	1,326.56 S	1,059.65 E	603,799.67	630,429.44	0.81	1,697.83	
9,575.00	16.95	139.77	-5,937.31	9,319.31	1,347.77 S	1,077.49 E	603,778.46	630,447.28	0.10	1,725.53	
9,670.00	16.78	141.57	-6,028.22	9,410.22	1,369.08 S	1,094.96 E	603,757.15	630,464.75	0.58	1,753.09	
9,765.00	15.78	147.63	-6,119.42	9,501.42	1,390.74 S	1,110.40 E	603,735.49	630,480.19	2.07	1,779.64	
9,859.00	16.43	146.72	-6,209.73	9,591.73	1,412.65 S	1,124.54 E	603,713.58	630,494.33	0.74	1,805.58	
9,954.00	16.79	146.74	-6,300.76	9,682.76	1,435.35 S	1,139.43 E	603,690.88	630,509.22	0.38	1,832.62	
10,050.00	16.59	147.49	-6,392.72	9,774.72	1,458.50 S	1,154.40 E	603,667.73	630,524.19	0.31	1,860.05	
10,145.00	15.99	142.42	-6,483.91	9,865.91	1,480.31 S	1,169.67 E	603,645.92	630,539.46	1.62	1,886.62	
10,240.00	16.15	145.88	-6,575.20	9,957.20	1,501.62 S	1,185.07 E	603,624.61	630,554.86	1.02	1,912.87	
10,335.00	16.05	143.40	-6,666.47	10,048.47	1,523.10 S	1,200.31 E	603,603.13	630,570.10	0.73	1,939.16	
10,430.00	17.81	139.68	-6,757.36	10,139.36	1,544.72 S	1,217.54 E	603,581.51	630,587.33	2.17	1,966.81	
10,525.00	17.31	143.15	-6,847.93	10,229.93	1,567.11 S	1,235.42 E	603,559.12	630,605.21	1.22	1,995.46	
10,620.00	13.97	145.08	-6,939.40	10,321.40	1,587.83 S	1,250.46 E	603,538.40	630,620.25	3.56	2,021.04	
10,715.00	14.63	141.61	-7,031.46	10,413.46	1,606.84 S	1,264.48 E	603,519.59	630,634.27	1.14	2,044.48	
10,810.00	16.69	138.37	-7,122.93	10,504.93	1,626.24 S	1,280.99 E	603,499.99	630,650.78	2.35	2,070.10	
10,905.00	18.14	137.95	-7,213.57	10,595.57	1,647.42 S	1,299.96 E	603,478.81	630,669.75	1.53	2,098.49	
10,999.00	18.77	138.62	-7,302.74	10,684.74	1,669.63 S	1,319.76 E	603,456.60	630,689.55	0.71	2,128.21	
11,094.00	17.34	143.34	-7,393.06	10,775.06	1,692.46 S	1,338.32 E	603,433.77	630,708.11	2.15	2,157.62	
11,189.00	17.53	139.89	-7,483.70	10,865.70	1,714.76 S	1,355.99 E	603,411.47	630,725.78	1.11	2,186.08	

HALLIBURTON

Cimarex Energy
Eddy County

Design Report for State "A" 14 Com #2 - Wellbore #1 - Wellbore #1

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Easting (ft)	Map Coordinates Northing (ft)	Easting (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
11,284.00	17.31	140.51	-7,574.34	10,956.34	1,736.61 S	1,374.19 E	603,389.62	630,743.98	0.30	2,214.51	
11,379.00	17.47	141.32	-7,665.00	11,047.00	1,758.65 S	1,392.09 E	603,367.58	630,761.88	0.31	2,242.90	
11,474.00	17.84	141.74	-7,755.53	11,137.53	1,781.21 S	1,410.02 E	603,345.02	630,779.81	0.41	2,271.71	
11,569.00	17.40	143.15	-7,846.07	11,228.07	1,804.00 S	1,427.55 E	603,322.23	630,797.34	0.65	2,300.46	
11,664.00	17.31	144.56	-7,936.75	11,318.75	1,826.88 S	1,444.26 E	603,299.35	630,814.05	0.45	2,328.77	
11,759.00	17.31	147.19	-8,027.45	11,409.45	1,850.27 S	1,460.11 E	603,275.96	630,829.90	0.82	2,356.94	
11,854.00	17.84	148.07	-8,118.01	11,500.01	1,874.50 S	1,475.47 E	603,251.73	630,845.26	0.62	2,385.45	
11,949.00	18.37	150.88	-8,208.31	11,590.31	1,899.93 S	1,490.45 E	603,226.30	630,860.24	1.08	2,414.67	
12,044.00	17.84	156.69	-8,298.61	11,680.61	1,926.38 S	1,503.49 E	603,199.85	630,873.28	1.98	2,443.46	
12,076.00	17.67	158.97	-8,329.09	11,711.09	1,935.41 S	1,507.18 E	603,190.82	630,876.97	2.24	2,452.82	last MWD survey
12,160.00	17.67	158.97	-8,409.13	11,791.13	1,959.21 S	1,516.33 E	603,167.02	630,886.12	0.00	2,477.11	projection to TD

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
3,175.00	3,174.91	12.66	1.09	last gyro
12,076.00	11,711.09	-1,935.41	1,507.18	last MWD survey
12,160.00	11,791.13	-1,959.21	1,516.33	projection to TD

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft)	+E/-W (ft)	Start TVD (ft)
User	No Target (Freehand)	141.32	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
100.00	3,175.00	Gyro Survey	NS-GYRO-SS
3,262.00	12,160.00	MWD Survey	MWD

HALLIBURTON

Cimarex Energy
Eddy County

Design Report for State "A" 14 Com #2 - Wellbore #1 - Wellbore #1

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
10.6K Tgt	0.00	0.00	10,600.00	-1,578.09	1,197.32	603,548.14	630,567.11	32° 39' 30.737 N	03° 54' 32.700 W
- actual wellpath misses by 123.94ft at 10905.00ft MD (10595.57 TVD, -1647.42 N, 1298.96 E)									
- Rectangle (sides W660.00 H660.00 D0.00)									
PBHL S #2	0.00	0.00	11,700.00	-1,908.09	1,527.32	603,218.14	630,897.11	32° 39' 27.458 N	03° 54' 28.856 W
- actual wellpath misses by 31.91ft at 12060.04ft MD (11695.89 TVD, -1930.90 N, 1505.39 E)									
- Point									

HALLIBURTON

North Reference Sheet for Sec 14-T19S-R29E - State "A" 14 Com #2 - 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 WELL @ 3382.00ft (Original Well Elev). Northing and Easting are relative to Sec 14-T19S-R29E

Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 3001 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866

Projection method is Transverse Mercator (Gauss-Kruger)

Central Meridian is 104° 20' 0.000 W", Longitude Origin: 0° 0' 0.000 E", Latitude Origin: 0° 0' 0.000 N"

False Easting: 500,000.00ft, False Northing: 0.00ft, Scale Reduction: 0.99992826

Grid Coordinates of Well: 605,126.23 ft N, 629,369.79 ft E

Geographical Coordinates of Well: 32° 39' 46.40" N, 103° 54' 46.63" W

Grid Convergence at Surface is: 0.23°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,160.00ft the Bottom Hole Displacement is 2,477.45ft in the Direction of 142.26° (Grid).

Magnetic Convergence at surface is: -8.19° (28 February 2006, BGGM2005)

