

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

2N-65W-16 Cook #1 Pad

COOK 2G-16HZ

Plan A

Plan: Permit Rev-2

Standard Planning Report

27 July, 2015

Design: Permit Rev-2

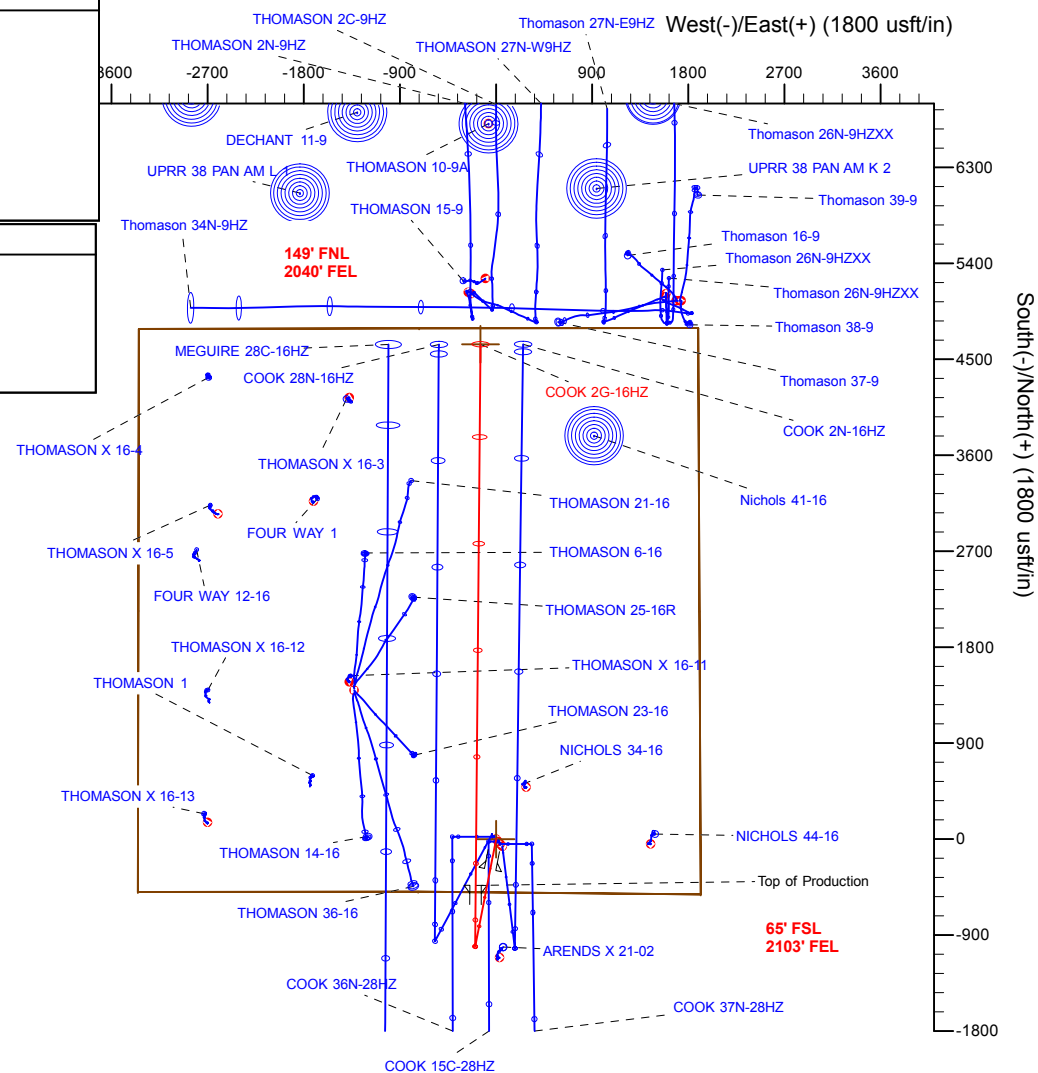
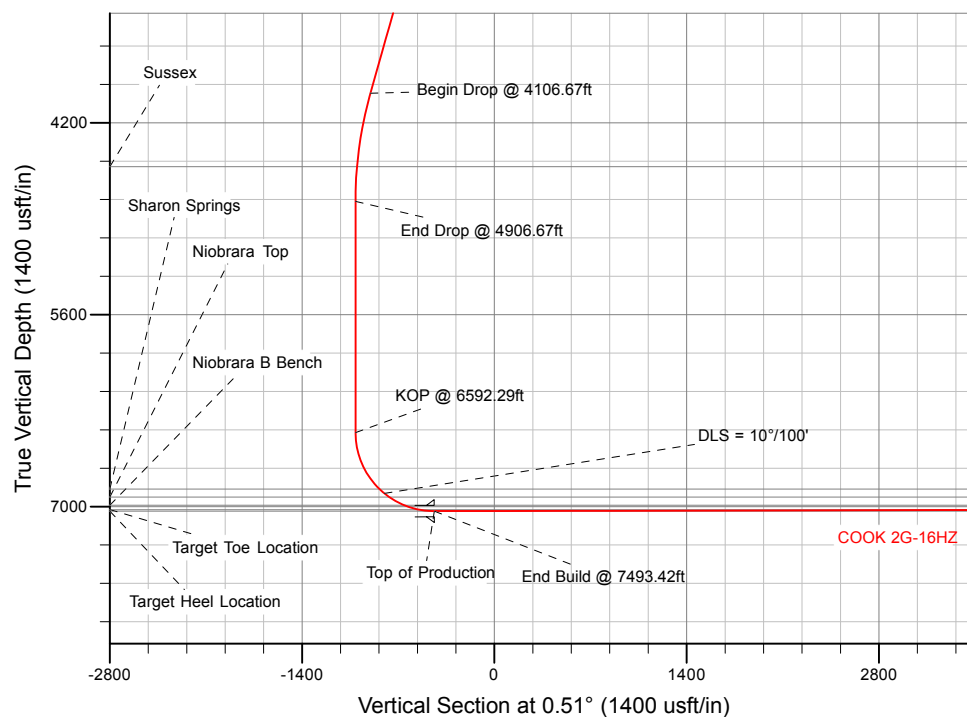
US ROCKIES WATTENBERG PLANNING

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	1316.67	16.00	191.00	1302.86	-145.25	-28.23	1.50	191.00	-145.50	
4	4106.67	16.00	191.00	3984.78	-900.15	-174.97	0.00	0.00	-901.67	
5	4906.67	0.00	0.00	4774.42	-1009.09	-196.15	2.00	180.00	-1010.79	
6	6592.29	0.00	0.00	6460.04	-1009.09	-196.15	0.00	0.00	-1010.79	
7	7493.42	90.11	0.51	7033.00	-435.02	-191.05	10.00	0.51	-436.71	
8	12570.12	90.11	0.51	7023.00	4641.47	-145.98	0.00	0.00	4639.99	COOK 2G-16HZ_BH

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
COOK 2G-16HZ_SHL	0.00	0.00	0.00	40.132820	-104.666426	Point
COOK 2G-16HZ_BHL	7023.00	4641.47	-145.98	40.145566	-104.666948	Point



WELL DETAILS: COOK 2G-16HZ	
Ground Level:	4884.00
RKB = 17' @ 4901.00usft (D Rig)	
Plan: Permit Rev-2 (COOK 2G-16HZ/Plan A)	
Created By: Clint Eshelman	Date: 7/27/2015
Reviewed: _____	Date: _____

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well COOK 2G-16HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4901.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4901.00usft (D Rig)
Site:	2N-65W-16 Cook #1 Pad	North Reference:	True
Well:	COOK 2G-16HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Project	WELD-NAD83-UTMFT13N		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Zone 13N (108 W to 102 W)		

Site	2N-65W-16 Cook #1 Pad			
Site Position:		Northing:	14,575,319.30 usft	Latitude: 40.132945
From:	Lat/Long	Easting:	1,733,613.79 usft	Longitude: -104.666567
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.21 °

Well	COOK 2G-16HZ			
Well Position	+N/-S	-45.50 usft	Northing:	14,575,273.95 usft
	+E/-W	39.30 usft	Easting:	1,733,653.26 usft
Position Uncertainty	3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level: 4,884.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/23/2015	8.29	66.72	52,612

Design	Permit Rev-2			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	0.51

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,316.67	16.00	191.00	1,302.86	-145.25	-28.23	1.50	1.50	0.00	191.00	
4,106.67	16.00	191.00	3,984.78	-900.15	-174.97	0.00	0.00	0.00	0.00	
4,906.67	0.00	0.00	4,774.42	-1,009.09	-196.15	2.00	-2.00	0.00	180.00	
6,592.29	0.00	0.00	6,460.04	-1,009.09	-196.15	0.00	0.00	0.00	0.00	
7,493.42	90.11	0.51	7,033.00	-435.02	-191.05	10.00	10.00	0.06	0.51	
12,570.12	90.11	0.51	7,023.00	4,641.47	-145.98	0.00	0.00	0.00	0.00	COOK 2G-16HZ_BHL

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well COOK 2G-16HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4901.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4901.00usft (D Rig)
Site:	2N-65W-16 Cook #1 Pad	North Reference:	True
Well:	COOK 2G-16HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2N-R65W-Sec. 16_Section Lines - COOK 2G-16HZ_SHL									
100.00	0.00	0.00	100.00	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
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 250.00ft									
300.00	0.75	191.00	300.00	-0.32	-0.06	-0.32	1.50	1.50	0.00
400.00	2.25	191.00	399.96	-2.89	-0.56	-2.90	1.50	1.50	0.00
500.00	3.75	191.00	499.82	-8.03	-1.56	-8.04	1.50	1.50	0.00
600.00	5.25	191.00	599.51	-15.73	-3.06	-15.76	1.50	1.50	0.00
700.00	6.75	191.00	698.96	-25.99	-5.05	-26.03	1.50	1.50	0.00
800.00	8.25	191.00	798.10	-38.80	-7.54	-38.87	1.50	1.50	0.00
900.00	9.75	191.00	896.87	-54.16	-10.53	-54.25	1.50	1.50	0.00
1,000.00	11.25	191.00	995.19	-72.05	-14.00	-72.17	1.50	1.50	0.00
1,100.00	12.75	191.00	1,093.00	-92.45	-17.97	-92.61	1.50	1.50	0.00
1,200.00	14.25	191.00	1,190.24	-115.37	-22.43	-115.56	1.50	1.50	0.00
1,300.00	15.75	191.00	1,286.83	-140.78	-27.36	-141.01	1.50	1.50	0.00
1,316.67	16.00	191.00	1,302.86	-145.25	-28.23	-145.50	1.50	1.50	0.00
End Nudge @ 1316.67ft									
1,400.00	16.00	191.00	1,382.96	-167.80	-32.62	-168.08	0.00	0.00	0.00
1,500.00	16.00	191.00	1,479.09	-194.86	-37.88	-195.19	0.00	0.00	0.00
1,600.00	16.00	191.00	1,575.21	-221.91	-43.14	-222.29	0.00	0.00	0.00
1,700.00	16.00	191.00	1,671.34	-248.97	-48.39	-249.39	0.00	0.00	0.00
1,800.00	16.00	191.00	1,767.47	-276.03	-53.65	-276.49	0.00	0.00	0.00
1,833.84	16.00	191.00	1,800.00	-285.19	-55.43	-285.67	0.00	0.00	0.00
9 5/8"									
1,900.00	16.00	191.00	1,863.59	-303.09	-58.91	-303.60	0.00	0.00	0.00
2,000.00	16.00	191.00	1,959.72	-330.14	-64.17	-330.70	0.00	0.00	0.00
2,100.00	16.00	191.00	2,055.85	-357.20	-69.43	-357.80	0.00	0.00	0.00
2,200.00	16.00	191.00	2,151.97	-384.26	-74.69	-384.91	0.00	0.00	0.00
2,300.00	16.00	191.00	2,248.10	-411.31	-79.95	-412.01	0.00	0.00	0.00
2,400.00	16.00	191.00	2,344.22	-438.37	-85.21	-439.11	0.00	0.00	0.00
2,500.00	16.00	191.00	2,440.35	-465.43	-90.47	-466.22	0.00	0.00	0.00
2,600.00	16.00	191.00	2,536.48	-492.49	-95.73	-493.32	0.00	0.00	0.00
2,700.00	16.00	191.00	2,632.60	-519.54	-100.99	-520.42	0.00	0.00	0.00
2,800.00	16.00	191.00	2,728.73	-546.60	-106.25	-547.53	0.00	0.00	0.00
2,900.00	16.00	191.00	2,824.85	-573.66	-111.51	-574.63	0.00	0.00	0.00
3,000.00	16.00	191.00	2,920.98	-600.72	-116.77	-601.73	0.00	0.00	0.00
3,100.00	16.00	191.00	3,017.11	-627.77	-122.03	-628.83	0.00	0.00	0.00
3,200.00	16.00	191.00	3,113.23	-654.83	-127.29	-655.94	0.00	0.00	0.00
3,300.00	16.00	191.00	3,209.36	-681.89	-132.55	-683.04	0.00	0.00	0.00
3,400.00	16.00	191.00	3,305.49	-708.94	-137.80	-710.14	0.00	0.00	0.00
3,500.00	16.00	191.00	3,401.61	-736.00	-143.06	-737.25	0.00	0.00	0.00
3,600.00	16.00	191.00	3,497.74	-763.06	-148.32	-764.35	0.00	0.00	0.00
3,700.00	16.00	191.00	3,593.86	-790.12	-153.58	-791.45	0.00	0.00	0.00
3,800.00	16.00	191.00	3,689.99	-817.17	-158.84	-818.56	0.00	0.00	0.00
3,900.00	16.00	191.00	3,786.12	-844.23	-164.10	-845.66	0.00	0.00	0.00
4,000.00	16.00	191.00	3,882.24	-871.29	-169.36	-872.76	0.00	0.00	0.00
4,100.00	16.00	191.00	3,978.37	-898.35	-174.62	-899.86	0.00	0.00	0.00
4,106.67	16.00	191.00	3,984.78	-900.15	-174.97	-901.67	0.00	0.00	0.00
Begin Drop @ 4106.67ft									
4,200.00	14.13	191.00	4,074.90	-923.96	-179.60	-925.53	2.00	-2.00	0.00
4,300.00	12.13	191.00	4,172.28	-946.27	-183.94	-947.87	2.00	-2.00	0.00
4,400.00	10.13	191.00	4,270.39	-965.22	-187.62	-966.85	2.00	-2.00	0.00

Anadarko

Planning Report

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Well:	COOK 2G-16HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,500.00	8.13	191.00	4,369.12	-980.80	-190.65	-982.46	2.00	-2.00	0.00
4,600.00	6.13	191.00	4,468.34	-992.99	-193.02	-994.67	2.00	-2.00	0.00
4,652.91	5.08	191.00	4,521.00	-998.06	-194.00	-999.75	2.00	-2.00	0.00
Sussex									
4,700.00	4.13	191.00	4,567.93	-1,001.77	-194.73	-1,003.47	2.00	-2.00	0.00
4,800.00	2.13	191.00	4,667.78	-1,007.14	-195.77	-1,008.84	2.00	-2.00	0.00
4,900.00	0.13	191.00	4,767.75	-1,009.08	-196.15	-1,010.79	2.00	-2.00	0.00
4,906.67	0.00	0.00	4,774.42	-1,009.09	-196.15	-1,010.79	2.00	-2.00	0.00
End Drop @ 4906.67ft									
5,000.00	0.00	0.00	4,867.75	-1,009.09	-196.15	-1,010.79	0.00	0.00	0.00
5,100.00	0.00	0.00	4,967.75	-1,009.09	-196.15	-1,010.79	0.00	0.00	0.00
5,200.00	0.00	0.00	5,067.75	-1,009.09	-196.15	-1,010.79	0.00	0.00	0.00
5,300.00	0.00	0.00	5,167.75	-1,009.09	-196.15	-1,010.79	0.00	0.00	0.00
5,400.00	0.00	0.00	5,267.75	-1,009.09	-196.15	-1,010.79	0.00	0.00	0.00
5,500.00	0.00	0.00	5,367.75	-1,009.09	-196.15	-1,010.79	0.00	0.00	0.00
5,600.00	0.00	0.00	5,467.75	-1,009.09	-196.15	-1,010.79	0.00	0.00	0.00
5,700.00	0.00	0.00	5,567.75	-1,009.09	-196.15	-1,010.79	0.00	0.00	0.00
5,800.00	0.00	0.00	5,667.75	-1,009.09	-196.15	-1,010.79	0.00	0.00	0.00
5,900.00	0.00	0.00	5,767.75	-1,009.09	-196.15	-1,010.79	0.00	0.00	0.00
6,000.00	0.00	0.00	5,867.75	-1,009.09	-196.15	-1,010.79	0.00	0.00	0.00
6,100.00	0.00	0.00	5,967.75	-1,009.09	-196.15	-1,010.79	0.00	0.00	0.00
6,200.00	0.00	0.00	6,067.75	-1,009.09	-196.15	-1,010.79	0.00	0.00	0.00
6,300.00	0.00	0.00	6,167.75	-1,009.09	-196.15	-1,010.79	0.00	0.00	0.00
6,400.00	0.00	0.00	6,267.75	-1,009.09	-196.15	-1,010.79	0.00	0.00	0.00
6,500.00	0.00	0.00	6,367.75	-1,009.09	-196.15	-1,010.79	0.00	0.00	0.00
6,592.29	0.00	0.00	6,460.04	-1,009.09	-196.15	-1,010.79	0.00	0.00	0.00
KOP @ 6592.29ft									
6,600.00	0.77	0.51	6,467.75	-1,009.04	-196.15	-1,010.74	10.00	10.00	0.00
6,700.00	10.77	0.51	6,567.12	-998.99	-196.06	-1,000.70	10.00	10.00	0.00
6,800.00	20.77	0.51	6,663.23	-971.85	-195.82	-973.55	10.00	10.00	0.00
6,900.00	30.77	0.51	6,753.17	-928.43	-195.43	-930.13	10.00	10.00	0.00
7,000.00	40.77	0.51	6,834.21	-870.05	-194.91	-871.75	10.00	10.00	0.00
7,052.08	45.98	0.51	6,872.05	-834.30	-194.60	-836.00	10.00	10.00	0.00
Sharon Springs									
7,100.00	50.77	0.51	6,903.87	-798.49	-194.28	-800.19	10.00	10.00	0.00
DLS = 10°/100'									
7,143.45	55.12	0.51	6,930.05	-763.82	-193.97	-765.52	10.00	10.00	0.00
Niobrara Top									
7,200.00	60.77	0.51	6,960.05	-715.92	-193.54	-717.61	10.00	10.00	0.00
7,270.98	67.87	0.51	6,990.79	-651.99	-192.98	-653.68	10.00	10.00	0.00
Niobrara B Bench									
7,300.00	70.77	0.51	7,001.04	-624.85	-192.74	-626.54	10.00	10.00	0.00
7,400.00	80.77	0.51	7,025.58	-528.04	-191.88	-529.73	10.00	10.00	0.00
7,493.42	90.11	0.51	7,033.00	-435.02	-191.05	-436.71	10.00	10.00	0.00
End Build @ 7493.42ft - Target Heel Location - Top of Production									
7,500.00	90.11	0.51	7,032.99	-428.44	-190.99	-430.13	0.00	0.00	0.00
7,600.00	90.11	0.51	7,032.79	-328.45	-190.10	-330.13	0.00	0.00	0.00
7,700.00	90.11	0.51	7,032.59	-228.45	-189.22	-230.13	0.00	0.00	0.00
7,800.00	90.11	0.51	7,032.40	-128.46	-188.33	-130.13	0.00	0.00	0.00
7,900.00	90.11	0.51	7,032.20	-28.46	-187.44	-30.13	0.00	0.00	0.00
8,000.00	90.11	0.51	7,032.00	71.54	-186.55	69.87	0.00	0.00	0.00
8,100.00	90.11	0.51	7,031.81	171.53	-185.67	169.87	0.00	0.00	0.00
8,200.00	90.11	0.51	7,031.61	271.53	-184.78	269.87	0.00	0.00	0.00

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well COOK 2G-16HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4901.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4901.00usft (D Rig)
Site:	2N-65W-16 Cook #1 Pad	North Reference:	True
Well:	COOK 2G-16HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,300.00	90.11	0.51	7,031.41	371.52	-183.89	369.87	0.00	0.00	0.00
8,400.00	90.11	0.51	7,031.21	471.52	-183.00	469.87	0.00	0.00	0.00
8,500.00	90.11	0.51	7,031.02	571.52	-182.11	569.87	0.00	0.00	0.00
8,600.00	90.11	0.51	7,030.82	671.51	-181.23	669.87	0.00	0.00	0.00
8,700.00	90.11	0.51	7,030.62	771.51	-180.34	769.87	0.00	0.00	0.00
8,800.00	90.11	0.51	7,030.43	871.50	-179.45	869.87	0.00	0.00	0.00
8,900.00	90.11	0.51	7,030.23	971.50	-178.56	969.87	0.00	0.00	0.00
9,000.00	90.11	0.51	7,030.03	1,071.49	-177.67	1,069.87	0.00	0.00	0.00
9,100.00	90.11	0.51	7,029.84	1,171.49	-176.79	1,169.87	0.00	0.00	0.00
9,200.00	90.11	0.51	7,029.64	1,271.49	-175.90	1,269.87	0.00	0.00	0.00
9,300.00	90.11	0.51	7,029.44	1,371.48	-175.01	1,369.87	0.00	0.00	0.00
9,400.00	90.11	0.51	7,029.24	1,471.48	-174.12	1,469.87	0.00	0.00	0.00
9,500.00	90.11	0.51	7,029.05	1,571.47	-173.24	1,569.87	0.00	0.00	0.00
9,600.00	90.11	0.51	7,028.85	1,671.47	-172.35	1,669.87	0.00	0.00	0.00
9,700.00	90.11	0.51	7,028.65	1,771.47	-171.46	1,769.87	0.00	0.00	0.00
9,800.00	90.11	0.51	7,028.46	1,871.46	-170.57	1,869.87	0.00	0.00	0.00
9,900.00	90.11	0.51	7,028.26	1,971.46	-169.68	1,969.87	0.00	0.00	0.00
10,000.00	90.11	0.51	7,028.06	2,071.45	-168.80	2,069.87	0.00	0.00	0.00
10,100.00	90.11	0.51	7,027.87	2,171.45	-167.91	2,169.87	0.00	0.00	0.00
10,200.00	90.11	0.51	7,027.67	2,271.45	-167.02	2,269.87	0.00	0.00	0.00
10,300.00	90.11	0.51	7,027.47	2,371.44	-166.13	2,369.87	0.00	0.00	0.00
10,400.00	90.11	0.51	7,027.27	2,471.44	-165.25	2,469.87	0.00	0.00	0.00
10,500.00	90.11	0.51	7,027.08	2,571.43	-164.36	2,569.87	0.00	0.00	0.00
10,600.00	90.11	0.51	7,026.88	2,671.43	-163.47	2,669.87	0.00	0.00	0.00
10,700.00	90.11	0.51	7,026.68	2,771.42	-162.58	2,769.87	0.00	0.00	0.00
10,800.00	90.11	0.51	7,026.49	2,871.42	-161.69	2,869.87	0.00	0.00	0.00
10,900.00	90.11	0.51	7,026.29	2,971.42	-160.81	2,969.87	0.00	0.00	0.00
11,000.00	90.11	0.51	7,026.09	3,071.41	-159.92	3,069.87	0.00	0.00	0.00
11,100.00	90.11	0.51	7,025.90	3,171.41	-159.03	3,169.87	0.00	0.00	0.00
11,200.00	90.11	0.51	7,025.70	3,271.40	-158.14	3,269.87	0.00	0.00	0.00
11,300.00	90.11	0.51	7,025.50	3,371.40	-157.26	3,369.87	0.00	0.00	0.00
11,400.00	90.11	0.51	7,025.31	3,471.40	-156.37	3,469.87	0.00	0.00	0.00
11,500.00	90.11	0.51	7,025.11	3,571.39	-155.48	3,569.87	0.00	0.00	0.00
11,600.00	90.11	0.51	7,024.91	3,671.39	-154.59	3,669.87	0.00	0.00	0.00
11,700.00	90.11	0.51	7,024.71	3,771.38	-153.70	3,769.87	0.00	0.00	0.00
11,800.00	90.11	0.51	7,024.52	3,871.38	-152.82	3,869.87	0.00	0.00	0.00
11,900.00	90.11	0.51	7,024.32	3,971.38	-151.93	3,969.87	0.00	0.00	0.00
12,000.00	90.11	0.51	7,024.12	4,071.37	-151.04	4,069.87	0.00	0.00	0.00
12,100.00	90.11	0.51	7,023.93	4,171.37	-150.15	4,169.87	0.00	0.00	0.00
12,200.00	90.11	0.51	7,023.73	4,271.36	-149.27	4,269.86	0.00	0.00	0.00
12,300.00	90.11	0.51	7,023.53	4,371.36	-148.38	4,369.86	0.00	0.00	0.00
12,400.00	90.11	0.51	7,023.34	4,471.35	-147.49	4,469.86	0.00	0.00	0.00
12,500.00	90.11	0.51	7,023.14	4,571.35	-146.60	4,569.86	0.00	0.00	0.00
12,570.12	90.11	0.51	7,023.00	4,641.47	-145.98	4,639.98	0.00	0.00	0.00
TD Well @ 12570.12ft - Target Toe Location - COOK 2G-16HZ_BHL									

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well COOK 2G-16HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4901.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4901.00usft (D Rig)
Site:	2N-65W-16 Cook #1 Pad	North Reference:	True
Well:	COOK 2G-16HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
COOK 2G-16HZ_SHL - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	14,575,273.95	1,733,653.26	40.132820	-104.666426
2N-R65W-Sec. 16_Secti - plan misses target center by 4182.37usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Polygon	0.00	0.00	-12.00	-2,894.31	-3,019.10	14,572,368.33	1,730,645.04	40.124871	-104.677226
Point 1			-12.00	7,679.47	-326.15	14,580,046.52	1,730,290.07		
Point 2			-12.00	7,684.19	2,298.77	14,580,061.09	1,732,914.96		
Point 3			-12.00	7,689.09	4,910.91	14,580,075.79	1,735,527.06		
Point 4			-12.00	5,033.20	4,922.73	14,577,419.97	1,735,548.85		
Point 5			-12.00	2,377.41	4,934.80	14,574,764.24	1,735,570.88		
Point 6			-12.00	2,401.95	2,289.76	14,574,778.85	1,732,925.77		
Point 7			-12.00	2,399.04	-334.56	14,574,766.10	1,730,301.48		
Point 8			-12.00	5,038.23	-329.93	14,577,405.28	1,730,296.21		
COOK 2G-16HZ_BHL - plan hits target center - Point	0.00	0.00	7,023.00	4,641.47	-145.98	14,579,914.84	1,733,489.86	40.145566	-104.666948

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,833.84	1,800.00	9 5/8"	9-5/8	13-1/2	
7,493.42	7,033.00	Top of Production	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,652.91	4,521.00	Sussex		0.00		
7,052.08	6,872.05	Sharon Springs		0.00		
7,143.45	6,930.05	Niobrara Top		0.00		
7,270.98	6,990.79	Niobrara B Bench		0.00		
12,570.12	7,023.00	Target Toe Location		0.00		
7,493.42	7,033.00	Target Heel Location		0.00		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
250.00	250.00	0.00	0.00	Begin Nudge @ 250.00ft	
1,316.67	1,302.86	-145.25	-28.23	End Nudge @ 1316.67ft	
4,106.67	3,984.78	-900.15	-174.97	Begin Drop @ 4106.67ft	
4,906.67	4,774.42	-1,009.09	-196.15	End Drop @ 4906.67ft	
6,592.29	6,460.04	-1,009.09	-196.15	KOP @ 6592.29ft	
7,100.00	6,903.87	-798.49	-194.28	DLS = 10°/100'	
7,493.42	7,033.00	-435.02	-191.05	End Build @ 7493.42ft	
12,570.12	7,023.00	4,641.47	-145.98	TD Well @ 12570.12ft	