

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

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

NEWBY 27N-33HZ

Plan A

Plan: Permit Rev-1

Standard Survey Report

18 January, 2016

0-1800' MD	APC_ISCWSA REV 2 MWD
1800-12595.34' MD	APC_ISCWSA REV 2 MWD+IFR1

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

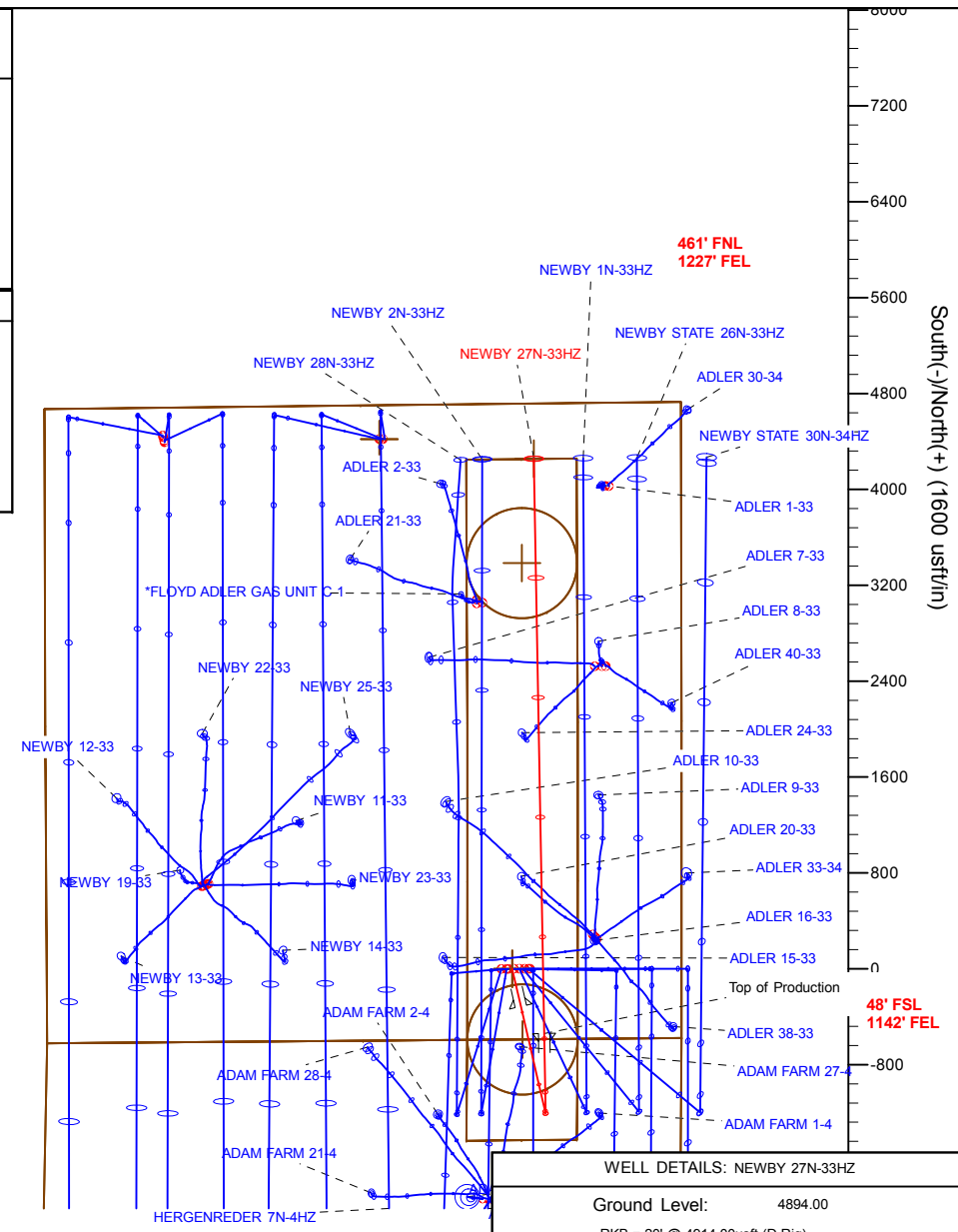
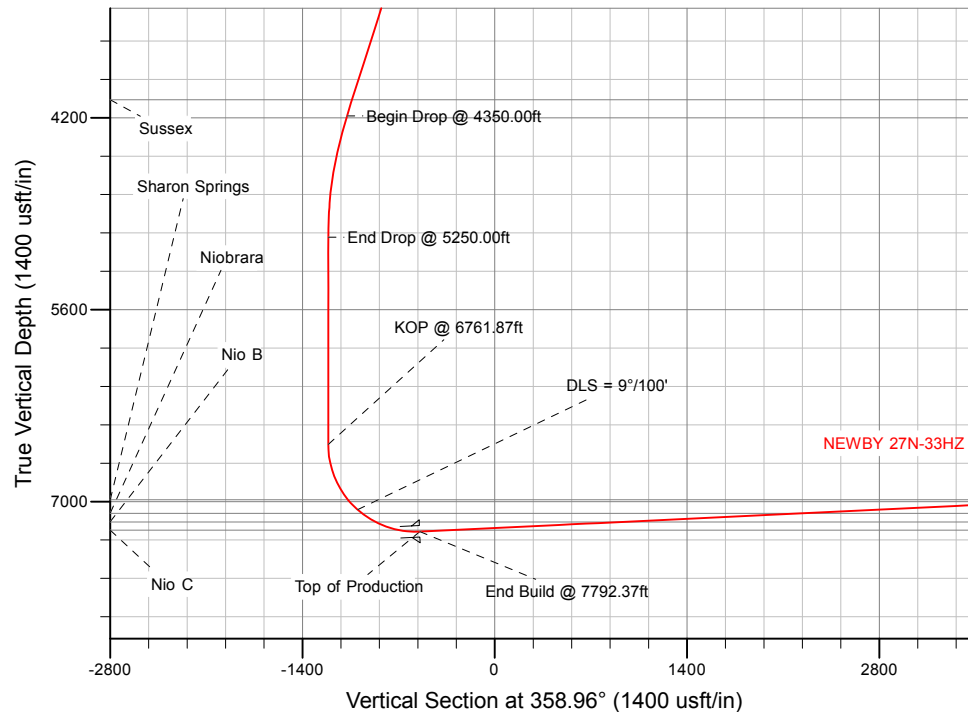
US ROCKIES WATTENBERG PLANNING

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	167.00	1380.36	-182.16	42.05	1.50	167.00	-182.89	
4	4350.00	18.00	167.00	4185.97	-1070.39	247.12	0.00	0.00	-1074.70	
5	5250.00	0.00	0.00	5071.24	-1207.01	278.66	2.00	180.00	-1211.87	
6	6761.87	0.00	0.00	6583.11	-1207.01	278.66	0.00	0.00	-1211.87	
7	7792.37	92.74	358.96	7219.00	-540.02	266.60	9.00	358.96	-544.77	
8	12595.34	92.74	358.96	6989.00	4256.66	179.86	0.00	0.00	4252.69	NEWBY 27N-33HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
NEWBY 27N-33HZ_SHL	0.00	0.00	0.00	40.176577	-105.003396	Point
NEWBY 27N-33HZ_BHL	6989.00	4256.66	179.86	40.188266	-105.002752	Point



WELL DETAILS: NEWBY 27N-33HZ

Ground Level: 4894.00

RKB = 20' @ 4914.00usft (D Rig)

Plan: Permit Rev-1 (NEWBY 27N-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 27N-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 27N-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	Latitude:	40.176575
From:	Lat/Long	Easting:	1,639,378.12 usft	Longitude:	-105.003718
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.00 °

Well		NEWBY 27N-33HZ				
Well Position	+N/-S	0.00 usft	Northing:	14,591,033.29 usft	Latitude:	40.176577
	+E/-W	0.00 usft	Easting:	1,639,468.06 usft	Longitude:	-105.003396
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,894.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/14/2016	8.36	66.67	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)	Direction (°)	
	0.00	0.00	0.00	358.96	

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	12,595.34	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	167.00	299.99	-1.28	0.29	-1.28	1.50	1.50	0.00	
400.00	3.00	167.00	399.91	-5.10	1.18	-5.12	1.50	1.50	0.00	
500.00	4.50	167.00	499.69	-11.47	2.65	-11.52	1.50	1.50	0.00	
600.00	6.00	167.00	599.27	-20.39	4.71	-20.47	1.50	1.50	0.00	
700.00	7.50	167.00	698.57	-31.84	7.35	-31.97	1.50	1.50	0.00	
800.00	9.00	167.00	797.54	-45.82	10.58	-46.01	1.50	1.50	0.00	

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Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well NEWBY 27N-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 27N-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	167.00	819.00	-49.20	11.36	-49.39	1.50	1.50	0.00
Fox Hills									
900.00	10.50	167.00	896.09	-62.32	14.39	-62.57	1.50	1.50	0.00
1,000.00	12.00	167.00	994.16	-81.33	18.78	-81.66	1.50	1.50	0.00
1,100.00	13.50	167.00	1,091.70	-102.83	23.74	-103.25	1.50	1.50	0.00
1,200.00	15.00	167.00	1,188.62	-126.82	29.28	-127.33	1.50	1.50	0.00
1,300.00	16.50	167.00	1,284.86	-153.27	35.38	-153.88	1.50	1.50	0.00
1,400.00	18.00	167.00	1,380.36	-182.16	42.05	-182.89	1.50	1.50	0.00
End Nudge @ 1400.00ft									
1,500.00	18.00	167.00	1,475.46	-212.27	49.01	-213.12	0.00	0.00	0.00
1,600.00	18.00	167.00	1,570.57	-242.38	55.96	-243.35	0.00	0.00	0.00
1,700.00	18.00	167.00	1,665.67	-272.49	62.91	-273.58	0.00	0.00	0.00
1,800.00	18.00	167.00	1,760.78	-302.60	69.86	-303.82	0.00	0.00	0.00
1,841.24	18.00	167.00	1,800.00	-315.01	72.73	-316.28	0.00	0.00	0.00
9 5/8"									
1,900.00	18.00	167.00	1,855.89	-332.71	76.81	-334.05	0.00	0.00	0.00
2,000.00	18.00	167.00	1,950.99	-362.82	83.76	-364.28	0.00	0.00	0.00
2,100.00	18.00	167.00	2,046.10	-392.93	90.71	-394.51	0.00	0.00	0.00
2,200.00	18.00	167.00	2,141.20	-423.04	97.67	-424.74	0.00	0.00	0.00
2,300.00	18.00	167.00	2,236.31	-453.15	104.62	-454.97	0.00	0.00	0.00
2,400.00	18.00	167.00	2,331.41	-483.26	111.57	-485.20	0.00	0.00	0.00
2,500.00	18.00	167.00	2,426.52	-513.37	118.52	-515.43	0.00	0.00	0.00
2,600.00	18.00	167.00	2,521.63	-543.48	125.47	-545.66	0.00	0.00	0.00
2,700.00	18.00	167.00	2,616.73	-573.58	132.42	-575.89	0.00	0.00	0.00
2,800.00	18.00	167.00	2,711.84	-603.69	139.37	-606.12	0.00	0.00	0.00
2,900.00	18.00	167.00	2,806.94	-633.80	146.33	-636.36	0.00	0.00	0.00
3,000.00	18.00	167.00	2,902.05	-663.91	153.28	-666.59	0.00	0.00	0.00
3,100.00	18.00	167.00	2,997.15	-694.02	160.23	-696.82	0.00	0.00	0.00
3,200.00	18.00	167.00	3,092.26	-724.13	167.18	-727.05	0.00	0.00	0.00
3,300.00	18.00	167.00	3,187.37	-754.24	174.13	-757.28	0.00	0.00	0.00
3,400.00	18.00	167.00	3,282.47	-784.35	181.08	-787.51	0.00	0.00	0.00
3,500.00	18.00	167.00	3,377.58	-814.46	188.03	-817.74	0.00	0.00	0.00
3,600.00	18.00	167.00	3,472.68	-844.57	194.98	-847.97	0.00	0.00	0.00
3,700.00	18.00	167.00	3,567.79	-874.68	201.94	-878.20	0.00	0.00	0.00
3,800.00	18.00	167.00	3,662.89	-904.79	208.89	-908.43	0.00	0.00	0.00
3,900.00	18.00	167.00	3,758.00	-934.90	215.84	-938.66	0.00	0.00	0.00
4,000.00	18.00	167.00	3,853.11	-965.01	222.79	-968.90	0.00	0.00	0.00
4,100.00	18.00	167.00	3,948.21	-995.12	229.74	-999.13	0.00	0.00	0.00
4,200.00	18.00	167.00	4,043.32	-1,025.23	236.69	-1,029.36	0.00	0.00	0.00
4,225.95	18.00	167.00	4,068.00	-1,033.04	238.50	-1,037.20	0.00	0.00	0.00
Sussex									
4,300.00	18.00	167.00	4,138.42	-1,055.34	243.64	-1,059.59	0.00	0.00	0.00
4,350.00	18.00	167.00	4,185.97	-1,070.39	247.12	-1,074.70	0.00	0.00	0.00
Begin Drop @ 4350.00ft									

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Survey Report

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Well:	NEWBY 27N-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	17.00	167.00	4,233.66	-1,085.04	250.50	-1,089.41	2.00	-2.00	0.00
4,500.00	15.00	167.00	4,329.78	-1,111.90	256.70	-1,116.38	2.00	-2.00	0.00
4,600.00	13.00	167.00	4,426.81	-1,135.47	262.14	-1,140.04	2.00	-2.00	0.00
4,700.00	11.00	167.00	4,524.62	-1,155.73	266.82	-1,160.38	2.00	-2.00	0.00
4,800.00	9.00	167.00	4,623.09	-1,172.65	270.73	-1,177.37	2.00	-2.00	0.00
4,900.00	7.00	167.00	4,722.11	-1,186.21	273.86	-1,190.98	2.00	-2.00	0.00
5,000.00	5.00	167.00	4,821.56	-1,196.39	276.21	-1,201.21	2.00	-2.00	0.00
5,100.00	3.00	167.00	4,921.31	-1,203.19	277.78	-1,208.03	2.00	-2.00	0.00
5,200.00	1.00	167.00	5,021.25	-1,206.59	278.56	-1,211.45	2.00	-2.00	0.00
5,250.00	0.00	0.00	5,071.24	-1,207.01	278.66	-1,211.87	2.00	-2.00	0.00
End Drop @ 5250.00ft									
5,300.00	0.00	0.00	5,121.24	-1,207.01	278.66	-1,211.87	0.00	0.00	0.00
5,400.00	0.00	0.00	5,221.24	-1,207.01	278.66	-1,211.87	0.00	0.00	0.00
5,500.00	0.00	0.00	5,321.24	-1,207.01	278.66	-1,211.87	0.00	0.00	0.00
5,600.00	0.00	0.00	5,421.24	-1,207.01	278.66	-1,211.87	0.00	0.00	0.00
5,700.00	0.00	0.00	5,521.24	-1,207.01	278.66	-1,211.87	0.00	0.00	0.00
5,800.00	0.00	0.00	5,621.24	-1,207.01	278.66	-1,211.87	0.00	0.00	0.00
5,900.00	0.00	0.00	5,721.24	-1,207.01	278.66	-1,211.87	0.00	0.00	0.00
6,000.00	0.00	0.00	5,821.24	-1,207.01	278.66	-1,211.87	0.00	0.00	0.00
6,100.00	0.00	0.00	5,921.24	-1,207.01	278.66	-1,211.87	0.00	0.00	0.00
6,200.00	0.00	0.00	6,021.24	-1,207.01	278.66	-1,211.87	0.00	0.00	0.00
6,300.00	0.00	0.00	6,121.24	-1,207.01	278.66	-1,211.87	0.00	0.00	0.00
6,400.00	0.00	0.00	6,221.24	-1,207.01	278.66	-1,211.87	0.00	0.00	0.00
6,500.00	0.00	0.00	6,321.24	-1,207.01	278.66	-1,211.87	0.00	0.00	0.00
6,600.00	0.00	0.00	6,421.24	-1,207.01	278.66	-1,211.87	0.00	0.00	0.00
6,700.00	0.00	0.00	6,521.24	-1,207.01	278.66	-1,211.87	0.00	0.00	0.00
6,761.87	0.00	0.00	6,583.11	-1,207.01	278.66	-1,211.87	0.00	0.00	0.00
KOP @ 6761.87ft									
6,800.00	3.43	358.96	6,621.22	-1,205.87	278.64	-1,210.73	9.00	9.00	0.00
6,900.00	12.43	358.96	6,720.16	-1,192.09	278.39	-1,196.95	9.00	9.00	0.00
7,000.00	21.43	358.96	6,815.73	-1,163.00	277.87	-1,167.85	9.00	9.00	0.00
7,100.00	30.43	358.96	6,905.57	-1,119.32	277.08	-1,124.17	9.00	9.00	0.00
7,198.10	39.26	358.96	6,986.00	-1,063.33	276.06	-1,068.17	9.00	9.00	0.00
Sharon Springs									
7,200.00	39.43	358.96	6,987.47	-1,062.13	276.04	-1,066.97	9.00	9.00	0.00
7,300.00	48.43	358.96	7,059.41	-992.83	274.79	-997.66	9.00	9.00	0.00
DLS = 9°/100'									
7,341.64	52.18	358.96	7,086.00	-960.81	274.21	-965.62	9.00	9.00	0.00
Niobrara									
7,400.00	57.43	358.96	7,119.62	-913.14	273.35	-917.95	9.00	9.00	0.00
7,456.74	62.54	358.96	7,148.00	-864.03	272.46	-868.83	9.00	9.00	0.00
Nio B									
7,500.00	66.43	358.96	7,166.63	-825.00	271.75	-829.80	9.00	9.00	0.00
7,600.00	75.43	358.96	7,199.26	-730.60	270.05	-735.38	9.00	9.00	0.00

Anadarko

Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well NEWBY 27N-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 27N-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)
7,644.81	79.46	358.96	7,209.00	-686.89	269.26	-691.66	9.00	9.00	0.00
Nio C									
7,700.00	84.43	358.96	7,216.73	-632.26	268.27	-637.03	9.00	9.00	0.00
7,792.37	92.74	358.96	7,219.00	-540.01	266.60	-544.76	9.00	9.00	0.00
End Build @ 7792.37ft - Top of Production									
7,800.00	92.74	358.96	7,218.64	-532.39	266.46	-537.14	0.00	0.00	0.00
7,900.00	92.74	358.96	7,213.85	-432.53	264.66	-437.26	0.00	0.00	0.00
8,000.00	92.74	358.96	7,209.06	-332.66	262.85	-337.37	0.00	0.00	0.00
8,100.00	92.74	358.96	7,204.27	-232.79	261.04	-237.49	0.00	0.00	0.00
8,200.00	92.74	358.96	7,199.48	-132.92	259.24	-137.60	0.00	0.00	0.00
8,300.00	92.74	358.96	7,194.69	-33.05	257.43	-37.72	0.00	0.00	0.00
8,400.00	92.74	358.96	7,189.90	66.82	255.63	62.17	0.00	0.00	0.00
8,500.00	92.74	358.96	7,185.12	166.69	253.82	162.05	0.00	0.00	0.00
8,600.00	92.74	358.96	7,180.33	266.56	252.01	261.94	0.00	0.00	0.00
8,700.00	92.74	358.96	7,175.54	366.43	250.21	361.82	0.00	0.00	0.00
8,800.00	92.74	358.96	7,170.75	466.29	248.40	461.71	0.00	0.00	0.00
8,900.00	92.74	358.96	7,165.96	566.16	246.60	561.59	0.00	0.00	0.00
9,000.00	92.74	358.96	7,161.17	666.03	244.79	661.48	0.00	0.00	0.00
9,100.00	92.74	358.96	7,156.38	765.90	242.98	761.37	0.00	0.00	0.00
9,200.00	92.74	358.96	7,151.59	865.77	241.18	861.25	0.00	0.00	0.00
9,300.00	92.74	358.96	7,146.81	965.64	239.37	961.14	0.00	0.00	0.00
9,400.00	92.74	358.96	7,142.02	1,065.51	237.57	1,061.02	0.00	0.00	0.00
9,500.00	92.74	358.96	7,137.23	1,165.38	235.76	1,160.91	0.00	0.00	0.00
9,600.00	92.74	358.96	7,132.44	1,265.25	233.95	1,260.79	0.00	0.00	0.00
9,700.00	92.74	358.96	7,127.65	1,365.12	232.15	1,360.68	0.00	0.00	0.00
9,800.00	92.74	358.96	7,122.86	1,464.98	230.34	1,460.56	0.00	0.00	0.00
9,900.00	92.74	358.96	7,118.07	1,564.85	228.53	1,560.45	0.00	0.00	0.00
10,000.00	92.74	358.96	7,113.28	1,664.72	226.73	1,660.33	0.00	0.00	0.00
10,100.00	92.74	358.96	7,108.50	1,764.59	224.92	1,760.22	0.00	0.00	0.00
10,200.00	92.74	358.96	7,103.71	1,864.46	223.12	1,860.10	0.00	0.00	0.00
10,300.00	92.74	358.96	7,098.92	1,964.33	221.31	1,959.99	0.00	0.00	0.00
10,400.00	92.74	358.96	7,094.13	2,064.20	219.50	2,059.87	0.00	0.00	0.00
10,500.00	92.74	358.96	7,089.34	2,164.07	217.70	2,159.76	0.00	0.00	0.00
10,600.00	92.74	358.96	7,084.55	2,263.94	215.89	2,259.64	0.00	0.00	0.00
10,700.00	92.74	358.96	7,079.76	2,363.80	214.09	2,359.53	0.00	0.00	0.00
10,800.00	92.74	358.96	7,074.97	2,463.67	212.28	2,459.41	0.00	0.00	0.00
10,900.00	92.74	358.96	7,070.19	2,563.54	210.47	2,559.30	0.00	0.00	0.00
11,000.00	92.74	358.96	7,065.40	2,663.41	208.67	2,659.19	0.00	0.00	0.00
11,100.00	92.74	358.96	7,060.61	2,763.28	206.86	2,759.07	0.00	0.00	0.00
11,200.00	92.74	358.96	7,055.82	2,863.15	205.06	2,858.96	0.00	0.00	0.00
11,300.00	92.74	358.96	7,051.03	2,963.02	203.25	2,958.84	0.00	0.00	0.00
11,400.00	92.74	358.96	7,046.24	3,062.89	201.44	3,058.73	0.00	0.00	0.00
11,500.00	92.74	358.96	7,041.45	3,162.76	199.64	3,158.61	0.00	0.00	0.00
11,600.00	92.74	358.96	7,036.66	3,262.63	197.83	3,258.50	0.00	0.00	0.00

Anadarko

Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well NEWBY 27N-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 27N-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)
11,700.00	92.74	358.96	7,031.88	3,362.49	196.03	3,358.38	0.00	0.00	0.00
11,800.00	92.74	358.96	7,027.09	3,462.36	194.22	3,458.27	0.00	0.00	0.00
11,900.00	92.74	358.96	7,022.30	3,562.23	192.41	3,558.15	0.00	0.00	0.00
12,000.00	92.74	358.96	7,017.51	3,662.10	190.61	3,658.04	0.00	0.00	0.00
12,100.00	92.74	358.96	7,012.72	3,761.97	188.80	3,757.92	0.00	0.00	0.00
12,200.00	92.74	358.96	7,007.93	3,861.84	187.00	3,857.81	0.00	0.00	0.00
12,300.00	92.74	358.96	7,003.14	3,961.71	185.19	3,957.69	0.00	0.00	0.00
12,400.00	92.74	358.96	6,998.35	4,061.58	183.38	4,057.58	0.00	0.00	0.00
12,500.00	92.74	358.96	6,993.57	4,161.45	181.58	4,157.46	0.00	0.00	0.00
12,595.34	92.74	358.96	6,989.00	4,256.66	179.86	4,252.69	0.00	0.00	0.00
TD Well @ 12595.34ft									

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Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well NEWBY 27N-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 27N-33HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Permit Rev-1	Database:	PLANNING

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
NEWBY 27N-33HZ_460	0.00	0.00	0.00	3,385.61	80.20	14,594,418.90	1,639,548.40	40.185874	-105.003109
- plan misses target center by 3386.56usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Circle (radius 460.00)									
NEWBY 27N-33HZ_460	0.00	0.00	0.00	-588.89	85.05	14,590,444.40	1,639,553.10	40.174960	-105.003092
- plan misses target center by 595.00usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Circle (radius 460.00)									
NEWBY 27N-33HZ_SHL	0.00	0.00	0.00	0.00	0.00	14,591,033.29	1,639,468.06	40.176577	-105.003396
- plan hits target center									
- Point									
NEWBY 27N-33HZ_Han	0.00	0.00	0.00	0.00	0.00	14,591,033.29	1,639,468.06	40.176577	-105.003396
- plan hits target center									
- Polygon									
Point 1		0.00	4,249.09	-383.83		14,595,282.40	1,639,084.40		
Point 2		0.00	4,254.01	76.17		14,595,287.30	1,639,544.40		
Point 3		0.00	4,258.92	536.17		14,595,292.20	1,640,004.40		
Point 4		0.00	3,390.02	540.20		14,594,423.30	1,640,008.40		
Point 5		0.00	2,061.12	546.45		14,593,094.40	1,640,014.60		
Point 6		0.00	738.22	545.70		14,591,771.50	1,640,013.80		
Point 7		0.00	-584.58	545.05		14,590,448.70	1,640,013.10		
Point 8		0.00	-1,424.58	538.09		14,589,608.70	1,640,006.10		
Point 9		0.00	-1,429.39	77.99		14,589,603.90	1,639,546.00		
Point 10		0.00	-1,434.11	-382.01		14,589,599.20	1,639,086.00		
Point 11		0.00	-593.11	-375.05		14,590,440.20	1,639,093.00		
Point 12		0.00	730.09	-374.30		14,591,763.40	1,639,093.80		
Point 13		0.00	2,053.39	-373.55		14,593,086.70	1,639,094.60		
Point 14		0.00	3,381.19	-379.80		14,594,414.50	1,639,088.40		
Point 15		0.00	4,249.09	-383.83		14,595,282.40	1,639,084.40		
3N-R68W-Sec. 33_Secti	0.00	0.00	-15.00	4,419.74	-1,105.66	14,595,453.07	1,638,362.57	40.188714	-105.007355
- plan misses target center by 4555.96usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1		-15.00	251.45	-2,791.30		14,595,704.63	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		14,593,106.62	1,640,878.22		
Point 5		-15.00	-4,995.84	2,515.63		14,590,457.14	1,640,878.01		
Point 6		-15.00	-5,018.95	-136.58		14,590,434.13	1,638,225.80		
Point 7		-15.00	-5,040.96	-2,769.50		14,590,412.22	1,635,592.88		
Point 8		-15.00	-2,394.09	-2,784.98		14,593,059.09	1,635,577.50		
2N-R68W-Sec. 4_Sectio	0.00	0.00	-15.00	4,419.74	-1,105.66	14,595,453.07	1,638,362.57	40.188714	-105.007355
- plan misses target center by 4555.96usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1		-15.00	-5,040.96	-2,769.50		14,590,412.22	1,635,592.88		
Point 2		-15.00	-5,018.95	-136.58		14,590,434.13	1,638,225.80		
Point 3		-15.00	-4,995.84	2,515.63		14,590,457.14	1,640,878.01		
Point 4		-15.00	-7,591.82	2,497.44		14,587,861.16	1,640,859.72		
Point 5		-15.00	-10,216.42	2,462.98		14,585,236.56	1,640,825.16		
Point 6		-15.00	-10,271.92	-193.52		14,585,181.16	1,638,168.66		
Point 7		-15.00	-10,321.42	-2,870.28		14,585,131.77	1,635,491.90		
Point 8		-15.00	-7,652.28	-2,819.20		14,587,800.90	1,635,543.08		
NEWBY 27N-33HZ_BHL	0.00	0.00	6,989.00	4,256.66	179.86	14,595,289.95	1,639,648.08	40.188266	-105.002752
- plan hits target center									
- Point									

Anadarko

Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well NEWBY 27N-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 27N-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	
7,792.37	7,219.00	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			
7,198.10	6,986.00	Sharon Springs			
7,341.64	7,086.00	Niobrara			
7,456.74	7,148.00	Nio B			
7,644.81	7,209.00	Nio C			

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	-182	42	End Nudge @ 1400.00ft	
4350	4186	-1070	247	Begin Drop @ 4350.00ft	
5250	5071	-1207	279	End Drop @ 5250.00ft	
6762	6583	-1207	279	KOP @ 6761.87ft	
7300	7059	-993	275	DLS = 9°/100'	
7792	7219	-540	267	End Build @ 7792.37ft	
12,595	6989	4257	180	TD Well @ 12595.34ft	

Checked By: _____ Approved By: _____ Date: _____