

Well Name: **Rural 19-31**

Surface Location: Rural 22-31 Pad Sec.31-T4N-R65W
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone

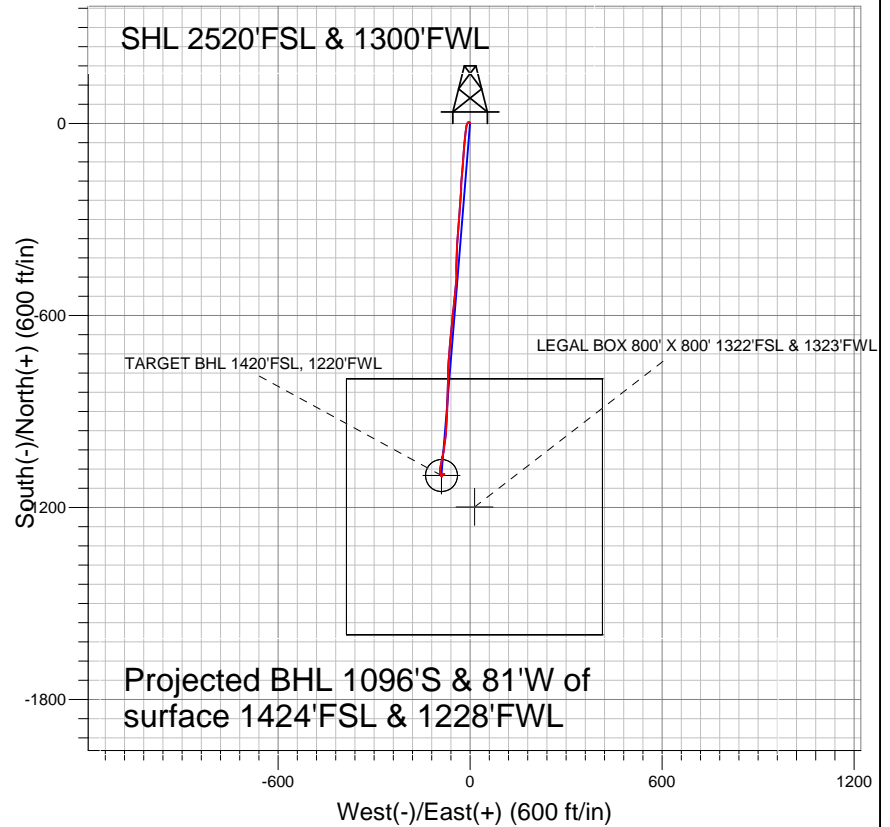
Ground Elevation: 4880.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1341661.16	3220187.31	40° 16' 6.852 N	104° 42' 39.348 W

Original Well Elev WELL @ 4894.0ft (Original Well Elev)

Slot

Anadarko, Weld County CO

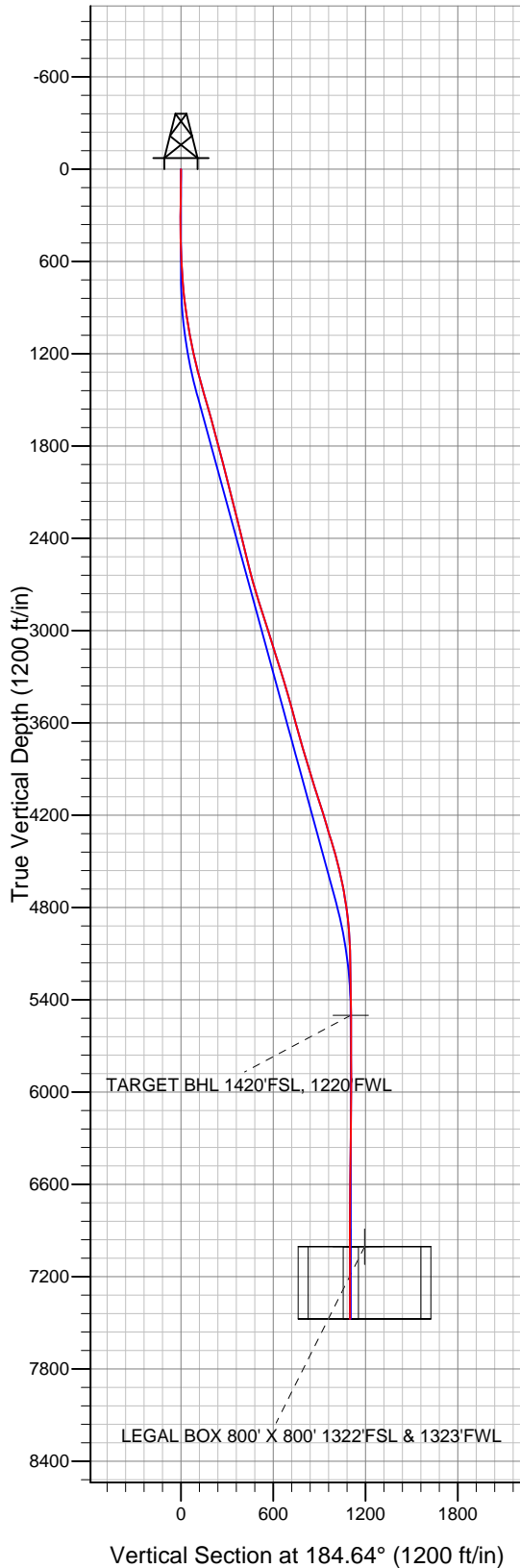


LEGEND

- + Rural 19-31, Wellbore #1, Plan #2 (1-12-11) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
 7620'MD & 7476'TVD @ 1099' VS
 0.1 deg Inc 201.9 deg AZ



Project: SEC.31-T4N-R65W
 Site: Rural 22-31 Pad Sec.31-T4N-R65W
 Well: Rural 19-31
 Plan: Wellbore #1



Directional

Anadarko, Weld County CO

SEC.31-T4N-R65W

Rural 22-31 Pad Sec.31-T4N-R65W

Rural 19-31

Wellbore #1

Survey: Survey #1

Standard Survey Report

03 February, 2011

Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Rural 19-31
Project:	SEC.31-T4N-R65W	TVD Reference:	WELL @ 4894.0ft (Original Well Elev)
Site:	Rural 22-31 Pad Sec.31-T4N-R65W	MD Reference:	WELL @ 4894.0ft (Original Well Elev)
Well:	Rural 19-31	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.31-T4N-R65W		
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	Rural 22-31 Pad Sec.31-T4N-R65W		
Site Position:		Northing:	1,341,693.95ft
From:	Lat/Long	Easting:	3,220,187.02ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40° 16' 7.176 N
		Longitude:	104° 42' 39.348 W
		Grid Convergence:	0.51 °

Well	Rural 19-31		
Well Position	+N/-S	0.0 ft	Northing:
	+E/-W	0.0 ft	Easting:
Position Uncertainty		0.0 ft	Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/11/2011	8.88	66.97	53,113

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 (°)	
	5,500.0	0.0	0.0	184.64	

Survey Program	Date	2/3/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
51.0	7,620.0	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	
51.0	0.80	345.10	51.0	0.3	-0.1	-0.3	1.57	1.57	0.00	
113.0	1.00	335.50	113.0	1.3	-0.4	-1.2	0.40	0.32	-15.48	
175.0	1.10	335.70	175.0	2.3	-0.9	-2.2	0.16	0.16	0.32	
237.0	1.40	306.70	237.0	3.3	-1.7	-3.1	1.11	0.48	-46.77	
299.0	1.60	292.40	298.9	4.1	-3.2	-3.8	0.68	0.32	-23.06	
363.0	1.50	262.90	362.9	4.3	-4.8	-3.9	1.24	-0.16	-46.09	
452.0	2.00	207.00	451.9	2.8	-6.7	-2.2	1.91	0.56	-62.81	
540.0	2.50	211.30	539.8	-0.2	-8.4	0.9	0.60	0.57	4.89	
658.0	2.90	197.80	657.7	-5.3	-10.6	6.1	0.63	0.34	-11.44	
749.0	4.50	186.90	748.5	-11.0	-11.8	11.9	1.91	1.76	-11.98	
854.0	6.90	189.30	853.0	-21.3	-13.3	22.3	2.30	2.29	2.29	
942.0	8.60	188.40	940.2	-33.1	-15.1	34.2	1.94	1.93	-1.02	

Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Rural 19-31
Project:	SEC.31-T4N-R65W	TVD Reference:	WELL @ 4894.0ft (Original Well Elev)
Site:	Rural 22-31 Pad Sec.31-T4N-R65W	MD Reference:	WELL @ 4894.0ft (Original Well Elev)
Well:	Rural 19-31	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)
1,031.0	9.80	184.20	1,028.0	-47.2	-16.6	48.4	1.54	1.35	-4.72
1,120.0	11.10	182.80	1,115.5	-63.3	-17.6	64.5	1.49	1.46	-1.57
1,208.0	12.00	184.00	1,201.8	-80.9	-18.6	82.1	1.06	1.02	1.36
1,297.0	14.50	185.80	1,288.4	-101.2	-20.4	102.5	2.85	2.81	2.02
1,385.0	15.30	185.60	1,373.4	-123.7	-22.7	125.1	0.91	0.91	-0.23
1,474.0	15.70	185.20	1,459.2	-147.4	-24.9	148.9	0.47	0.45	-0.45
1,563.0	16.10	184.00	1,544.8	-171.7	-26.8	173.3	0.58	0.45	-1.35
1,651.0	15.40	181.10	1,629.5	-195.6	-27.9	197.2	1.20	-0.80	-3.30
1,740.0	14.50	183.50	1,715.5	-218.5	-28.8	220.1	1.23	-1.01	2.70
1,829.0	15.20	183.40	1,801.5	-241.3	-30.2	242.9	0.79	0.79	-0.11
1,917.0	14.70	185.20	1,886.5	-263.9	-31.9	265.6	0.78	-0.57	2.05
2,006.0	14.80	182.60	1,972.6	-286.5	-33.4	288.3	0.75	0.11	-2.92
2,095.0	14.20	186.10	2,058.7	-308.7	-35.1	310.5	1.19	-0.67	3.93
2,183.0	13.70	184.70	2,144.2	-329.8	-37.1	331.7	0.69	-0.57	-1.59
2,272.0	14.20	183.30	2,230.5	-351.2	-38.6	353.2	0.68	0.56	-1.57
2,360.0	14.60	186.00	2,315.8	-373.0	-40.4	375.1	0.89	0.45	3.07
2,449.0	13.50	182.60	2,402.1	-394.6	-42.0	396.7	1.54	-1.24	-3.82
2,538.0	13.40	177.30	2,488.7	-415.3	-42.0	417.3	1.39	-0.11	-5.96
2,626.0	14.20	180.20	2,574.1	-436.2	-41.6	438.2	1.20	0.91	3.30
2,715.0	15.30	179.80	2,660.2	-458.9	-41.6	460.7	1.24	1.24	-0.45
2,804.0	17.00	184.80	2,745.7	-483.6	-42.6	485.5	2.47	1.91	5.62
2,892.0	17.30	184.70	2,829.8	-509.5	-44.8	511.4	0.34	0.34	-0.11
2,981.0	18.10	186.50	2,914.6	-536.4	-47.4	538.5	1.09	0.90	2.02
3,070.0	17.80	185.30	2,999.2	-563.7	-50.2	565.9	0.54	-0.34	-1.35
3,158.0	16.70	186.50	3,083.3	-589.6	-52.9	592.0	1.31	-1.25	1.36
3,247.0	18.00	185.30	3,168.2	-616.0	-55.6	618.5	1.51	1.46	-1.35
3,336.0	17.60	185.60	3,252.9	-643.1	-58.2	645.7	0.46	-0.45	0.34
3,424.0	16.50	186.20	3,337.1	-668.8	-60.9	671.5	1.27	-1.25	0.68
3,513.0	15.80	182.90	3,422.6	-693.4	-62.8	696.2	1.30	-0.79	-3.71
3,601.0	15.90	186.50	3,507.2	-717.4	-64.8	720.3	1.12	0.11	4.09
3,690.0	15.40	183.30	3,592.9	-741.3	-66.9	744.3	1.12	-0.56	-3.60
3,779.0	15.40	182.50	3,678.7	-764.9	-68.1	767.9	0.24	0.00	-0.90
3,867.0	16.00	180.30	3,763.4	-788.7	-68.6	791.7	0.96	0.68	-2.50
3,956.0	16.10	181.70	3,849.0	-813.3	-69.1	816.2	0.45	0.11	1.57
4,045.0	17.80	181.30	3,934.1	-839.2	-69.7	842.1	1.91	1.91	-0.45
4,133.0	18.20	182.70	4,017.8	-866.4	-70.7	869.3	0.67	0.45	1.59
4,222.0	17.70	182.50	4,102.5	-893.8	-71.9	896.7	0.57	-0.56	-0.22
4,311.0	17.00	181.20	4,187.4	-920.3	-72.8	923.2	0.90	-0.79	-1.46
4,399.0	16.30	184.70	4,271.7	-945.5	-74.1	948.4	1.39	-0.80	3.98
4,488.0	17.30	184.80	4,356.9	-971.1	-76.2	974.1	1.12	1.12	0.11
4,576.0	16.10	187.50	4,441.2	-996.3	-78.9	999.4	1.62	-1.36	3.07
4,665.0	13.60	189.10	4,527.2	-1,018.8	-82.2	1,022.2	2.85	-2.81	1.80
4,754.0	12.30	189.90	4,614.0	-1,038.5	-85.4	1,042.0	1.47	-1.46	0.90
4,842.0	10.50	192.70	4,700.2	-1,055.6	-88.8	1,059.3	2.14	-2.05	3.18
4,931.0	8.30	189.80	4,788.0	-1,069.8	-91.7	1,073.7	2.53	-2.47	-3.26
5,020.0	6.50	188.00	4,876.3	-1,081.1	-93.5	1,085.2	2.04	-2.02	-2.02
5,108.0	4.00	173.40	4,963.9	-1,089.1	-93.8	1,093.1	3.20	-2.84	-16.59
5,197.0	2.30	153.90	5,052.8	-1,093.8	-92.7	1,097.7	2.23	-1.91	-21.91
5,286.0	1.40	171.00	5,141.7	-1,096.5	-91.7	1,100.3	1.18	-1.01	19.21
5,374.0	1.10	167.70	5,229.7	-1,098.4	-91.4	1,102.2	0.35	-0.34	-3.75
5,507.0	0.80	144.80	5,362.7	-1,100.4	-90.6	1,104.1	0.36	-0.23	-17.22
5,640.0	0.70	136.50	5,495.7	-1,101.7	-89.5	1,105.4	0.11	-0.08	-6.24
5,644.3	0.69	136.14	5,500.0	-1,101.8	-89.5	1,105.4	0.34	-0.32	-8.38

TARGET BHL 1420'FSL, 1220'FWL

Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Rural 19-31
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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)
5,773.0	0.30	110.10	5,628.7	-1,102.4	-88.6	1,106.0	0.34	-0.30	-20.23
5,906.0	0.10	98.90	5,761.7	-1,102.6	-88.2	1,106.1	0.15	-0.15	-8.42
6,039.0	0.20	218.20	5,894.7	-1,102.8	-88.2	1,106.3	0.20	0.08	89.70
6,172.0	0.20	353.10	6,027.7	-1,102.7	-88.4	1,106.3	0.28	0.00	101.43
6,305.0	0.40	40.60	6,160.7	-1,102.1	-88.1	1,105.7	0.23	0.15	35.71
6,438.0	0.70	30.80	6,293.7	-1,101.1	-87.4	1,104.6	0.24	0.23	-7.37
6,571.0	1.00	9.40	6,426.7	-1,099.3	-86.8	1,102.7	0.32	0.23	-16.09
6,704.0	1.30	358.40	6,559.6	-1,096.6	-86.6	1,100.0	0.28	0.23	-8.27
6,837.0	0.80	81.60	6,692.6	-1,095.0	-85.7	1,098.3	1.09	-0.38	62.56
6,970.0	0.90	106.00	6,825.6	-1,095.1	-83.8	1,098.3	0.28	0.08	18.35
7,103.0	0.90	106.50	6,958.6	-1,095.7	-81.8	1,098.7	0.01	0.00	0.38
7,149.3	0.62	106.07	7,004.9	-1,095.9	-81.2	1,098.8	0.60	-0.60	-0.92
TARGET CIRCLE 1420'FSL & 1220'FWL									
7,150.5	0.61	106.06	7,006.0	-1,095.9	-81.2	1,098.8	0.60	-0.60	-1.34
LEGAL BOX 800' X 800' 1322'FSL & 1323'FWL									
7,236.0	0.10	98.90	7,091.6	-1,096.0	-80.7	1,098.9	0.60	-0.60	-8.37
7,369.0	0.10	330.30	7,224.6	-1,095.9	-80.6	1,098.9	0.14	0.00	-96.69
7,502.0	0.30	278.90	7,357.6	-1,095.8	-81.0	1,098.7	0.19	0.15	-38.65
7,574.0	0.10	201.90	7,429.6	-1,095.8	-81.2	1,098.8	0.41	-0.28	-106.94
7,620.0	0.10	201.90	7,475.6	-1,095.9	-81.3	1,098.9	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____