

Well Name: **Spaur 41-7**

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

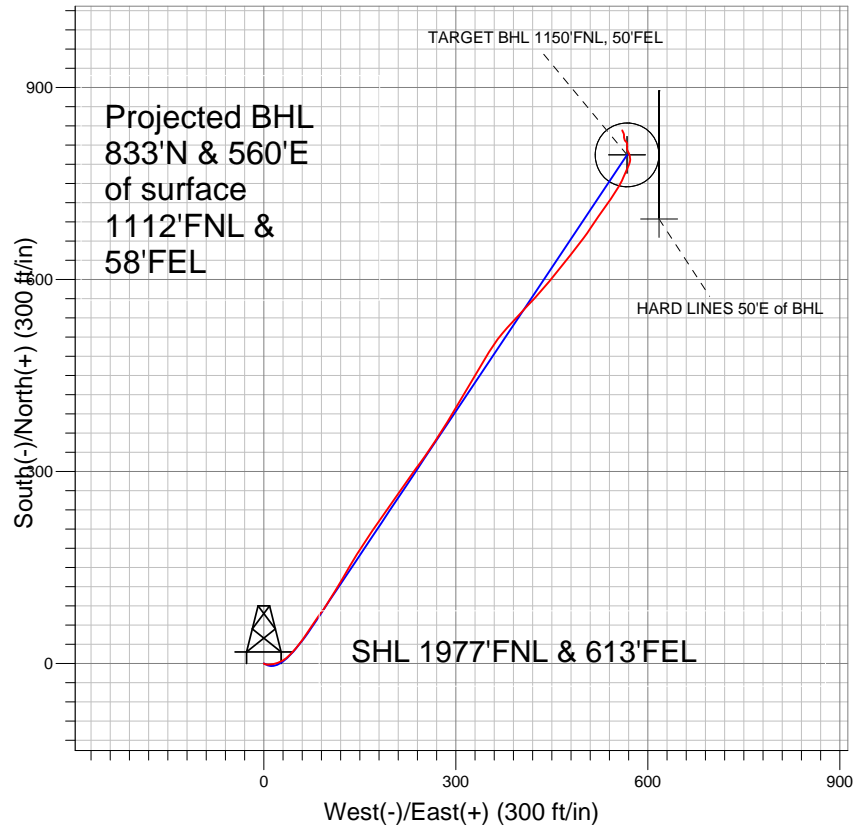
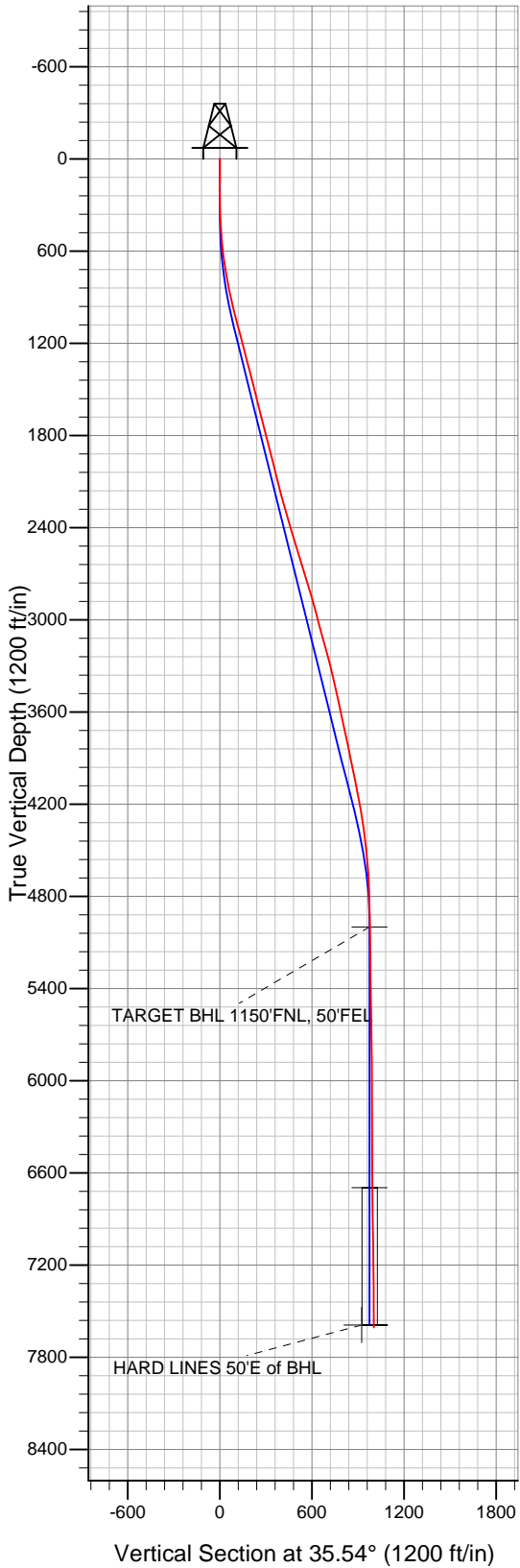
Ground Elevation: 4837.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1363391.29	3160041.81	40° 19' 46.157 N	104° 55' 33.449 W

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

Slot

Anadarko, Weld County CO



LEGEND

- ◆ Spaur 41-7, Wellbore #1, Plan #1 (12-20-10) V0
- Wellbore #1

Final Survey Plot

Projected Final Survey -
7724'MD & 7606'TVD @ 1003' VS
0.6 deg Inc 332.9 deg AZ

Project: SEC.7-T4N-R67W
Site: Spaur 8-7 Pad Sec.7-T4N-R67W
Well: Spaur 41-7
Plan: Wellbore #1



Directional

Anadarko, Weld County CO

SEC.7-T4N-R67W

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

Spaur 41-7

Wellbore #1

Design: Wellbore #1

Standard Survey Report

19 January, 2011



Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Spaur 41-7
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 41-7	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:	1,363,379.94ft	Latitude:	40° 19' 46.045 N
From:	Lat/Long	Easting:	3,160,030.73ft	Longitude:	104° 55' 33.593 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.37 °

Well	Spaur 41-7					
Well Position	+N-S	0.0 ft	Northing:	1,363,391.29 ft	Latitude:	40° 19' 46.157 N
	+E-W	0.0 ft	Easting:	3,160,041.81 ft	Longitude:	104° 55' 33.449 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,837.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/11/2011	9.00	66.98	53,121

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 (°)	
	5,000.0	0.0	0.0	35.54	

Survey Program	Date	1/19/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
140.0	7,724.0	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	
140.0	0.40	152.00	140.0	-0.4	0.2	-0.2	0.29	0.29	0.00	
202.0	0.75	121.86	202.0	-0.8	0.7	-0.3	0.73	0.56	-48.61	
297.0	2.60	98.30	297.0	-1.5	3.3	0.7	2.04	1.95	-24.80	
361.0	3.80	92.10	360.9	-1.8	6.9	2.6	1.95	1.88	-9.69	
450.0	5.36	80.80	449.6	-1.2	13.9	7.1	2.02	1.75	-12.70	
538.0	6.10	68.80	537.1	1.1	22.4	13.9	1.60	0.84	-13.64	
625.0	7.70	58.40	623.5	5.9	31.6	23.2	2.33	1.84	-11.95	
714.0	9.50	45.30	711.5	14.2	41.9	35.9	2.98	2.02	-14.72	
808.0	10.30	35.70	804.1	26.4	52.4	51.9	1.95	0.85	-10.21	
897.0	12.40	36.60	891.4	40.6	62.7	69.5	2.37	2.36	1.01	
985.0	14.06	33.40	977.0	57.1	74.2	89.6	2.06	1.89	-3.64	
1,074.0	14.90	36.40	1,063.2	75.3	87.0	111.8	1.27	0.94	3.37	

Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Spaur 41-7
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 41-7	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)	
1,163.0	14.60	31.80	1,149.3	94.1	99.7	134.5	1.36	-0.34	-5.17	
1,251.0	14.50	31.40	1,234.4	112.9	111.2	156.5	0.16	-0.11	-0.45	
1,340.0	14.90	31.10	1,320.5	132.2	123.0	179.0	0.46	0.45	-0.34	
1,429.0	14.60	29.40	1,406.6	151.8	134.4	201.6	0.59	-0.34	-1.91	
1,517.0	14.50	31.20	1,491.8	170.9	145.5	223.6	0.53	-0.11	2.05	
1,606.0	14.30	36.00	1,578.0	189.3	157.8	245.7	1.36	-0.22	5.39	
1,694.0	13.80	32.70	1,663.4	206.9	169.8	267.1	1.07	-0.57	-3.75	
1,783.0	14.00	35.10	1,749.7	224.6	181.7	288.4	0.69	0.22	2.70	
1,872.0	14.90	34.40	1,835.9	242.9	194.4	310.6	1.03	1.01	-0.79	
1,960.0	14.50	35.30	1,921.1	261.2	207.2	333.0	0.52	-0.45	1.02	
2,049.0	13.70	34.30	2,007.4	279.0	219.5	354.7	0.94	-0.90	-1.12	
2,138.0	13.70	37.30	2,093.8	296.1	231.9	375.7	0.80	0.00	3.37	
2,226.0	15.10	35.80	2,179.1	313.7	244.9	397.6	1.65	1.59	-1.70	
2,315.0	16.00	33.60	2,264.8	333.3	258.4	421.5	1.21	1.01	-2.47	
2,404.0	17.10	33.00	2,350.1	354.5	272.4	446.8	1.25	1.24	-0.67	
2,492.0	16.80	31.40	2,434.3	376.2	286.0	472.4	0.63	-0.34	-1.82	
2,581.0	15.90	32.10	2,519.7	397.5	299.2	497.4	1.04	-1.01	0.79	
2,670.0	16.90	30.00	2,605.1	419.1	312.2	522.4	1.31	1.12	-2.36	
2,758.0	17.50	29.50	2,689.1	441.6	325.1	548.3	0.70	0.68	-0.57	
2,847.0	17.50	31.80	2,774.0	464.7	338.7	575.0	0.78	0.00	2.58	
2,935.0	16.00	31.30	2,858.3	486.3	352.0	600.3	1.71	-1.70	-0.57	
3,024.0	15.50	36.70	2,944.0	506.3	365.5	624.4	1.74	-0.56	6.07	
3,113.0	14.60	42.90	3,029.9	524.0	380.2	647.4	2.07	-1.01	6.97	
3,201.0	15.50	42.30	3,114.9	540.9	395.7	670.1	1.04	1.02	-0.68	
3,290.0	15.70	43.20	3,200.6	558.4	411.9	693.9	0.35	0.22	1.01	
3,379.0	14.40	41.70	3,286.6	575.5	427.5	716.8	1.52	-1.46	-1.69	
3,467.0	13.20	41.10	3,372.0	591.2	441.4	737.7	1.37	-1.36	-0.68	
3,556.0	12.30	38.30	3,458.8	606.3	454.0	757.3	1.23	-1.01	-3.15	
3,645.0	12.30	38.20	3,545.8	621.2	465.7	776.2	0.02	0.00	-0.11	
3,733.0	12.40	38.90	3,631.7	635.9	477.4	795.0	0.20	0.11	0.80	
3,822.0	11.70	38.40	3,718.8	650.4	489.0	813.5	0.80	-0.79	-0.56	
3,910.0	12.50	36.00	3,804.8	665.1	500.2	832.0	1.07	0.91	-2.73	
3,999.0	10.80	33.20	3,892.0	679.9	510.4	849.9	2.01	-1.91	-3.15	
4,088.0	12.30	34.70	3,979.2	694.7	520.4	867.7	1.72	1.69	1.69	
4,176.0	11.50	35.40	4,065.3	709.5	530.8	885.9	0.92	-0.91	0.80	
4,265.0	11.00	35.10	4,152.6	723.7	540.8	903.3	0.57	-0.56	-0.34	
4,354.0	9.50	32.30	4,240.2	736.9	549.6	919.1	1.78	-1.69	-3.15	
4,442.0	8.30	28.50	4,327.1	748.6	556.5	932.6	1.52	-1.36	-4.32	
4,531.0	6.80	23.20	4,415.3	759.1	561.7	944.2	1.86	-1.69	-5.96	
4,620.0	6.10	26.30	4,503.8	768.2	565.8	954.0	0.88	-0.79	3.48	
4,708.0	5.50	20.80	4,591.3	776.3	569.4	962.7	0.93	-0.68	-6.25	
4,797.0	3.70	19.10	4,680.0	783.0	571.9	969.5	2.03	-2.02	-1.91	
4,886.0	2.30	352.90	4,768.9	787.5	572.6	973.6	2.16	-1.57	-29.44	
4,974.0	1.80	350.10	4,856.8	790.6	572.1	975.9	0.58	-0.57	-3.18	
5,063.0	1.45	352.60	4,945.8	793.1	571.7	977.7	0.40	-0.39	2.81	
5,117.2	1.42	346.42	5,000.0	794.4	571.5	978.6	0.29	-0.06	-11.40	
TARGET BHL 1150'FNL, 50'FEL										
5,196.0	1.40	337.10	5,078.8	796.3	570.9	979.8	0.29	-0.02	-11.83	
5,329.0	1.60	326.80	5,211.7	799.3	569.2	981.3	0.25	0.15	-7.74	
5,462.0	1.30	347.30	5,344.7	802.3	567.9	983.0	0.45	-0.23	15.41	
5,595.0	1.10	1.00	5,477.7	805.1	567.6	985.0	0.26	-0.15	10.30	
5,728.0	1.00	8.30	5,610.6	807.5	567.8	987.1	0.13	-0.08	5.49	
5,861.0	0.90	3.40	5,743.6	809.7	568.0	989.0	0.10	-0.08	-3.68	
5,994.0	0.70	353.50	5,876.6	811.6	568.0	990.5	0.18	-0.15	-7.44	

Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Spaur 41-7
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 41-7	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)	
6,126.0	0.60	341.30	6,008.6	813.0	567.7	991.5	0.13	-0.08	-9.24	
6,259.0	0.50	311.10	6,141.6	814.0	567.0	992.0	0.23	-0.08	-22.71	
6,392.0	0.20	315.90	6,274.6	814.6	566.4	992.1	0.23	-0.23	3.61	
6,525.0	0.60	316.30	6,407.6	815.3	565.8	992.3	0.30	0.30	0.30	
6,658.0	0.90	322.80	6,540.6	816.6	564.7	992.7	0.23	0.23	4.89	
6,791.0	1.20	336.10	6,673.5	818.7	563.5	993.7	0.29	0.23	10.00	
6,813.0	1.18	340.42	6,695.5	819.1	563.3	994.0	0.42	-0.08	19.67	
TARGET CIRCLE 1150'FNL, 50'FEL										
6,924.0	1.20	2.80	6,806.5	821.4	563.0	995.6	0.42	0.02	20.16	
7,057.0	1.10	358.90	6,939.5	824.0	563.0	997.8	0.10	-0.08	-2.93	
7,190.0	1.10	350.10	7,072.5	826.6	562.8	999.7	0.13	0.00	-6.62	
7,323.0	0.80	335.00	7,205.4	828.7	562.1	1,001.1	0.29	-0.23	-11.35	
7,456.0	0.70	330.00	7,338.4	830.2	561.3	1,001.9	0.09	-0.08	-3.76	
7,589.0	0.60	332.90	7,471.4	831.5	560.6	1,002.5	0.08	-0.08	2.18	
7,706.0	0.60	332.90	7,588.4	832.6	560.1	1,003.1	0.00	0.00	0.00	
HARD LINES 50'E of BHL										
7,724.0	0.60	332.90	7,606.4	832.8	560.0	1,003.2	0.00	0.00	0.00	

Checked By: _____ Approved By: _____ Date: _____