

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
3N-67W-33 BABCOCK 6-4HZ Pad
BABCOCK 14C-33HZ**

Plan A

Plan: Permit Rev-2

Standard Planning Report

15 April, 2016



Azimuths to True North
Magnetic North: 8.27°

Magnetic Field
Strength: 52490.2snT
Dip Angle: 66.68°
Date: 4/4/2016
Model: IGRF2010

SITE: 3N-67W-33 BABCOCK 6-4HZ Pad

Well: BABCOCK 14C-33HZ
Wellbore: Plan A
Design: Permit Rev-2

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
975.00	976.23	Fox Hills
4576.00	4690.46	Sussex
7075.00	7200.40	Sharon Springs
7161.00	7301.37	Niobrara
7210.00	7364.34	Nio B
7266.00	7444.01	Nio C
7395.00	7711.35	Fort Hayes
7416.00	7806.39	Codell

WELL DETAILS: BABCOCK 14C-33HZ

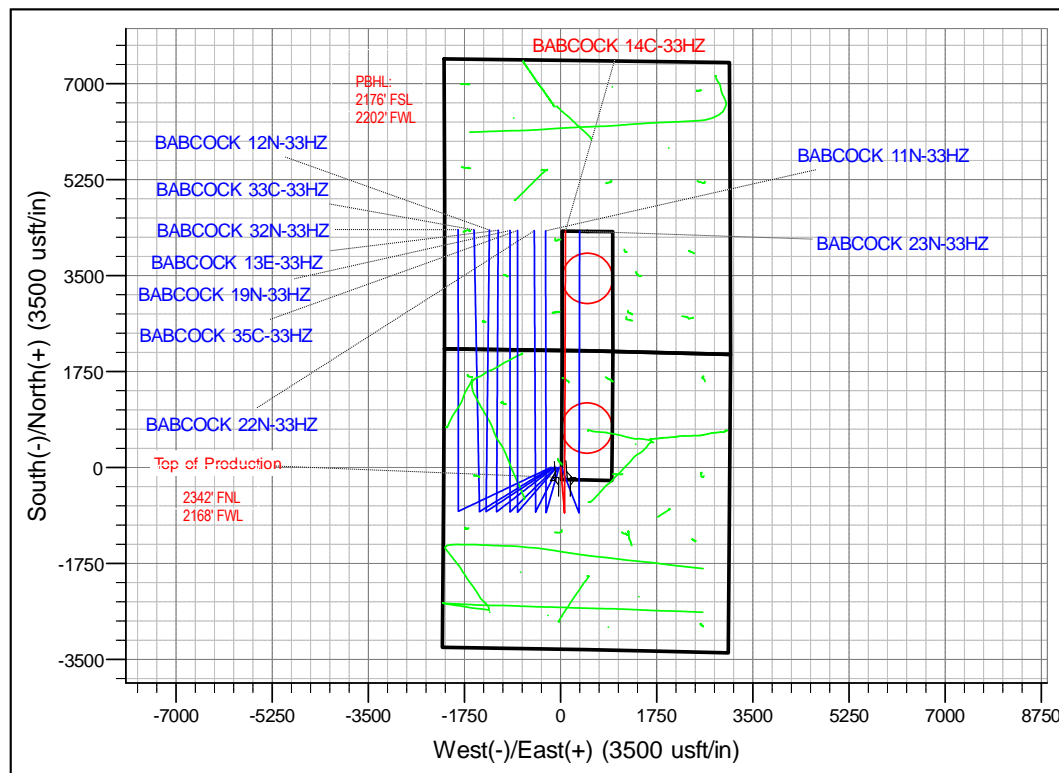
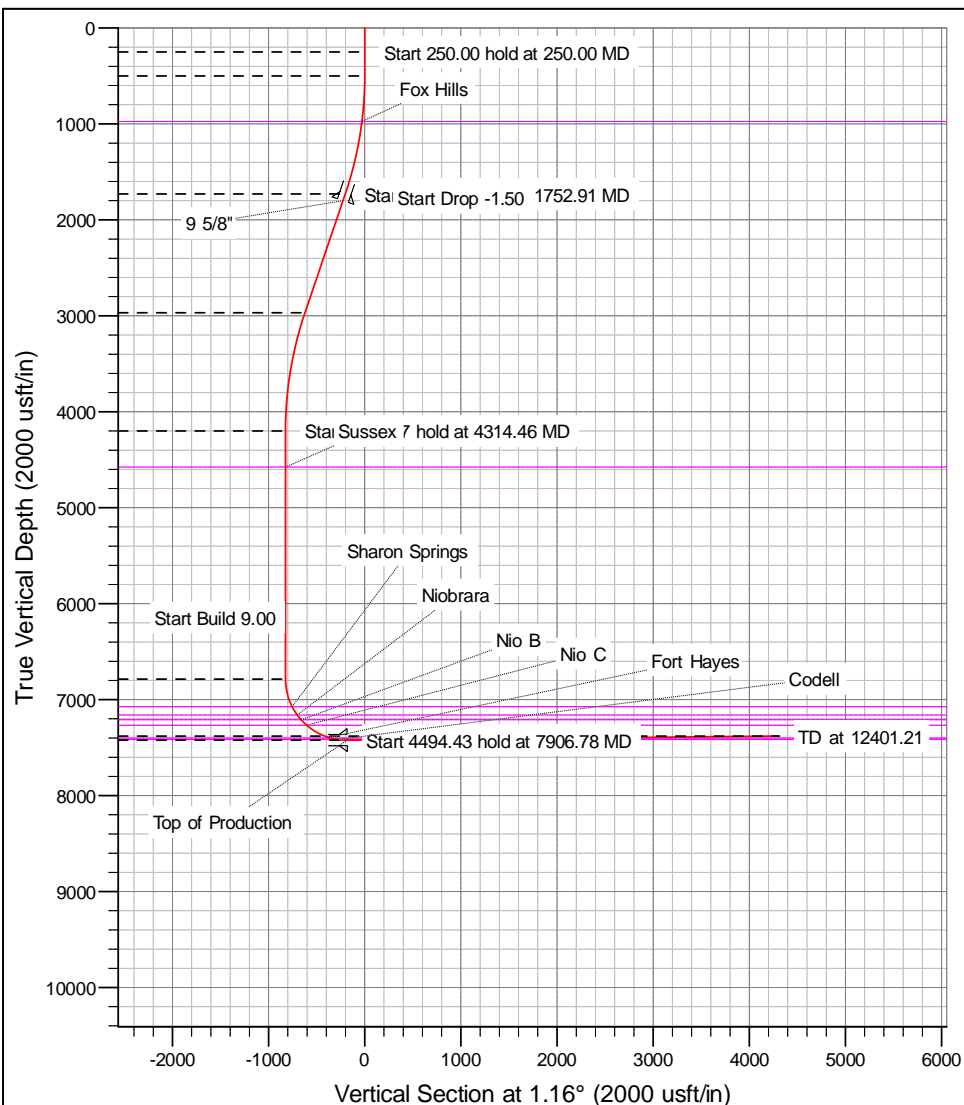
+N/-S	+E/-W	GL: 4887.00 Northing	RKB @ 4904.00usft (D Rig) Easting	Latitude 40.169181	Longitude -104.896783	Slot
0.00	0.00	14588356.77	1669251.22			

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	Vsect
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
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00
1752.91	18.79	175.16	1730.57	-202.92	17.17	1.50	-202.53
3061.55	18.79	175.16	2969.43	-623.02	52.72	0.00	-621.82
4314.46	0.00	0.00	4200.00	-825.94	69.89	1.50	-824.35
6900.84	0.00	0.00	6786.37	-825.94	69.89	0.00	-824.35
7906.78	90.53	0.20	7422.97	-183.38	72.08	9.00	-181.88
12401.21	90.53	0.20	7381.00	4310.83	87.42	0.00	4311.72

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
BABCOCK 14C-33HZ_PBHL	7381.00	4310.83	87.42	14592667.70	1669333.64	40.181019	-104.896470	Point
BABCOCK 14C-33HZ_PHL	7422.97	-183.38	72.08	14588173.47	1669323.52	40.168677	-104.896525	Point



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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well BABCOCK 14C-33HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4904.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4904.00usft (D Rig)
Site:	3N-67W-33 BABCOCK 6-4HZ Pad	North Reference:	True
Well:	BABCOCK 14C-33HZ	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						3N-67W-33 BABCOCK 6-4HZ Pad											
Site Position:						Northing:			14,588,357.65 usft			Latitude:			40.169184		
From:			Lat/Long			Easting:			1,669,071.31 usft			Longitude:			-104.897427		
Position Uncertainty:			0.00 usft			Slot Radius:			13-3/16 "			Grid Convergence:			0.07		

Well	BABCOCK 14C-33HZ					
Well Position	+N/-S	-1.09 usft	Northing:	14,588,356.77 usft	Latitude:	40.169181
	+E/-W	179.91 usft	Easting:	1,669,251.22 usft	Longitude:	-104.896783
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,887.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/4/2016	8.27	66.68	52,490

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	1.16

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	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,752.91	18.79	175.16	1,730.57	-202.92	17.17	1.50	1.50	0.00	175.16	
3,061.55	18.79	175.16	2,969.43	-623.02	52.72	0.00	0.00	0.00	0.00	
4,314.46	0.00	0.00	4,200.00	-825.94	69.89	1.50	-1.50	0.00	180.00	
6,900.84	0.00	0.00	6,786.37	-825.94	69.89	0.00	0.00	0.00	0.00	
7,906.78	90.54	0.20	7,422.97	-183.38	72.08	9.00	9.00	0.00	0.20	
12,401.21	90.54	0.20	7,381.00	4,310.83	87.42	0.00	0.00	0.00	0.00	BABCOCK 14C-33H

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well BABCOCK 14C-33HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4904.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4904.00usft (D Rig)
Site:	3N-67W-33 BABCOCK 6-4HZ Pad	North Reference:	True
Well:	BABCOCK 14C-33HZ	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
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	1.50	175.16	599.99	-1.30	0.11	-1.30	1.50	1.50	0.00
700.00	3.00	175.16	699.91	-5.22	0.44	-5.21	1.50	1.50	0.00
800.00	4.50	175.16	799.69	-11.73	0.99	-11.71	1.50	1.50	0.00
900.00	6.00	175.16	899.27	-20.85	1.76	-20.81	1.50	1.50	0.00
976.23	7.14	175.16	975.00	-29.54	2.50	-29.49	1.50	1.50	0.00
Fox Hills									
1,000.00	7.50	175.16	998.57	-32.56	2.76	-32.50	1.50	1.50	0.00
1,100.00	9.00	175.16	1,097.54	-46.86	3.97	-46.77	1.50	1.50	0.00
1,200.00	10.50	175.16	1,196.09	-63.73	5.39	-63.61	1.50	1.50	0.00
1,300.00	12.00	175.16	1,294.16	-83.17	7.04	-83.01	1.50	1.50	0.00
1,400.00	13.50	175.16	1,391.70	-105.16	8.90	-104.96	1.50	1.50	0.00
1,500.00	15.00	175.16	1,488.62	-129.69	10.97	-129.44	1.50	1.50	0.00
1,600.00	16.50	175.16	1,584.86	-156.74	13.26	-156.44	1.50	1.50	0.00
1,700.00	18.00	175.16	1,680.36	-186.28	15.76	-185.93	1.50	1.50	0.00
1,752.91	18.79	175.16	1,730.57	-202.92	17.17	-202.53	1.50	1.50	0.00
1,800.00	18.79	175.16	1,775.14	-218.04	18.45	-217.62	0.00	0.00	0.00
1,826.26	18.79	175.16	1,800.00	-226.47	19.16	-226.03	0.00	0.00	0.00
9 5/8"									
1,900.00	18.79	175.16	1,869.81	-250.14	21.17	-249.66	0.00	0.00	0.00
2,000.00	18.79	175.16	1,964.48	-282.24	23.88	-281.70	0.00	0.00	0.00
2,100.00	18.79	175.16	2,059.15	-314.34	26.60	-313.74	0.00	0.00	0.00
2,200.00	18.79	175.16	2,153.82	-346.45	29.32	-345.78	0.00	0.00	0.00
2,300.00	18.79	175.16	2,248.49	-378.55	32.03	-377.82	0.00	0.00	0.00
2,400.00	18.79	175.16	2,343.15	-410.65	34.75	-409.86	0.00	0.00	0.00
2,500.00	18.79	175.16	2,437.82	-442.75	37.46	-441.90	0.00	0.00	0.00
2,600.00	18.79	175.16	2,532.49	-474.85	40.18	-473.94	0.00	0.00	0.00
2,700.00	18.79	175.16	2,627.16	-506.95	42.90	-505.98	0.00	0.00	0.00
2,800.00	18.79	175.16	2,721.83	-539.05	45.61	-538.02	0.00	0.00	0.00
2,900.00	18.79	175.16	2,816.50	-571.16	48.33	-570.06	0.00	0.00	0.00
3,000.00	18.79	175.16	2,911.16	-603.26	51.05	-602.10	0.00	0.00	0.00
3,061.55	18.79	175.16	2,969.43	-623.02	52.72	-621.82	0.00	0.00	0.00
3,100.00	18.22	175.16	3,005.89	-635.18	53.75	-633.96	1.50	-1.50	0.00
3,200.00	16.72	175.16	3,101.28	-665.08	56.28	-663.81	1.50	-1.50	0.00
3,300.00	15.22	175.16	3,197.42	-692.49	58.60	-691.16	1.50	-1.50	0.00
3,400.00	13.72	175.16	3,294.25	-717.39	60.70	-716.01	1.50	-1.50	0.00
3,500.00	12.22	175.16	3,391.69	-739.74	62.60	-738.32	1.50	-1.50	0.00
3,600.00	10.72	175.16	3,489.70	-759.55	64.27	-758.09	1.50	-1.50	0.00
3,700.00	9.22	175.16	3,588.18	-776.80	65.73	-775.31	1.50	-1.50	0.00
3,800.00	7.72	175.16	3,687.09	-791.47	66.97	-789.95	1.50	-1.50	0.00
3,900.00	6.22	175.16	3,786.35	-803.56	68.00	-802.01	1.50	-1.50	0.00
4,000.00	4.72	175.16	3,885.89	-813.05	68.80	-811.49	1.50	-1.50	0.00
4,100.00	3.22	175.16	3,985.65	-819.94	69.38	-818.37	1.50	-1.50	0.00
4,200.00	1.72	175.16	4,085.55	-824.23	69.75	-822.65	1.50	-1.50	0.00
4,300.00	0.22	175.16	4,185.54	-825.91	69.89	-824.33	1.50	-1.50	0.00
4,314.46	0.00	0.00	4,200.00	-825.94	69.89	-824.35	1.50	-1.50	0.00
4,400.00	0.00	0.00	4,285.54	-825.94	69.89	-824.35	0.00	0.00	0.00
4,500.00	0.00	0.00	4,385.54	-825.94	69.89	-824.35	0.00	0.00	0.00

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well BABCOCK 14C-33HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4904.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4904.00usft (D Rig)
Site:	3N-67W-33 BABCOCK 6-4HZ Pad	North Reference:	True
Well:	BABCOCK 14C-33HZ	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	0.00	0.00	4,485.54	-825.94	69.89	-824.35	0.00	0.00	0.00
4,690.46	0.00	0.00	4,576.00	-825.94	69.89	-824.35	0.00	0.00	0.00
Sussex									
4,700.00	0.00	0.00	4,585.54	-825.94	69.89	-824.35	0.00	0.00	0.00
4,800.00	0.00	0.00	4,685.54	-825.94	69.89	-824.35	0.00	0.00	0.00
4,900.00	0.00	0.00	4,785.54	-825.94	69.89	-824.35	0.00	0.00	0.00
5,000.00	0.00	0.00	4,885.54	-825.94	69.89	-824.35	0.00	0.00	0.00
5,100.00	0.00	0.00	4,985.54	-825.94	69.89	-824.35	0.00	0.00	0.00
5,200.00	0.00	0.00	5,085.54	-825.94	69.89	-824.35	0.00	0.00	0.00
5,300.00	0.00	0.00	5,185.54	-825.94	69.89	-824.35	0.00	0.00	0.00
5,400.00	0.00	0.00	5,285.54	-825.94	69.89	-824.35	0.00	0.00	0.00
5,500.00	0.00	0.00	5,385.54	-825.94	69.89	-824.35	0.00	0.00	0.00
5,600.00	0.00	0.00	5,485.54	-825.94	69.89	-824.35	0.00	0.00	0.00
5,700.00	0.00	0.00	5,585.54	-825.94	69.89	-824.35	0.00	0.00	0.00
5,800.00	0.00	0.00	5,685.54	-825.94	69.89	-824.35	0.00	0.00	0.00
5,900.00	0.00	0.00	5,785.54	-825.94	69.89	-824.35	0.00	0.00	0.00
6,000.00	0.00	0.00	5,885.54	-825.94	69.89	-824.35	0.00	0.00	0.00
6,100.00	0.00	0.00	5,985.54	-825.94	69.89	-824.35	0.00	0.00	0.00
6,200.00	0.00	0.00	6,085.54	-825.94	69.89	-824.35	0.00	0.00	0.00
6,300.00	0.00	0.00	6,185.54	-825.94	69.89	-824.35	0.00	0.00	0.00
6,400.00	0.00	0.00	6,285.54	-825.94	69.89	-824.35	0.00	0.00	0.00
6,500.00	0.00	0.00	6,385.54	-825.94	69.89	-824.35	0.00	0.00	0.00
6,600.00	0.00	0.00	6,485.54	-825.94	69.89	-824.35	0.00	0.00	0.00
6,700.00	0.00	0.00	6,585.54	-825.94	69.89	-824.35	0.00	0.00	0.00
6,800.00	0.00	0.00	6,685.54	-825.94	69.89	-824.35	0.00	0.00	0.00
6,900.00	0.00	0.00	6,785.54	-825.94	69.89	-824.35	0.00	0.00	0.00
6,900.84	0.00	0.00	6,786.37	-825.94	69.89	-824.35	0.00	0.00	0.00
7,000.00	8.92	0.20	6,885.14	-818.23	69.92	-816.65	9.00	9.00	0.00
7,100.00	17.92	0.20	6,982.30	-795.04	70.00	-793.46	9.00	9.00	0.00
7,200.00	26.92	0.20	7,074.65	-756.93	70.13	-755.36	9.00	9.00	0.00
7,200.40	26.96	0.20	7,075.00	-756.75	70.13	-755.18	9.00	9.00	0.00
Sharon Springs									
7,300.00	35.92	0.20	7,159.89	-704.85	70.30	-703.28	9.00	9.00	0.00
7,301.37	36.05	0.20	7,161.00	-704.04	70.31	-702.47	9.00	9.00	0.00
Niobrara									
7,364.34	41.72	0.20	7,210.00	-664.53	70.44	-662.97	9.00	9.00	0.00
Nio B									
7,400.00	44.92	0.20	7,235.94	-640.07	70.52	-638.51	9.00	9.00	0.00
7,444.01	48.89	0.20	7,266.00	-607.94	70.63	-606.39	9.00	9.00	0.00
Nio C									
7,500.00	53.92	0.20	7,300.92	-564.20	70.78	-562.64	9.00	9.00	0.00
7,600.00	62.92	0.20	7,353.23	-479.09	71.07	-477.55	9.00	9.00	0.00
7,700.00	71.92	0.20	7,391.58	-386.85	71.39	-385.32	9.00	9.00	0.00
7,711.35	72.95	0.20	7,395.00	-376.03	71.43	-374.50	9.00	9.00	0.00
Fort Hayes									
7,800.00	80.92	0.20	7,415.02	-289.74	71.72	-288.23	9.00	9.00	0.00
7,806.39	81.50	0.20	7,416.00	-283.43	71.74	-281.92	9.00	9.00	0.00
Codell									
7,900.00	89.92	0.20	7,422.99	-190.16	72.06	-188.66	9.00	9.00	0.00
7,906.78	90.53	0.20	7,422.97	-183.38	72.08	-181.88	9.00	9.00	0.00
Top of Production - BABCOCK 14C-33HZ_PHL									
8,000.00	90.54	0.20	7,422.10	-90.17	72.40	-88.68	0.00	0.00	0.00
8,100.00	90.54	0.20	7,421.16	9.83	72.74	11.30	0.00	0.00	0.00

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well BABCOCK 14C-33HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4904.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4904.00usft (D Rig)
Site:	3N-67W-33 BABCOCK 6-4HZ Pad	North Reference:	True
Well:	BABCOCK 14C-33HZ	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)
8,200.00	90.54	0.20	7,420.23	109.82	73.08	111.28	0.00	0.00	0.00
8,300.00	90.54	0.20	7,419.29	209.82	73.43	211.26	0.00	0.00	0.00
8,400.00	90.54	0.20	7,418.36	309.81	73.77	311.25	0.00	0.00	0.00
8,500.00	90.54	0.20	7,417.43	409.81	74.11	411.23	0.00	0.00	0.00
8,600.00	90.54	0.20	7,416.49	509.80	74.45	511.21	0.00	0.00	0.00
8,700.00	90.54	0.20	7,415.56	609.80	74.79	611.19	0.00	0.00	0.00
8,800.00	90.54	0.20	7,414.63	709.79	75.13	711.17	0.00	0.00	0.00
8,900.00	90.54	0.20	7,413.69	809.79	75.47	811.15	0.00	0.00	0.00
9,000.00	90.54	0.20	7,412.76	909.78	75.81	911.13	0.00	0.00	0.00
9,100.00	90.54	0.20	7,411.82	1,009.78	76.16	1,011.12	0.00	0.00	0.00
9,200.00	90.54	0.20	7,410.89	1,109.77	76.50	1,111.10	0.00	0.00	0.00
9,300.00	90.54	0.20	7,409.96	1,209.77	76.84	1,211.08	0.00	0.00	0.00
9,400.00	90.54	0.20	7,409.02	1,309.76	77.18	1,311.06	0.00	0.00	0.00
9,500.00	90.54	0.20	7,408.09	1,409.76	77.52	1,411.04	0.00	0.00	0.00
9,600.00	90.54	0.20	7,407.16	1,509.75	77.86	1,511.02	0.00	0.00	0.00
9,700.00	90.54	0.20	7,406.22	1,609.75	78.20	1,611.00	0.00	0.00	0.00
9,800.00	90.54	0.20	7,405.29	1,709.74	78.55	1,710.99	0.00	0.00	0.00
9,900.00	90.54	0.20	7,404.35	1,809.74	78.89	1,810.97	0.00	0.00	0.00
10,000.00	90.54	0.20	7,403.42	1,909.73	79.23	1,910.95	0.00	0.00	0.00
10,100.00	90.54	0.20	7,402.49	2,009.73	79.57	2,010.93	0.00	0.00	0.00
10,200.00	90.54	0.20	7,401.55	2,109.72	79.91	2,110.91	0.00	0.00	0.00
10,300.00	90.54	0.20	7,400.62	2,209.72	80.25	2,210.89	0.00	0.00	0.00
10,400.00	90.54	0.20	7,399.69	2,309.71	80.59	2,310.87	0.00	0.00	0.00
10,500.00	90.54	0.20	7,398.75	2,409.71	80.93	2,410.86	0.00	0.00	0.00
10,600.00	90.54	0.20	7,397.82	2,509.70	81.28	2,510.84	0.00	0.00	0.00
10,700.00	90.54	0.20	7,396.89	2,609.70	81.62	2,610.82	0.00	0.00	0.00
10,800.00	90.54	0.20	7,395.95	2,709.70	81.96	2,710.80	0.00	0.00	0.00
10,900.00	90.54	0.20	7,395.02	2,809.69	82.30	2,810.78	0.00	0.00	0.00
11,000.00	90.54	0.20	7,394.08	2,909.69	82.64	2,910.76	0.00	0.00	0.00
11,100.00	90.54	0.20	7,393.15	3,009.68	82.98	3,010.74	0.00	0.00	0.00
11,200.00	90.54	0.20	7,392.22	3,109.68	83.32	3,110.73	0.00	0.00	0.00
11,300.00	90.54	0.20	7,391.28	3,209.67	83.67	3,210.71	0.00	0.00	0.00
11,400.00	90.54	0.20	7,390.35	3,309.67	84.01	3,310.69	0.00	0.00	0.00
11,500.00	90.54	0.20	7,389.42	3,409.66	84.35	3,410.67	0.00	0.00	0.00
11,600.00	90.54	0.20	7,388.48	3,509.66	84.69	3,510.65	0.00	0.00	0.00
11,700.00	90.54	0.20	7,387.55	3,609.65	85.03	3,610.63	0.00	0.00	0.00
11,800.00	90.54	0.20	7,386.61	3,709.65	85.37	3,710.61	0.00	0.00	0.00
11,900.00	90.54	0.20	7,385.68	3,809.64	85.71	3,810.60	0.00	0.00	0.00
12,000.00	90.54	0.20	7,384.75	3,909.64	86.05	3,910.58	0.00	0.00	0.00
12,100.00	90.54	0.20	7,383.81	4,009.63	86.40	4,010.56	0.00	0.00	0.00
12,200.00	90.54	0.20	7,382.88	4,109.63	86.74	4,110.54	0.00	0.00	0.00
12,300.00	90.54	0.20	7,381.95	4,209.62	87.08	4,210.52	0.00	0.00	0.00
12,400.00	90.54	0.20	7,381.01	4,309.62	87.42	4,310.50	0.00	0.00	0.00
12,401.21	90.54	0.20	7,381.00	4,310.83	87.42	4,311.72	0.00	0.00	0.00
BABCOCK 14C-33HZ_PBHL									

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well BABCOCK 14C-33HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4904.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4904.00usft (D Rig)
Site:	3N-67W-33 BABCOCK 6-4HZ Pad	North Reference:	True
Well:	BABCOCK 14C-33HZ	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)		
BABCOCK 14C-33HZ	0.00	0.00	7,381.00	4,310.83	87.42	14,592,667.69	1,669,333.64	40.181019	-104.896470
- plan hits target center									
- Point									
BABCOCK 14C-33HZ	0.00	0.00	7,422.97	-183.38	72.08	14,588,173.47	1,669,323.52	40.168678	-104.896525
- plan hits target center									
- Point									

Casing Points					
	Measured Depth	Vertical Depth		Casing Diameter	Hole Diameter
	(usft)	(usft)	Name	(")	(")
	1,826.26	1,800.00	9 5/8"	9-5/8	13-1/2
	7,906.78	7,422.97	Top of Production	5-1/2	7-7/8

Formations						
	Measured Depth	Vertical Depth			Dip	Dip Direction
	(usft)	(usft)	Name	Lithology	(°)	(°)
	976.23	975.00	Fox Hills			
	4,690.46	4,576.00	Sussex			
	7,200.40	7,075.00	Sharon Springs			
	7,301.37	7,161.00	Niobrara			
	7,364.34	7,210.00	Nio B			
	7,444.01	7,266.00	Nio C			
	7,711.35	7,395.00	Fort Hayes			
	7,806.39	7,416.00	Codell			