

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

3N-68W-33 Newby 27N-33HZ Pad

NEWBY 2N-33HZ

Plan A

Plan: Permit Rev-1

Standard Survey Report

18 January, 2016

0-1800' MD

APC_ISCWSA REV 2 MWD

1800-12529.59' MD

APC_ISCWSA REV 2 MWD+IFR1

Project: WELD-NAD83-UTMFT13N
Site: 3N-68W-33 Newby 27N-33HZ Pad
Well: NEWBY 2N-33HZ
Wellbore: Plan A
Design: Permit Rev-1

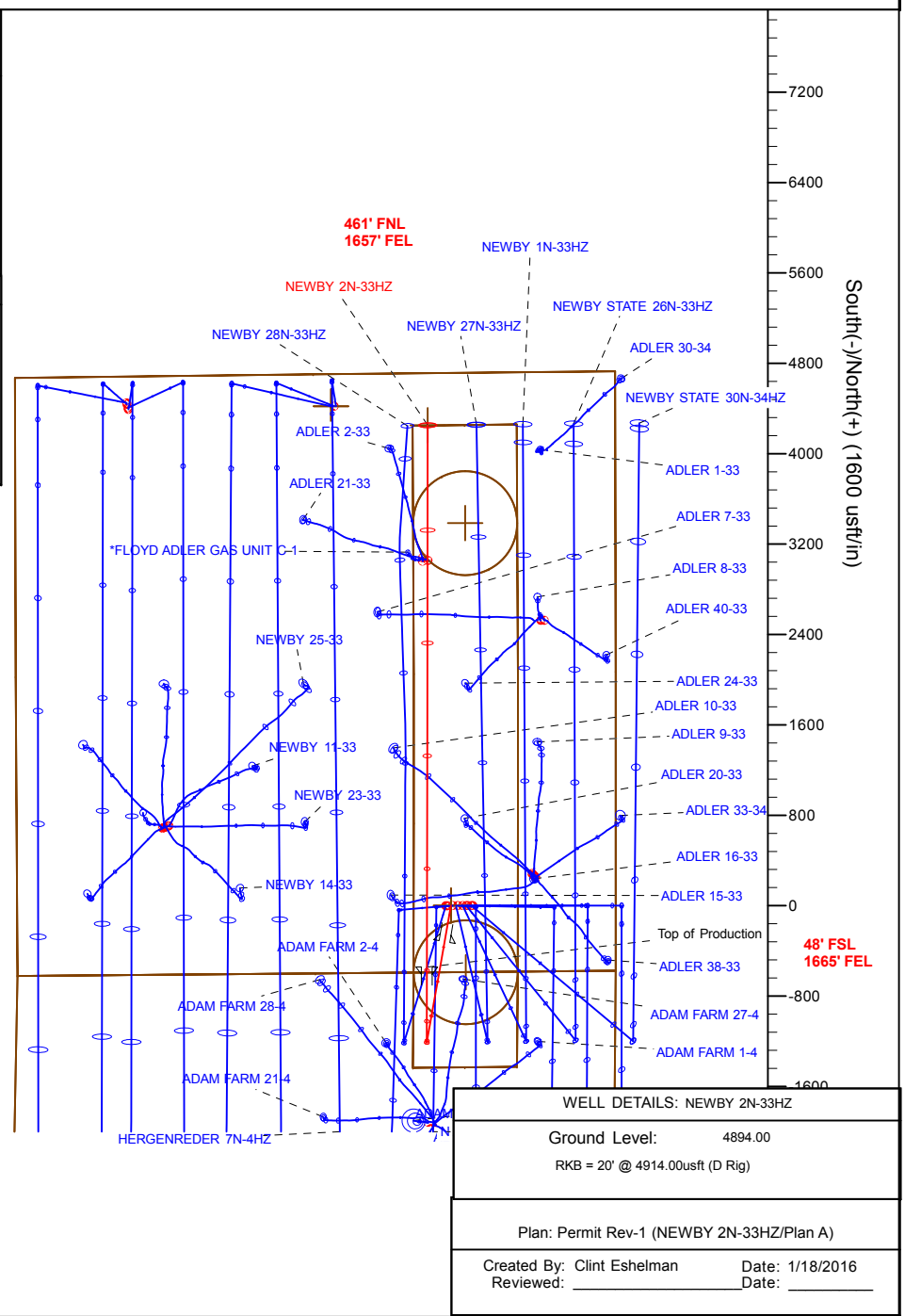
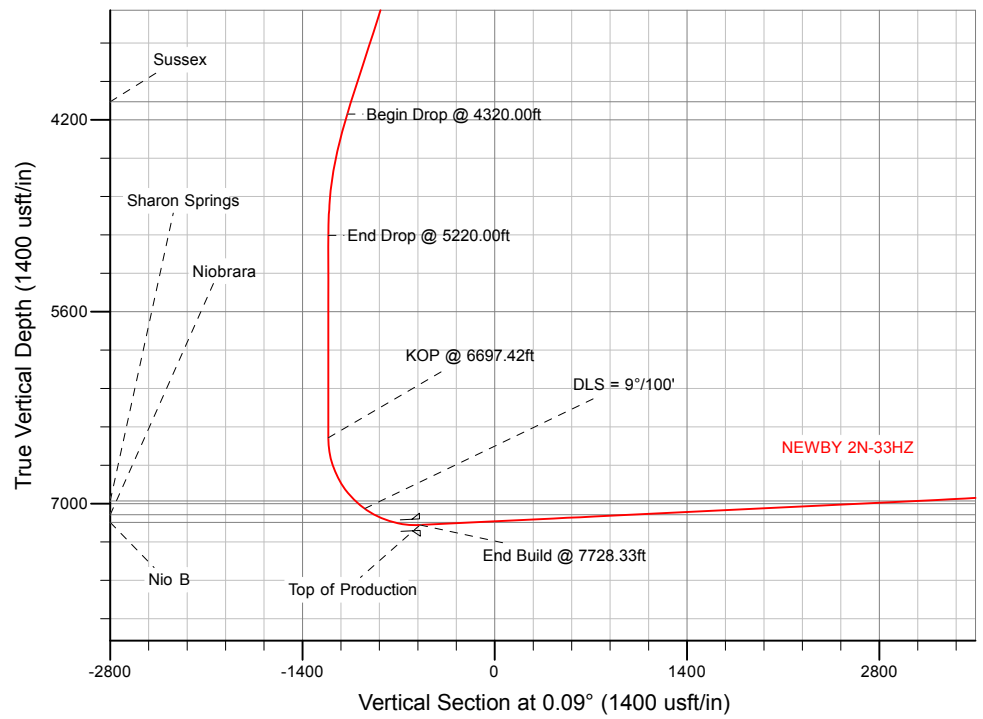
US ROCKIES WATTENBERG PLANNING

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	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	1400.00	18.00	190.00	1380.36	-184.11	-32.46	1.50	190.00	-184.16	
4	4320.00	18.00	190.00	4157.44	-1072.73	-189.15	0.00	0.00	-1073.03	
5	5220.00	0.00	0.00	5042.71	-1210.81	-213.50	2.00	180.00	-1211.15	
6	6697.42	0.00	0.00	6520.13	-1210.81	-213.50	0.00	0.00	-1211.15	
7	7728.33	92.78	0.09	7156.00	-543.30	-212.46	9.00	0.09	-543.63	
8	12529.59	92.78	0.09	6923.00	4252.30	-204.99	0.00	0.00	4251.97	NEWBY 2N-33HZ_Toe

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
NEWBY 2N-33HZ_SHL	0.00	0.00	0.00	40.176576	-105.003557	Point
NEWBY 2N-33HZ_Toe	6923.00	4252.30	-204.99	40.188253	-105.004291	Point



WELL DETAILS: NEWBY 2N-33HZ	
Ground Level:	4894.00
RKB = 20' @ 4914.00usft (D Rig)	
Plan: Permit Rev-1 (NEWBY 2N-33HZ/Plan A)	
Created By: Clint Eshelman	Date: 1/18/2016
Reviewed: _____	Date: _____

Anadarko

Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well NEWBY 2N-33HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	RKB = 20' @ 4914.00usft (D Rig)
Site:	3N-68W-33 Newby 27N-33HZ Pad	MD Reference:	RKB = 20' @ 4914.00usft (D Rig)
Well:	NEWBY 2N-33HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Permit Rev-1	Database:	PLANNING

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-68W-33 Newby 27N-33HZ Pad		
Site Position:		Northing:	14,591,032.57 usft
From:	Lat/Long	Easting:	1,639,378.12 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	40.176575
		Longitude:	-105.003718
		Grid Convergence:	0.00 °

Well	NEWBY 2N-33HZ		
Well Position	+N/-S	0.00 usft	Northing: 14,591,032.93 usft
	+E/-W	0.00 usft	Easting: 1,639,423.09 usft
Position Uncertainty	3.28 usft	Wellhead Elevation:	0.00 usft
		Latitude:	40.176576
		Longitude:	-105.003557
		Ground Level:	4,894.00 usft

Wellbore	Plan A		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2010	1/14/2016	8.36
			Dip Angle (°) 66.67
			Field Strength (nT) 52,506

Design	Permit Rev-1		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00
			Direction (°) 0.09

Survey Tool Program	Date	1/18/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	1,800.00	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD	Fixed:v2:standard declination
1,800.00	12,529.59	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination

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	
Begin Nudge @ 200.00ft										
300.00	1.50	190.00	299.99	-1.29	-0.23	-1.29	1.50	1.50	0.00	
400.00	3.00	190.00	399.91	-5.16	-0.91	-5.16	1.50	1.50	0.00	
500.00	4.50	190.00	499.69	-11.60	-2.04	-11.60	1.50	1.50	0.00	
600.00	6.00	190.00	599.27	-20.61	-3.63	-20.61	1.50	1.50	0.00	
700.00	7.50	190.00	698.57	-32.18	-5.67	-32.19	1.50	1.50	0.00	
800.00	9.00	190.00	797.54	-46.31	-8.17	-46.33	1.50	1.50	0.00	

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Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well NEWBY 2N-33HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	RKB = 20' @ 4914.00usft (D Rig)
Site:	3N-68W-33 Newby 27N-33HZ Pad	MD Reference:	RKB = 20' @ 4914.00usft (D Rig)
Well:	NEWBY 2N-33HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Permit Rev-1	Database:	PLANNING

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)
821.74	9.33	190.00	819.00	-49.72	-8.77	-49.74	1.50	1.50	0.00
Fox Hills									
900.00	10.50	190.00	896.09	-62.99	-11.11	-63.01	1.50	1.50	0.00
1,000.00	12.00	190.00	994.16	-82.20	-14.49	-82.22	1.50	1.50	0.00
1,100.00	13.50	190.00	1,091.70	-103.94	-18.33	-103.96	1.50	1.50	0.00
1,200.00	15.00	190.00	1,188.62	-128.18	-22.60	-128.21	1.50	1.50	0.00
1,300.00	16.50	190.00	1,284.86	-154.91	-27.31	-154.95	1.50	1.50	0.00
1,400.00	18.00	190.00	1,380.36	-184.11	-32.46	-184.16	1.50	1.50	0.00
End Nudge @ 1400.00ft									
1,500.00	18.00	190.00	1,475.46	-214.54	-37.83	-214.60	0.00	0.00	0.00
1,600.00	18.00	190.00	1,570.57	-244.97	-43.20	-245.04	0.00	0.00	0.00
1,700.00	18.00	190.00	1,665.67	-275.41	-48.56	-275.48	0.00	0.00	0.00
1,800.00	18.00	190.00	1,760.78	-305.84	-53.93	-305.92	0.00	0.00	0.00
1,841.24	18.00	190.00	1,800.00	-318.39	-56.14	-318.48	0.00	0.00	0.00
9 5/8"									
1,900.00	18.00	190.00	1,855.89	-336.27	-59.29	-336.36	0.00	0.00	0.00
2,000.00	18.00	190.00	1,950.99	-366.70	-64.66	-366.80	0.00	0.00	0.00
2,100.00	18.00	190.00	2,046.10	-397.14	-70.03	-397.25	0.00	0.00	0.00
2,200.00	18.00	190.00	2,141.20	-427.57	-75.39	-427.69	0.00	0.00	0.00
2,300.00	18.00	190.00	2,236.31	-458.00	-80.76	-458.13	0.00	0.00	0.00
2,400.00	18.00	190.00	2,331.41	-488.43	-86.12	-488.57	0.00	0.00	0.00
2,500.00	18.00	190.00	2,426.52	-518.86	-91.49	-519.01	0.00	0.00	0.00
2,600.00	18.00	190.00	2,521.63	-549.30	-96.86	-549.45	0.00	0.00	0.00
2,700.00	18.00	190.00	2,616.73	-579.73	-102.22	-579.89	0.00	0.00	0.00
2,800.00	18.00	190.00	2,711.84	-610.16	-107.59	-610.33	0.00	0.00	0.00
2,900.00	18.00	190.00	2,806.94	-640.59	-112.95	-640.77	0.00	0.00	0.00
3,000.00	18.00	190.00	2,902.05	-671.03	-118.32	-671.21	0.00	0.00	0.00
3,100.00	18.00	190.00	2,997.15	-701.46	-123.69	-701.65	0.00	0.00	0.00
3,200.00	18.00	190.00	3,092.26	-731.89	-129.05	-732.09	0.00	0.00	0.00
3,300.00	18.00	190.00	3,187.37	-762.32	-134.42	-762.53	0.00	0.00	0.00
3,400.00	18.00	190.00	3,282.47	-792.75	-139.78	-792.97	0.00	0.00	0.00
3,500.00	18.00	190.00	3,377.58	-823.19	-145.15	-823.41	0.00	0.00	0.00
3,600.00	18.00	190.00	3,472.68	-853.62	-150.52	-853.85	0.00	0.00	0.00
3,700.00	18.00	190.00	3,567.79	-884.05	-155.88	-884.30	0.00	0.00	0.00
3,800.00	18.00	190.00	3,662.89	-914.48	-161.25	-914.74	0.00	0.00	0.00
3,900.00	18.00	190.00	3,758.00	-944.92	-166.61	-945.18	0.00	0.00	0.00
4,000.00	18.00	190.00	3,853.11	-975.35	-171.98	-975.62	0.00	0.00	0.00
4,100.00	18.00	190.00	3,948.21	-1,005.78	-177.35	-1,006.06	0.00	0.00	0.00
4,200.00	18.00	190.00	4,043.32	-1,036.21	-182.71	-1,036.50	0.00	0.00	0.00
4,225.95	18.00	190.00	4,068.00	-1,044.11	-184.10	-1,044.40	0.00	0.00	0.00
Sussex									
4,300.00	18.00	190.00	4,138.42	-1,066.64	-188.08	-1,066.94	0.00	0.00	0.00
4,320.00	18.00	190.00	4,157.44	-1,072.73	-189.15	-1,073.03	0.00	0.00	0.00
Begin Drop @ 4320.00ft									

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Survey Report

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Site:	3N-68W-33 Newby 27N-33HZ Pad	MD Reference:	RKB = 20' @ 4914.00usft (D Rig)
Well:	NEWBY 2N-33HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Permit Rev-1	Database:	PLANNING

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)
4,400.00	16.40	190.00	4,233.86	-1,096.03	-193.26	-1,096.33	2.00	-2.00	0.00
4,500.00	14.40	190.00	4,330.27	-1,122.18	-197.87	-1,122.49	2.00	-2.00	0.00
4,600.00	12.40	190.00	4,427.54	-1,145.00	-201.89	-1,145.32	2.00	-2.00	0.00
4,700.00	10.40	190.00	4,525.56	-1,164.46	-205.33	-1,164.79	2.00	-2.00	0.00
4,800.00	8.40	190.00	4,624.21	-1,180.55	-208.16	-1,180.87	2.00	-2.00	0.00
4,900.00	6.40	190.00	4,723.38	-1,193.23	-210.40	-1,193.56	2.00	-2.00	0.00
5,000.00	4.40	190.00	4,822.93	-1,202.50	-212.03	-1,202.83	2.00	-2.00	0.00
5,100.00	2.40	190.00	4,922.75	-1,208.34	-213.06	-1,208.67	2.00	-2.00	0.00
5,200.00	0.40	190.00	5,022.71	-1,210.75	-213.49	-1,211.08	2.00	-2.00	0.00
5,220.00	0.00	0.00	5,042.71	-1,210.81	-213.50	-1,211.15	2.00	-2.00	0.00
End Drop @ 5220.00ft									
5,300.00	0.00	0.00	5,122.71	-1,210.81	-213.50	-1,211.15	0.00	0.00	0.00
5,400.00	0.00	0.00	5,222.71	-1,210.81	-213.50	-1,211.15	0.00	0.00	0.00
5,500.00	0.00	0.00	5,322.71	-1,210.81	-213.50	-1,211.15	0.00	0.00	0.00
5,600.00	0.00	0.00	5,422.71	-1,210.81	-213.50	-1,211.15	0.00	0.00	0.00
5,700.00	0.00	0.00	5,522.71	-1,210.81	-213.50	-1,211.15	0.00	0.00	0.00
5,800.00	0.00	0.00	5,622.71	-1,210.81	-213.50	-1,211.15	0.00	0.00	0.00
5,900.00	0.00	0.00	5,722.71	-1,210.81	-213.50	-1,211.15	0.00	0.00	0.00
6,000.00	0.00	0.00	5,822.71	-1,210.81	-213.50	-1,211.15	0.00	0.00	0.00
6,100.00	0.00	0.00	5,922.71	-1,210.81	-213.50	-1,211.15	0.00	0.00	0.00
6,200.00	0.00	0.00	6,022.71	-1,210.81	-213.50	-1,211.15	0.00	0.00	0.00
6,300.00	0.00	0.00	6,122.71	-1,210.81	-213.50	-1,211.15	0.00	0.00	0.00
6,400.00	0.00	0.00	6,222.71	-1,210.81	-213.50	-1,211.15	0.00	0.00	0.00
6,500.00	0.00	0.00	6,322.71	-1,210.81	-213.50	-1,211.15	0.00	0.00	0.00
6,600.00	0.00	0.00	6,422.71	-1,210.81	-213.50	-1,211.15	0.00	0.00	0.00
6,697.42	0.00	0.00	6,520.13	-1,210.81	-213.50	-1,211.15	0.00	0.00	0.00
KOP @ 6697.42ft									
6,700.00	0.23	0.09	6,522.71	-1,210.81	-213.50	-1,211.14	9.00	9.00	0.00
6,800.00	9.23	0.09	6,622.27	-1,202.57	-213.49	-1,202.90	9.00	9.00	0.00
6,900.00	18.23	0.09	6,719.31	-1,178.85	-213.45	-1,179.19	9.00	9.00	0.00
7,000.00	27.23	0.09	6,811.45	-1,140.25	-213.39	-1,140.58	9.00	9.00	0.00
7,100.00	36.23	0.09	6,896.41	-1,087.71	-213.31	-1,088.04	9.00	9.00	0.00
7,200.00	45.23	0.09	6,972.11	-1,022.52	-213.21	-1,022.86	9.00	9.00	0.00
7,212.75	46.38	0.09	6,981.00	-1,013.38	-213.19	-1,013.71	9.00	9.00	0.00
Sharon Springs									
7,300.00	54.23	0.09	7,036.68	-946.30	-213.09	-946.63	9.00	9.00	0.00
DLS = 9°/100'									
7,383.69	61.76	0.09	7,081.00	-875.38	-212.98	-875.71	9.00	9.00	0.00
Niobrara									
7,400.00	63.23	0.09	7,088.53	-860.91	-212.95	-861.25	9.00	9.00	0.00
7,500.00	72.23	0.09	7,126.39	-768.47	-212.81	-768.80	9.00	9.00	0.00
7,538.43	75.69	0.09	7,137.00	-731.54	-212.75	-731.87	9.00	9.00	0.00
Nio B									
7,600.00	81.23	0.09	7,149.31	-671.24	-212.66	-671.57	9.00	9.00	0.00

Anadarko

Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well NEWBY 2N-33HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	RKB = 20' @ 4914.00usft (D Rig)
Site:	3N-68W-33 Newby 27N-33HZ Pad	MD Reference:	RKB = 20' @ 4914.00usft (D Rig)
Well:	NEWBY 2N-33HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Permit Rev-1	Database:	PLANNING

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)
7,700.00	90.23	0.09	7,156.75	-571.61	-212.50	-571.95	9.00	9.00	0.00
7,728.33	92.78	0.09	7,156.00	-543.30	-212.46	-543.63	9.00	9.00	0.00
End Build @ 7728.33ft - Top of Production									
7,800.00	92.78	0.09	7,152.52	-471.71	-212.35	-472.04	0.00	0.00	0.00
7,900.00	92.78	0.09	7,147.67	-371.83	-212.19	-372.16	0.00	0.00	0.00
8,000.00	92.78	0.09	7,142.82	-271.95	-212.04	-272.28	0.00	0.00	0.00
8,100.00	92.78	0.09	7,137.96	-172.07	-211.88	-172.40	0.00	0.00	0.00
8,200.00	92.78	0.09	7,133.11	-72.18	-211.73	-72.52	0.00	0.00	0.00
8,300.00	92.78	0.09	7,128.26	27.70	-211.57	27.37	0.00	0.00	0.00
8,400.00	92.78	0.09	7,123.41	127.58	-211.41	127.25	0.00	0.00	0.00
8,500.00	92.78	0.09	7,118.55	227.46	-211.26	227.13	0.00	0.00	0.00
8,600.00	92.78	0.09	7,113.70	327.34	-211.10	327.01	0.00	0.00	0.00
8,700.00	92.78	0.09	7,108.85	427.23	-210.95	426.89	0.00	0.00	0.00
8,800.00	92.78	0.09	7,103.99	527.11	-210.79	526.78	0.00	0.00	0.00
8,900.00	92.78	0.09	7,099.14	626.99	-210.64	626.66	0.00	0.00	0.00
9,000.00	92.78	0.09	7,094.29	726.87	-210.48	726.54	0.00	0.00	0.00
9,100.00	92.78	0.09	7,089.44	826.76	-210.33	826.42	0.00	0.00	0.00
9,200.00	92.78	0.09	7,084.58	926.64	-210.17	926.31	0.00	0.00	0.00
9,300.00	92.78	0.09	7,079.73	1,026.52	-210.01	1,026.19	0.00	0.00	0.00
9,400.00	92.78	0.09	7,074.88	1,126.40	-209.86	1,126.07	0.00	0.00	0.00
9,500.00	92.78	0.09	7,070.02	1,226.28	-209.70	1,225.95	0.00	0.00	0.00
9,600.00	92.78	0.09	7,065.17	1,326.17	-209.55	1,325.83	0.00	0.00	0.00
9,700.00	92.78	0.09	7,060.32	1,426.05	-209.39	1,425.72	0.00	0.00	0.00
9,800.00	92.78	0.09	7,055.46	1,525.93	-209.24	1,525.60	0.00	0.00	0.00
9,900.00	92.78	0.09	7,050.61	1,625.81	-209.08	1,625.48	0.00	0.00	0.00
10,000.00	92.78	0.09	7,045.76	1,725.69	-208.93	1,725.36	0.00	0.00	0.00
10,100.00	92.78	0.09	7,040.91	1,825.58	-208.77	1,825.25	0.00	0.00	0.00
10,200.00	92.78	0.09	7,036.05	1,925.46	-208.61	1,925.13	0.00	0.00	0.00
10,300.00	92.78	0.09	7,031.20	2,025.34	-208.46	2,025.01	0.00	0.00	0.00
10,400.00	92.78	0.09	7,026.35	2,125.22	-208.30	2,124.89	0.00	0.00	0.00
10,500.00	92.78	0.09	7,021.49	2,225.10	-208.15	2,224.77	0.00	0.00	0.00
10,600.00	92.78	0.09	7,016.64	2,324.99	-207.99	2,324.66	0.00	0.00	0.00
10,700.00	92.78	0.09	7,011.79	2,424.87	-207.84	2,424.54	0.00	0.00	0.00
10,800.00	92.78	0.09	7,006.94	2,524.75	-207.68	2,524.42	0.00	0.00	0.00
10,900.00	92.78	0.09	7,002.08	2,624.63	-207.53	2,624.30	0.00	0.00	0.00
11,000.00	92.78	0.09	6,997.23	2,724.51	-207.37	2,724.19	0.00	0.00	0.00
11,100.00	92.78	0.09	6,992.38	2,824.40	-207.21	2,824.07	0.00	0.00	0.00
11,200.00	92.78	0.09	6,987.52	2,924.28	-207.06	2,923.95	0.00	0.00	0.00
11,300.00	92.78	0.09	6,982.67	3,024.16	-206.90	3,023.83	0.00	0.00	0.00
11,400.00	92.78	0.09	6,977.82	3,124.04	-206.75	3,123.71	0.00	0.00	0.00
11,500.00	92.78	0.09	6,972.97	3,223.92	-206.59	3,223.60	0.00	0.00	0.00
11,600.00	92.78	0.09	6,968.11	3,323.81	-206.44	3,323.48	0.00	0.00	0.00
11,700.00	92.78	0.09	6,963.26	3,423.69	-206.28	3,423.36	0.00	0.00	0.00
11,800.00	92.78	0.09	6,958.41	3,523.57	-206.13	3,523.24	0.00	0.00	0.00

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Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well NEWBY 2N-33HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	RKB = 20' @ 4914.00usft (D Rig)
Site:	3N-68W-33 Newby 27N-33HZ Pad	MD Reference:	RKB = 20' @ 4914.00usft (D Rig)
Well:	NEWBY 2N-33HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Permit Rev-1	Database:	PLANNING

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)
11,900.00	92.78	0.09	6,953.55	3,623.45	-205.97	3,623.12	0.00	0.00	0.00
12,000.00	92.78	0.09	6,948.70	3,723.33	-205.81	3,723.01	0.00	0.00	0.00
12,100.00	92.78	0.09	6,943.85	3,823.22	-205.66	3,822.89	0.00	0.00	0.00
12,200.00	92.78	0.09	6,938.99	3,923.10	-205.50	3,922.77	0.00	0.00	0.00
12,300.00	92.78	0.09	6,934.14	4,022.98	-205.35	4,022.65	0.00	0.00	0.00
12,400.00	92.78	0.09	6,929.29	4,122.86	-205.19	4,122.54	0.00	0.00	0.00
12,500.00	92.78	0.09	6,924.44	4,222.75	-205.04	4,222.42	0.00	0.00	0.00
12,529.59	92.78	0.09	6,923.00	4,252.30	-204.99	4,251.97	0.00	0.00	0.00
TD Well @ 12529.59ft									

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Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well NEWBY 2N-33HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	RKB = 20' @ 4914.00usft (D Rig)
Site:	3N-68W-33 Newby 27N-33HZ Pad	MD Reference:	RKB = 20' @ 4914.00usft (D Rig)
Well:	NEWBY 2N-33HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Permit Rev-1	Database:	PLANNING

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
NEWBY 2N-33HZ_460' i - plan misses target center by 602.72usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Circle (radius 460.00)	0.00	0.00	0.00	-588.53	130.03	14,590,444.40	1,639,553.10	40.174960	-105.003092
NEWBY 2N-33HZ_460' i - plan misses target center by 3388.28usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Circle (radius 460.00)	0.00	0.00	0.00	3,385.97	125.17	14,594,418.90	1,639,548.40	40.185874	-105.003109
NEWBY 2N-33HZ_SHL - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	14,591,032.93	1,639,423.09	40.176576	-105.003557
NEWBY 2N-33HZ_Hard - plan hits target center - Polygon	0.00	0.00	0.00	0.00	0.00	14,591,032.93	1,639,423.09	40.176576	-105.003557
Point 1		0.00	4,249.45	-338.87		14,595,282.40	1,639,084.40		
Point 2		0.00	4,254.37	121.13		14,595,287.30	1,639,544.40		
Point 3		0.00	4,259.29	581.13		14,595,292.20	1,640,004.40		
Point 4		0.00	3,390.39	585.17		14,594,423.30	1,640,008.40		
Point 5		0.00	2,061.49	591.42		14,593,094.40	1,640,014.60		
Point 6		0.00	738.59	590.67		14,591,771.50	1,640,013.80		
Point 7		0.00	-584.21	590.03		14,590,448.70	1,640,013.10		
Point 8		0.00	-1,424.21	583.06		14,589,608.70	1,640,006.10		
Point 9		0.00	-1,429.03	122.96		14,589,603.90	1,639,546.00		
Point 10		0.00	-1,433.75	-337.04		14,589,599.20	1,639,086.00		
Point 11		0.00	-592.75	-330.07		14,590,440.20	1,639,093.00		
Point 12		0.00	730.45	-329.33		14,591,763.40	1,639,093.80		
Point 13		0.00	2,053.75	-328.58		14,593,086.70	1,639,094.60		
Point 14		0.00	3,381.55	-334.83		14,594,414.50	1,639,088.40		
Point 15		0.00	4,249.45	-338.87		14,595,282.40	1,639,084.40		
3N-R68W-Sec. 33_Secti - plan misses target center by 4545.61usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Polygon	0.00	0.00	-15.00	4,420.10	-1,060.70	14,595,453.07	1,638,362.57	40.188714	-105.007355
Point 1		-15.00	251.45	-2,791.30		14,595,704.64	1,635,571.28		
Point 2		-15.00	282.36	-157.69		14,595,735.44	1,638,204.89		
Point 3		-15.00	310.96	2,511.36		14,595,763.94	1,640,873.95		
Point 4		-15.00	-2,346.36	2,515.74		14,593,106.61	1,640,878.22		
Point 5		-15.00	-4,995.84	2,515.63		14,590,457.13	1,640,878.00		
Point 6		-15.00	-5,018.95	-136.58		14,590,434.13	1,638,225.79		
Point 7		-15.00	-5,040.96	-2,769.50		14,590,412.23	1,635,592.87		
Point 8		-15.00	-2,394.09	-2,784.98		14,593,059.10	1,635,577.50		
2N-R68W-Sec. 4_Sectio - plan misses target center by 4545.61usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Polygon	0.00	0.00	-15.00	4,420.10	-1,060.70	14,595,453.07	1,638,362.57	40.188714	-105.007355
Point 1		-15.00	-5,040.96	-2,769.50		14,590,412.23	1,635,592.87		
Point 2		-15.00	-5,018.95	-136.58		14,590,434.13	1,638,225.79		
Point 3		-15.00	-4,995.84	2,515.63		14,590,457.13	1,640,878.00		
Point 4		-15.00	-7,591.82	2,497.44		14,587,861.16	1,640,859.71		
Point 5		-15.00	-10,216.42	2,462.98		14,585,236.56	1,640,825.14		
Point 6		-15.00	-10,271.92	-193.52		14,585,181.16	1,638,168.64		
Point 7		-15.00	-10,321.42	-2,870.28		14,585,131.77	1,635,491.88		
Point 8		-15.00	-7,652.28	-2,819.20		14,587,800.91	1,635,543.07		
NEWBY 2N-33HZ_Toe - plan hits target center - Point	0.00	0.00	6,923.00	4,252.30	-204.99	14,595,285.24	1,639,218.27	40.188253	-105.004291

Anadarko

Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well NEWBY 2N-33HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	RKB = 20' @ 4914.00usft (D Rig)
Site:	3N-68W-33 Newby 27N-33HZ Pad	MD Reference:	RKB = 20' @ 4914.00usft (D Rig)
Well:	NEWBY 2N-33HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Permit Rev-1	Database:	PLANNING

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,841.24	1,800.00	9 5/8"	9-5/8	13-1/2	
7,728.33	7,156.00	Top of Production	5-1/2	7-7/8	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
821.74	819.00	Fox Hills			
4,225.95	4,068.00	Sussex			
7,212.75	6,981.00	Sharon Springs			
7,383.69	7,081.00	Niobrara			
7,538.43	7,137.00	Nio B			

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
200	200	0	0	Begin Nudge @ 200.00ft	
1400	1380	-184	-32	End Nudge @ 1400.00ft	
4320	4157	-1073	-189	Begin Drop @ 4320.00ft	
5220	5043	-1211	-213	End Drop @ 5220.00ft	
6697	6520	-1211	-213	KOP @ 6697.42ft	
7300	7037	-946	-213	DLS = 9°/100'	
7728	7156	-543	-212	End Build @ 7728.33ft	
12,530	6923	4252	-205	TD Well @ 12529.59ft	

Checked By: _____ Approved By: _____ Date: _____