

Well Name: **Spaur 24-7**

Surface Location: Spaur 8-7 Pad Sec.7-T4N-R67W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

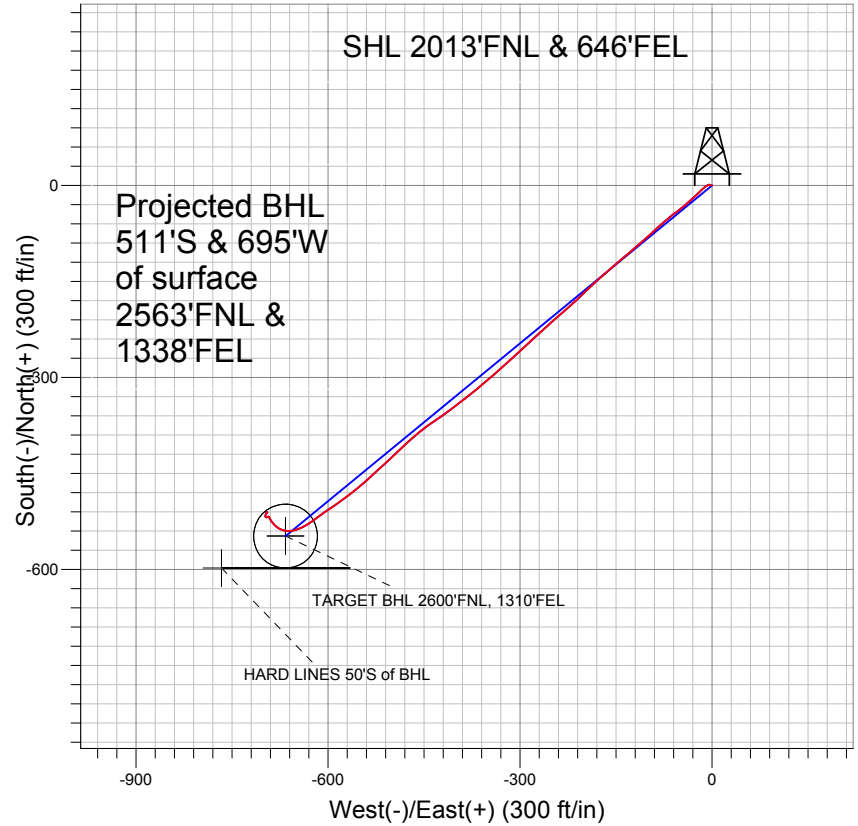
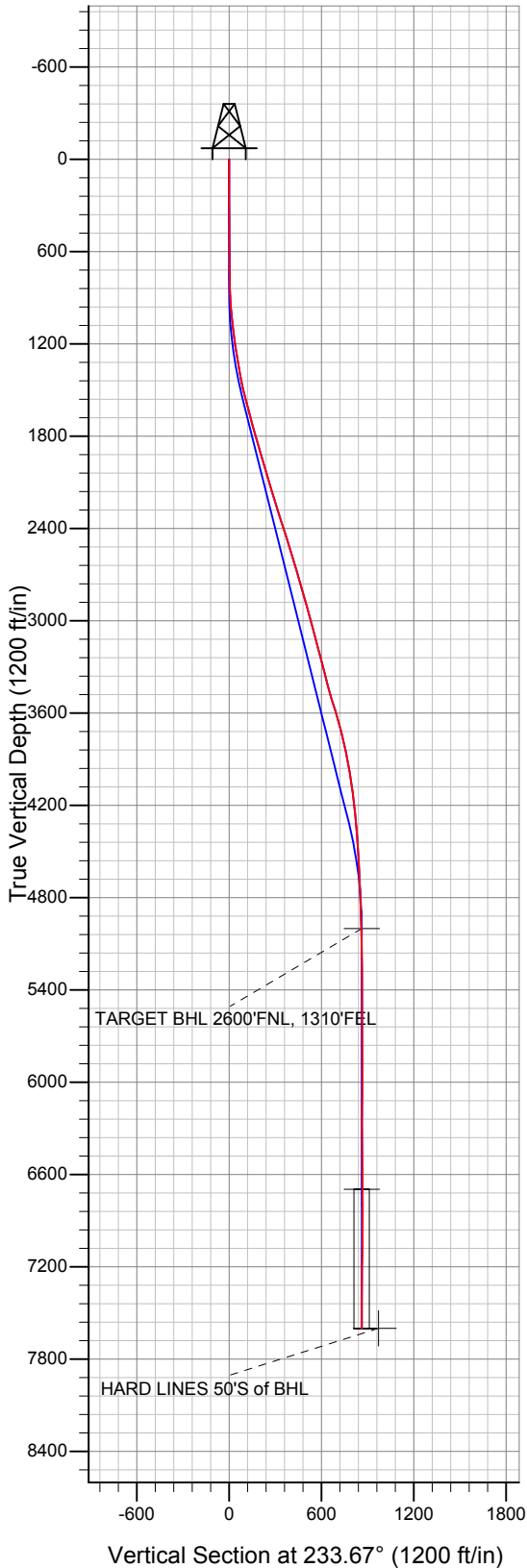
Ground Elevation: 4837.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1363356.47	3160008.86	40° 19' 45.815 N	104° 55' 33.877 W

Original Well Elev WELL @ 4851.0ft (Original Well Elev)

Slot

Anadarko, Weld County CO



LEGEND

- ✕ Spaur 24-7, Wellbore #1, Plan #1 (12-1-10) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
7710'MD & 7603'TVD @ 861' VS
0.4 deg Inc 144.2 deg AZ

Project: SEC.7-T4N-R67W
Site: Spaur 8-7 Pad Sec.7-T4N-R67W
Well: Spaur 24-7
Plan: Wellbore #1



Directional

Anadarko, Weld County CO

SEC.7-T4N-R67W

Spaur 8-7 Pad Sec.7-T4N-R67W

Spaur 24-7

Wellbore #1

Survey: Survey #1

Standard Survey Report

11 January, 2011

Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Spaur 24-7
Project:	SEC.7-T4N-R67W	TVD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site:	Spaur 8-7 Pad Sec.7-T4N-R67W	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Well:	Spaur 24-7	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.7-T4N-R67W		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Spaur 8-7 Pad Sec.7-T4N-R67W		
Site Position:		Northing:	1,363,379.94 ft
From:	Lat/Long	Easting:	3,160,030.73 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40° 19' 46.045 N
		Longitude:	104° 55' 33.593 W
		Grid Convergence:	0.37 °

Well	Spaur 24-7		
Well Position	+N-S	0.0 ft	Northing: 1,363,356.47 ft
	+E-W	0.0 ft	Easting: 3,160,008.86 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40° 19' 45.815 N
		Longitude:	104° 55' 33.877 W
		Ground Level:	4,837.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/8/2010	9.01	66.98	53,131

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N-S (ft)	+E-W (ft)	Direction (°)	
	0.0	0.0	0.0	233.67	

Survey Program	Date	1/11/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
139.0	7,710.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

Survey										
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)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
139.0	0.30	269.30	139.0	0.0	-0.4	0.3	0.22	0.22	0.00	
263.0	0.40	270.40	263.0	0.0	-1.1	0.9	0.08	0.08	0.89	
402.0	0.40	316.20	402.0	0.3	-1.9	1.4	0.22	0.00	32.95	
535.0	0.60	273.70	535.0	0.7	-3.0	2.0	0.31	0.15	-31.95	
668.0	0.70	284.80	668.0	1.0	-4.4	3.0	0.12	0.08	8.35	
779.0	0.50	249.50	779.0	1.0	-5.5	3.9	0.37	-0.18	-31.80	
854.0	2.40	243.60	853.9	0.2	-7.3	5.7	2.54	2.53	-7.87	
942.0	3.70	231.60	941.8	-2.4	-11.1	10.4	1.64	1.48	-13.64	
1,031.0	6.20	226.30	1,030.5	-7.5	-16.9	18.0	2.85	2.81	-5.96	
1,120.0	6.90	227.70	1,118.9	-14.4	-24.3	28.1	0.81	0.79	1.57	
1,208.0	8.00	225.60	1,206.2	-22.3	-32.6	39.4	1.29	1.25	-2.39	
1,297.0	9.60	232.10	1,294.1	-31.2	-42.9	53.0	2.11	1.80	7.30	

Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Spaur 24-7
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Site:	Spaur 8-7 Pad Sec.7-T4N-R67W	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Well:	Spaur 24-7	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey

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)
1,386.0	10.40	231.90	1,381.8	-40.7	-55.0	68.4	0.90	0.90	-0.22
1,474.0	12.30	230.70	1,468.0	-51.5	-68.5	85.7	2.18	2.16	-1.36
1,563.0	14.40	227.90	1,554.6	-65.0	-84.1	106.2	2.47	2.36	-3.15
1,652.0	14.90	227.80	1,640.7	-80.1	-100.8	128.6	0.56	0.56	-0.11
1,740.0	15.60	228.80	1,725.6	-95.4	-118.1	151.7	0.85	0.80	1.14
1,829.0	16.50	228.90	1,811.2	-111.6	-136.6	176.2	1.01	1.01	0.11
1,917.0	16.00	230.50	1,895.6	-127.6	-155.4	200.7	0.76	-0.57	1.82
2,006.0	16.00	228.50	1,981.2	-143.5	-174.0	225.2	0.62	0.00	-2.25
2,095.0	16.80	225.80	2,066.6	-160.6	-192.4	250.2	1.24	0.90	-3.03
2,183.0	17.00	226.60	2,150.8	-178.3	-210.9	275.5	0.35	0.23	0.91
2,272.0	17.30	229.60	2,235.8	-195.8	-230.4	301.6	1.05	0.34	3.37
2,361.0	18.30	228.30	2,320.6	-213.7	-250.9	328.8	1.21	1.12	-1.46
2,449.0	18.00	227.80	2,404.2	-232.0	-271.3	356.0	0.38	-0.34	-0.57
2,538.0	16.50	226.90	2,489.2	-249.9	-290.7	382.3	1.71	-1.69	-1.01
2,627.0	16.80	227.80	2,574.4	-267.2	-309.5	407.6	0.44	0.34	1.01
2,715.0	17.30	227.50	2,658.6	-284.5	-328.6	433.3	0.58	0.57	-0.34
2,804.0	16.70	229.30	2,743.7	-301.8	-348.0	459.2	0.90	-0.67	2.02
2,893.0	15.40	230.80	2,829.2	-317.6	-366.9	483.7	1.53	-1.46	1.69
2,981.0	15.40	232.10	2,914.1	-332.2	-385.1	507.1	0.39	0.00	1.48
3,070.0	15.10	232.00	2,999.9	-346.6	-403.6	530.5	0.34	-0.34	-0.11
3,158.0	14.70	235.70	3,085.0	-359.9	-421.9	553.1	1.17	-0.45	4.20
3,247.0	15.20	235.40	3,171.0	-372.9	-440.8	576.0	0.57	0.56	-0.34
3,336.0	14.80	230.10	3,256.9	-386.8	-459.1	599.1	1.60	-0.45	-5.96
3,424.0	14.40	227.10	3,342.1	-401.5	-475.8	621.1	0.97	-0.45	-3.41
3,513.0	15.30	226.50	3,428.1	-417.1	-492.4	643.8	1.03	1.01	-0.67
3,602.0	16.70	227.90	3,513.7	-433.8	-510.4	668.2	1.63	1.57	1.57
3,690.0	16.50	226.80	3,598.0	-450.8	-528.9	693.1	0.42	-0.23	-1.25
3,779.0	15.70	229.40	3,683.5	-467.3	-547.2	717.7	1.21	-0.90	2.92
3,868.0	13.90	233.20	3,769.5	-481.5	-564.9	740.4	2.30	-2.02	4.27
3,956.0	12.00	232.70	3,855.3	-493.4	-580.7	760.1	2.16	-2.16	-0.57
4,045.0	9.30	236.60	3,942.8	-503.0	-594.0	776.6	3.14	-3.03	4.38
4,133.0	8.60	235.60	4,029.7	-510.6	-605.4	790.2	0.81	-0.80	-1.14
4,222.0	7.40	233.80	4,117.8	-517.8	-615.5	802.6	1.38	-1.35	-2.02
4,311.0	6.40	232.70	4,206.2	-524.2	-624.1	813.3	1.13	-1.12	-1.24
4,399.0	5.80	237.20	4,293.7	-529.5	-631.7	822.7	0.87	-0.68	5.11
4,488.0	4.40	243.60	4,382.3	-533.5	-638.6	830.5	1.70	-1.57	7.19
4,577.0	3.90	251.10	4,471.1	-536.0	-644.5	836.8	0.83	-0.56	8.43
4,665.0	3.50	251.10	4,558.9	-537.8	-649.9	842.2	0.45	-0.45	0.00
4,754.0	2.50	256.30	4,647.8	-539.2	-654.3	846.6	1.16	-1.12	5.84
4,843.0	2.40	271.50	4,736.7	-539.6	-658.1	849.8	0.74	-0.11	17.08
4,976.0	2.70	266.70	4,869.6	-539.7	-664.0	854.6	0.28	0.23	-3.61
5,106.4	2.50	282.27	4,999.8	-539.3	-669.8	859.1	0.56	-0.15	11.94
TARGET BHL 2600'FNL, 1310'FEL									
5,109.0	2.50	282.60	5,002.4	-539.2	-669.9	859.2	0.56	-0.07	12.74
5,241.0	1.90	296.10	5,134.3	-537.6	-674.7	862.1	0.60	-0.45	10.23
5,374.0	1.90	311.80	5,267.3	-535.2	-678.3	863.6	0.39	0.00	11.80
5,507.0	1.40	312.00	5,400.2	-532.6	-681.2	864.3	0.38	-0.38	0.15
5,640.0	0.80	318.00	5,533.2	-530.9	-683.0	864.8	0.46	-0.45	4.51
5,773.0	0.90	312.30	5,666.2	-529.5	-684.4	865.1	0.10	0.08	-4.29
5,906.0	1.20	316.90	5,799.2	-527.8	-686.1	865.4	0.23	0.23	3.46
6,039.0	1.40	321.00	5,932.1	-525.5	-688.1	865.7	0.17	0.15	3.08
6,172.0	2.00	332.00	6,065.1	-522.2	-690.2	865.4	0.51	0.45	8.27
6,305.0	0.80	329.10	6,198.0	-519.3	-691.8	865.0	0.90	-0.90	-2.18
6,438.0	0.60	349.20	6,331.0	-517.8	-692.4	864.6	0.24	-0.15	15.11

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6,571.0	0.60	240.90	6,464.0	-517.5	-693.1	865.0	0.73	0.00	-81.43	
6,704.0	0.60	285.00	6,597.0	-517.6	-694.4	866.1	0.34	0.00	33.16	
6,802.9	0.57	220.03	6,695.9	-517.9	-695.2	866.9	0.63	-0.03	-65.69	
TARGET CIRCLE 2600'FNL, 1310'FEL										
6,837.0	0.70	204.50	6,730.0	-518.2	-695.4	867.3	0.63	0.39	-45.55	
6,970.0	1.30	294.60	6,863.0	-518.3	-697.1	868.7	1.11	0.45	67.74	
7,103.0	1.50	8.00	6,995.9	-516.0	-698.3	868.2	1.26	0.15	55.19	
7,236.0	1.60	30.00	7,128.9	-512.6	-697.1	865.3	0.45	0.08	16.54	
7,369.0	0.40	40.00	7,261.9	-510.7	-695.9	863.1	0.91	-0.90	7.52	
7,502.0	0.00	112.20	7,394.9	-510.3	-695.6	862.7	0.30	-0.30	0.00	
7,635.0	0.40	144.20	7,527.9	-510.7	-695.3	862.7	0.30	0.30	0.00	
7,707.3	0.40	144.20	7,600.2	-511.1	-695.0	862.7	0.00	0.00	0.00	
HARD LINES 50'S of BHL										
7,710.0	0.40	144.20	7,602.9	-511.1	-695.0	862.7	0.00	0.00	0.00	

Checked By: _____ Approved By: _____ Date: _____