

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

2N-65W-16 Cook 16-16HZ Pad

COOK 26G-16HZ

Plan A

Plan: Permit Rev-2

Standard Planning Report

10 September, 2015

Project: WELD-NAD83-UTMFT13N

Site: 2N-65W-16 Cook 16-16HZ Pad

Well: COOK 26G-16HZ

Wellbore: Plan A

Design: Permit Rev-2

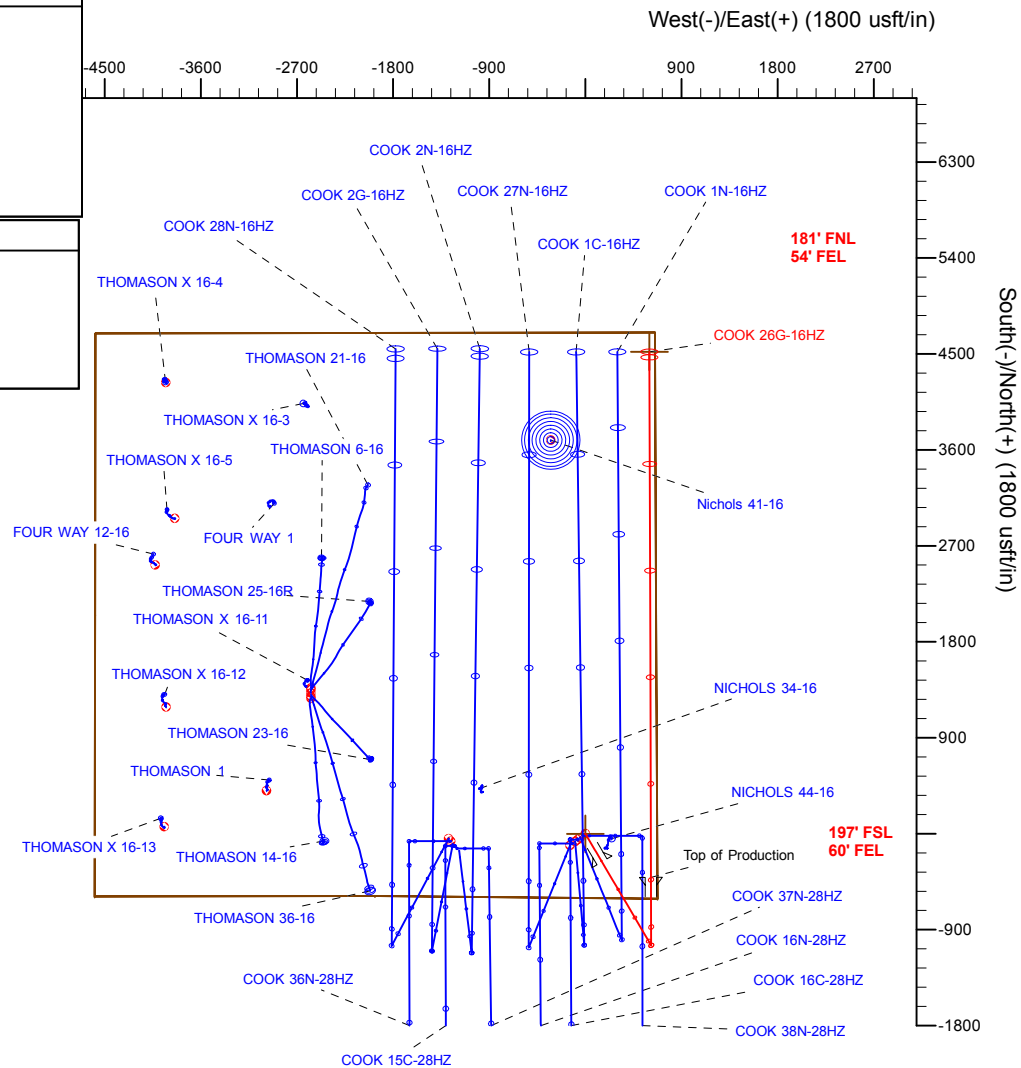
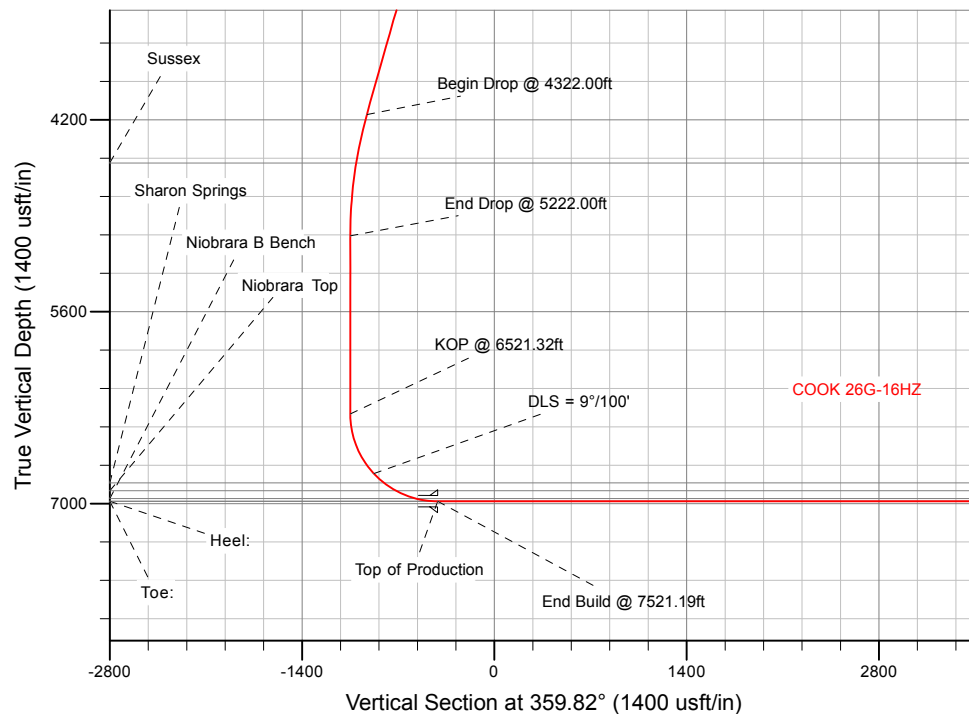
US ROCKIES WATTENBERG PLANNING

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	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	1450.00	18.00	149.50	1430.36	-161.08	94.88	1.50	149.50	-161.38	
4	4322.00	18.00	149.50	4161.79	-925.77	545.32	0.00	0.00	-927.48	
5	5222.00	0.00	0.00	5047.06	-1046.59	616.49	2.00	-180.00	-1048.52	
6	6521.32	0.00	0.00	6346.38	-1046.59	616.49	0.00	0.00	-1048.52	
7	7521.19	89.99	359.82	6983.00	-410.10	614.53	9.00	359.82	-412.03	
8	12452.19	89.99	359.82	6984.00	4520.88	599.34	0.00	0.00	4518.97	COOK 26G-16HZ_Toe

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
COOK 26G-16HZ_SHL	0.00	0.00	0.00	40.133072	-104.661988	Point
COOK 26G-16HZ_Toe	6984.00	4520.88	599.34	40.145487	-104.659844	Point



WELL DETAILS: COOK 26G-16HZ

Ground Level: 4878.00

RKB = 17' @ 4895.00usft (D Rig)

Plan: Permit Rev-2 (COOK 26G-16HZ/Plan A)

Created By: Clint Eshelman

Date: 9/10/2015

Reviewed: _____

Date: _____

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well COOK 26G-16HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4895.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4895.00usft (D Rig)
Site:	2N-65W-16 Cook 16-16HZ Pad	North Reference:	True
Well:	COOK 26G-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 16-16HZ Pad			
Site Position:		Northing:	14,575,370.71 usft	Latitude:	40.133073
From:	Lat/Long	Easting:	1,734,893.26 usft	Longitude:	-104.661989
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.22 °

Well	COOK 26G-16HZ					
Well Position	+N/-S	0.00 usft	Northing:	14,575,370.71 usft	Latitude:	40.133073
	+E/-W	0.00 usft	Easting:	1,734,893.26 usft	Longitude:	-104.661989
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,878.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/6/2015	8.29	66.72	52,609

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	359.82

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	
1,450.00	18.00	149.50	1,430.36	-161.08	94.88	1.50	1.50	0.00	149.50	
4,322.00	18.00	149.50	4,161.79	-925.78	545.32	0.00	0.00	0.00	0.00	
5,222.00	0.00	0.00	5,047.06	-1,046.59	616.49	2.00	-2.00	-16.61	-180.00	
6,521.32	0.00	0.00	6,346.38	-1,046.59	616.49	0.00	0.00	0.00	0.00	
7,521.19	89.99	359.82	6,983.00	-410.10	614.53	9.00	9.00	-0.02	359.82	
12,452.19	89.99	359.82	6,984.00	4,520.88	599.34	0.00	0.00	0.00	0.00	COOK 26G-16HZ_To

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well COOK 26G-16HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4895.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4895.00usft (D Rig)
Site:	2N-65W-16 Cook 16-16HZ Pad	North Reference:	True
Well:	COOK 26G-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
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	149.50	300.00	-0.28	0.17	-0.28	1.50	1.50	0.00
400.00	2.25	149.50	399.96	-2.54	1.49	-2.54	1.50	1.50	0.00
500.00	3.75	149.50	499.82	-7.05	4.15	-7.06	1.50	1.50	0.00
600.00	5.25	149.50	599.51	-13.81	8.13	-13.83	1.50	1.50	0.00
700.00	6.75	149.50	698.96	-22.81	13.44	-22.86	1.50	1.50	0.00
800.00	8.25	149.50	798.10	-34.06	20.06	-34.12	1.50	1.50	0.00
900.00	9.75	149.50	896.87	-47.54	28.00	-47.63	1.50	1.50	0.00
1,000.00	11.25	149.50	995.19	-63.24	37.25	-63.36	1.50	1.50	0.00
1,100.00	12.75	149.50	1,093.00	-81.15	47.80	-81.30	1.50	1.50	0.00
1,200.00	14.25	149.50	1,190.24	-101.27	59.65	-101.45	1.50	1.50	0.00
1,300.00	15.75	149.50	1,286.83	-123.57	72.79	-123.79	1.50	1.50	0.00
1,400.00	17.25	149.50	1,382.71	-148.04	87.20	-148.31	1.50	1.50	0.00
1,450.00	18.00	149.50	1,430.36	-161.08	94.88	-161.38	1.50	1.50	0.00
End Nudge @ 1450.00ft									
1,500.00	18.00	149.50	1,477.91	-174.39	102.73	-174.72	0.00	0.00	0.00
1,600.00	18.00	149.50	1,573.02	-201.02	118.41	-201.39	0.00	0.00	0.00
1,700.00	18.00	149.50	1,668.12	-227.65	134.09	-228.07	0.00	0.00	0.00
1,800.00	18.00	149.50	1,763.23	-254.27	149.78	-254.74	0.00	0.00	0.00
1,838.66	18.00	149.50	1,800.00	-264.57	155.84	-265.06	0.00	0.00	0.00
9 5/8"									
1,900.00	18.00	149.50	1,858.33	-280.90	165.46	-281.42	0.00	0.00	0.00
2,000.00	18.00	149.50	1,953.44	-307.52	181.15	-308.09	0.00	0.00	0.00
2,100.00	18.00	149.50	2,048.54	-334.15	196.83	-334.77	0.00	0.00	0.00
2,200.00	18.00	149.50	2,143.65	-360.78	212.51	-361.44	0.00	0.00	0.00
2,300.00	18.00	149.50	2,238.76	-387.40	228.20	-388.12	0.00	0.00	0.00
2,400.00	18.00	149.50	2,333.86	-414.03	243.88	-414.79	0.00	0.00	0.00
2,500.00	18.00	149.50	2,428.97	-440.65	259.56	-441.47	0.00	0.00	0.00
2,600.00	18.00	149.50	2,524.07	-467.28	275.25	-468.14	0.00	0.00	0.00
2,700.00	18.00	149.50	2,619.18	-493.90	290.93	-494.82	0.00	0.00	0.00
2,800.00	18.00	149.50	2,714.28	-520.53	306.62	-521.49	0.00	0.00	0.00
2,900.00	18.00	149.50	2,809.39	-547.16	322.30	-548.17	0.00	0.00	0.00
3,000.00	18.00	149.50	2,904.50	-573.78	337.98	-574.84	0.00	0.00	0.00
3,100.00	18.00	149.50	2,999.60	-600.41	353.67	-601.52	0.00	0.00	0.00
3,200.00	18.00	149.50	3,094.71	-627.03	369.35	-628.19	0.00	0.00	0.00
3,300.00	18.00	149.50	3,189.81	-653.66	385.03	-654.87	0.00	0.00	0.00
3,400.00	18.00	149.50	3,284.92	-680.29	400.72	-681.54	0.00	0.00	0.00
3,500.00	18.00	149.50	3,380.02	-706.91	416.40	-708.22	0.00	0.00	0.00
3,600.00	18.00	149.50	3,475.13	-733.54	432.09	-734.89	0.00	0.00	0.00
3,700.00	18.00	149.50	3,570.24	-760.16	447.77	-761.57	0.00	0.00	0.00
3,800.00	18.00	149.50	3,665.34	-786.79	463.45	-788.24	0.00	0.00	0.00
3,900.00	18.00	149.50	3,760.45	-813.41	479.14	-814.92	0.00	0.00	0.00
4,000.00	18.00	149.50	3,855.55	-840.04	494.82	-841.59	0.00	0.00	0.00
4,100.00	18.00	149.50	3,950.66	-866.67	510.51	-868.27	0.00	0.00	0.00
4,200.00	18.00	149.50	4,045.76	-893.29	526.19	-894.94	0.00	0.00	0.00
4,300.00	18.00	149.50	4,140.87	-919.92	541.87	-921.62	0.00	0.00	0.00
4,322.00	18.00	149.50	4,161.79	-925.78	545.32	-927.48	0.00	0.00	0.00
Begin Drop @ 4322.00ft									
4,400.00	16.44	149.50	4,236.29	-945.67	557.04	-947.42	2.00	-2.00	0.00
4,500.00	14.44	149.50	4,332.68	-968.61	570.55	-970.40	2.00	-2.00	0.00

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well COOK 26G-16HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4895.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4895.00usft (D Rig)
Site:	2N-65W-16 Cook 16-16HZ Pad	North Reference:	True
Well:	COOK 26G-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)
4,600.00	12.44	149.50	4,429.94	-988.63	582.35	-990.46	2.00	-2.00	0.00
4,686.83	10.70	149.50	4,515.00	-1,003.64	591.19	-1,005.49	2.00	-2.00	0.00
Sussex									
4,700.00	10.44	149.50	4,527.94	-1,005.72	592.42	-1,007.58	2.00	-2.00	0.00
4,800.00	8.44	149.50	4,626.59	-1,019.85	600.74	-1,021.74	2.00	-2.00	0.00
4,900.00	6.44	149.50	4,725.74	-1,031.01	607.31	-1,032.91	2.00	-2.00	0.00
5,000.00	4.44	149.50	4,825.28	-1,039.18	612.12	-1,041.10	2.00	-2.00	0.00
5,100.00	2.44	149.50	4,925.10	-1,044.35	615.17	-1,046.28	2.00	-2.00	0.00
5,200.00	0.44	149.50	5,025.06	-1,046.51	616.44	-1,048.45	2.00	-2.00	0.00
5,222.00	0.00	0.00	5,047.06	-1,046.59	616.49	-1,048.52	2.00	-2.00	-679.55
End Drop @ 5222.00ft									
5,300.00	0.00	0.00	5,125.06	-1,046.59	616.49	-1,048.52	0.00	0.00	0.00
5,400.00	0.00	0.00	5,225.06	-1,046.59	616.49	-1,048.52	0.00	0.00	0.00
5,500.00	0.00	0.00	5,325.06	-1,046.59	616.49	-1,048.52	0.00	0.00	0.00
5,600.00	0.00	0.00	5,425.06	-1,046.59	616.49	-1,048.52	0.00	0.00	0.00
5,700.00	0.00	0.00	5,525.06	-1,046.59	616.49	-1,048.52	0.00	0.00	0.00
5,800.00	0.00	0.00	5,625.06	-1,046.59	616.49	-1,048.52	0.00	0.00	0.00
5,900.00	0.00	0.00	5,725.06	-1,046.59	616.49	-1,048.52	0.00	0.00	0.00
6,000.00	0.00	0.00	5,825.06	-1,046.59	616.49	-1,048.52	0.00	0.00	0.00
6,100.00	0.00	0.00	5,925.06	-1,046.59	616.49	-1,048.52	0.00	0.00	0.00
6,200.00	0.00	0.00	6,025.06	-1,046.59	616.49	-1,048.52	0.00	0.00	0.00
6,300.00	0.00	0.00	6,125.06	-1,046.59	616.49	-1,048.52	0.00	0.00	0.00
6,400.00	0.00	0.00	6,225.06	-1,046.59	616.49	-1,048.52	0.00	0.00	0.00
6,500.00	0.00	0.00	6,325.06	-1,046.59	616.49	-1,048.52	0.00	0.00	0.00
6,521.32	0.00	0.00	6,346.38	-1,046.59	616.49	-1,048.52	0.00	0.00	0.00
KOP @ 6521.32ft									
6,600.00	7.08	359.82	6,424.86	-1,041.73	616.47	-1,043.66	9.00	9.00	-0.22
6,700.00	16.08	359.82	6,522.72	-1,021.68	616.41	-1,023.61	9.00	9.00	0.00
6,800.00	25.08	359.82	6,616.25	-986.56	616.30	-988.49	9.00	9.00	0.00
6,900.00	34.08	359.82	6,703.12	-937.24	616.15	-939.17	9.00	9.00	0.00
7,000.00	43.08	359.82	6,781.21	-874.95	615.96	-876.88	9.00	9.00	0.00
DLS = 9°/100'									
7,100.00	52.08	359.82	6,848.60	-801.20	615.73	-803.13	9.00	9.00	0.00
7,100.03	52.08	359.82	6,848.62	-801.17	615.73	-803.10	0.00	0.00	0.00
Sharon Springs									
7,200.00	61.08	359.82	6,903.62	-717.82	615.47	-719.75	9.00	9.00	0.00
7,206.26	61.64	359.82	6,906.62	-712.32	615.46	-714.25	9.00	9.00	0.00
Niobrara Top									
7,300.00	70.08	359.82	6,944.92	-626.86	615.19	-628.79	9.00	9.00	0.00
7,363.96	75.84	359.82	6,963.65	-565.73	615.01	-567.66	9.00	9.00	0.00
Niobrara B Bench									
7,400.00	79.08	359.82	6,971.48	-530.56	614.90	-532.49	9.00	9.00	0.00
7,500.00	88.08	359.82	6,982.64	-431.29	614.59	-433.21	9.00	9.00	0.00
7,521.19	89.99	359.82	6,983.00	-410.10	614.53	-412.03	9.00	9.00	0.00
End Build @ 7521.19ft - Heel: - Top of Production									
7,600.00	89.99	359.82	6,983.02	-331.29	614.28	-333.22	0.00	0.00	0.00
7,700.00	89.99	359.82	6,983.04	-231.29	613.98	-233.22	0.00	0.00	0.00
7,800.00	89.99	359.82	6,983.06	-131.29	613.67	-133.22	0.00	0.00	0.00
7,900.00	89.99	359.82	6,983.08	-31.29	613.36	-33.22	0.00	0.00	0.00
8,000.00	89.99	359.82	6,983.10	68.71	613.05	66.78	0.00	0.00	0.00
8,100.00	89.99	359.82	6,983.12	168.71	612.74	166.78	0.00	0.00	0.00
8,200.00	89.99	359.82	6,983.14	268.71	612.44	266.78	0.00	0.00	0.00
8,300.00	89.99	359.82	6,983.16	368.71	612.13	366.78	0.00	0.00	0.00

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well COOK 26G-16HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4895.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4895.00usft (D Rig)
Site:	2N-65W-16 Cook 16-16HZ Pad	North Reference:	True
Well:	COOK 26G-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)
8,400.00	89.99	359.82	6,983.18	468.71	611.82	466.78	0.00	0.00	0.00
8,500.00	89.99	359.82	6,983.20	568.71	611.51	566.78	0.00	0.00	0.00
8,600.00	89.99	359.82	6,983.22	668.71	611.20	666.78	0.00	0.00	0.00
8,700.00	89.99	359.82	6,983.24	768.70	610.90	766.78	0.00	0.00	0.00
8,800.00	89.99	359.82	6,983.26	868.70	610.59	866.78	0.00	0.00	0.00
8,900.00	89.99	359.82	6,983.28	968.70	610.28	966.78	0.00	0.00	0.00
9,000.00	89.99	359.82	6,983.30	1,068.70	609.97	1,066.78	0.00	0.00	0.00
9,100.00	89.99	359.82	6,983.32	1,168.70	609.66	1,166.78	0.00	0.00	0.00
9,200.00	89.99	359.82	6,983.34	1,268.70	609.36	1,266.78	0.00	0.00	0.00
9,300.00	89.99	359.82	6,983.36	1,368.70	609.05	1,366.78	0.00	0.00	0.00
9,400.00	89.99	359.82	6,983.38	1,468.70	608.74	1,466.78	0.00	0.00	0.00
9,500.00	89.99	359.82	6,983.40	1,568.70	608.43	1,566.78	0.00	0.00	0.00
9,600.00	89.99	359.82	6,983.42	1,668.70	608.12	1,666.78	0.00	0.00	0.00
9,700.00	89.99	359.82	6,983.44	1,768.70	607.82	1,766.78	0.00	0.00	0.00
9,800.00	89.99	359.82	6,983.46	1,868.70	607.51	1,866.78	0.00	0.00	0.00
9,900.00	89.99	359.82	6,983.48	1,968.70	607.20	1,966.78	0.00	0.00	0.00
10,000.00	89.99	359.82	6,983.50	2,068.70	606.89	2,066.78	0.00	0.00	0.00
10,100.00	89.99	359.82	6,983.52	2,168.70	606.58	2,166.78	0.00	0.00	0.00
10,200.00	89.99	359.82	6,983.54	2,268.70	606.28	2,266.78	0.00	0.00	0.00
10,300.00	89.99	359.82	6,983.56	2,368.70	605.97	2,366.78	0.00	0.00	0.00
10,400.00	89.99	359.82	6,983.58	2,468.70	605.66	2,466.78	0.00	0.00	0.00
10,500.00	89.99	359.82	6,983.60	2,568.70	605.35	2,566.78	0.00	0.00	0.00
10,600.00	89.99	359.82	6,983.62	2,668.70	605.04	2,666.78	0.00	0.00	0.00
10,700.00	89.99	359.82	6,983.65	2,768.70	604.74	2,766.78	0.00	0.00	0.00
10,800.00	89.99	359.82	6,983.67	2,868.69	604.43	2,866.78	0.00	0.00	0.00
10,900.00	89.99	359.82	6,983.69	2,968.69	604.12	2,966.78	0.00	0.00	0.00
11,000.00	89.99	359.82	6,983.71	3,068.69	603.81	3,066.78	0.00	0.00	0.00
11,100.00	89.99	359.82	6,983.73	3,168.69	603.50	3,166.78	0.00	0.00	0.00
11,200.00	89.99	359.82	6,983.75	3,268.69	603.20	3,266.78	0.00	0.00	0.00
11,300.00	89.99	359.82	6,983.77	3,368.69	602.89	3,366.78	0.00	0.00	0.00
11,400.00	89.99	359.82	6,983.79	3,468.69	602.58	3,466.78	0.00	0.00	0.00
11,500.00	89.99	359.82	6,983.81	3,568.69	602.27	3,566.78	0.00	0.00	0.00
11,600.00	89.99	359.82	6,983.83	3,668.69	601.96	3,666.78	0.00	0.00	0.00
11,700.00	89.99	359.82	6,983.85	3,768.69	601.66	3,766.78	0.00	0.00	0.00
11,800.00	89.99	359.82	6,983.87	3,868.69	601.35	3,866.78	0.00	0.00	0.00
11,900.00	89.99	359.82	6,983.89	3,968.69	601.04	3,966.78	0.00	0.00	0.00
12,000.00	89.99	359.82	6,983.91	4,068.69	600.73	4,066.78	0.00	0.00	0.00
12,100.00	89.99	359.82	6,983.93	4,168.69	600.42	4,166.78	0.00	0.00	0.00
12,200.00	89.99	359.82	6,983.95	4,268.69	600.12	4,266.78	0.00	0.00	0.00
12,300.00	89.99	359.82	6,983.97	4,368.69	599.81	4,366.78	0.00	0.00	0.00
12,400.00	89.99	359.82	6,983.99	4,468.69	599.50	4,466.78	0.00	0.00	0.00
12,452.19	89.99	359.82	6,984.00	4,520.88	599.34	4,518.97	0.00	0.00	0.00
TD Well @ 12452.19ft - Toe:									

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well COOK 26G-16HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4895.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4895.00usft (D Rig)
Site:	2N-65W-16 Cook 16-16HZ Pad	North Reference:	True
Well:	COOK 26G-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 26G-16HZ_SHL	0.00	0.00	0.00	0.00	0.00	14,575,370.71	1,734,893.26	40.133073	-104.661989
- plan hits target center									
- Point									
2N-R65W-Sec. 16_Secti	0.00	0.00	-18.00	-2,986.20	-4,259.61	14,572,368.33	1,730,645.04	40.124871	-104.677226
- plan misses target center by 5202.12usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			-18.00	7,679.47	-326.15	14,580,046.50	1,730,289.69		
Point 2			-18.00	7,684.19	2,298.77	14,580,061.20	1,732,914.57		
Point 3			-18.00	7,689.09	4,910.91	14,580,076.04	1,735,526.68		
Point 4			-18.00	5,033.20	4,922.73	14,577,420.21	1,735,548.60		
Point 5			-18.00	2,377.41	4,934.80	14,574,764.49	1,735,570.77		
Point 6			-18.00	2,401.95	2,289.76	14,574,778.97	1,732,925.65		
Point 7			-18.00	2,399.04	-334.56	14,574,766.08	1,730,301.36		
Point 8			-18.00	5,038.23	-329.93	14,577,405.27	1,730,295.95		
COOK 26G-16HZ_Toe	0.00	0.00	6,984.00	4,520.88	599.34	14,579,893.84	1,735,475.41	40.145487	-104.659844
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,838.66	1,800.00	9 5/8"	9-5/8	13-1/2	
7,521.19	6,983.00	Top of Production	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,686.83	4,515.00	Sussex		0.00		
7,100.03	6,848.62	Sharon Springs		0.00		
7,206.26	6,906.62	Niobrara Top		0.00		
7,363.96	6,963.65	Niobrara B Bench		0.00		
7,521.19	6,983.00	Heel:		0.00		
12,452.19	6,984.00	Toe:		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	
1,450.00	1,430.36	-161.08	94.88	End Nudge @ 1450.00ft	
4,322.00	4,161.79	-925.78	545.32	Begin Drop @ 4322.00ft	
5,222.00	5,047.06	-1,046.59	616.49	End Drop @ 5222.00ft	
6,521.32	6,346.38	-1,046.59	616.49	KOP @ 6521.32ft	
7,000.00	6,781.21	-874.95	615.96	DLS = 9°/100'	
7,521.19	6,983.00	-410.10	614.53	End Build @ 7521.19ft	
12,452.19	6,984.00	4,520.88	599.34	TD Well @ 12452.19ft	