

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
1N-67W-10 JZM 16-10HZ Pad
JZM 1C-3HZ**

Plan A

Plan: Permit Rev-1

Standard Planning Report

20 August, 2015

Project: WELD-NAD83-UTMFT13N

Site: 1N-67W-10 JZM 16-10HZ Pad

Well: JZM 1C-3HZ

Wellbore: Plan A

Design: Permit Rev-1

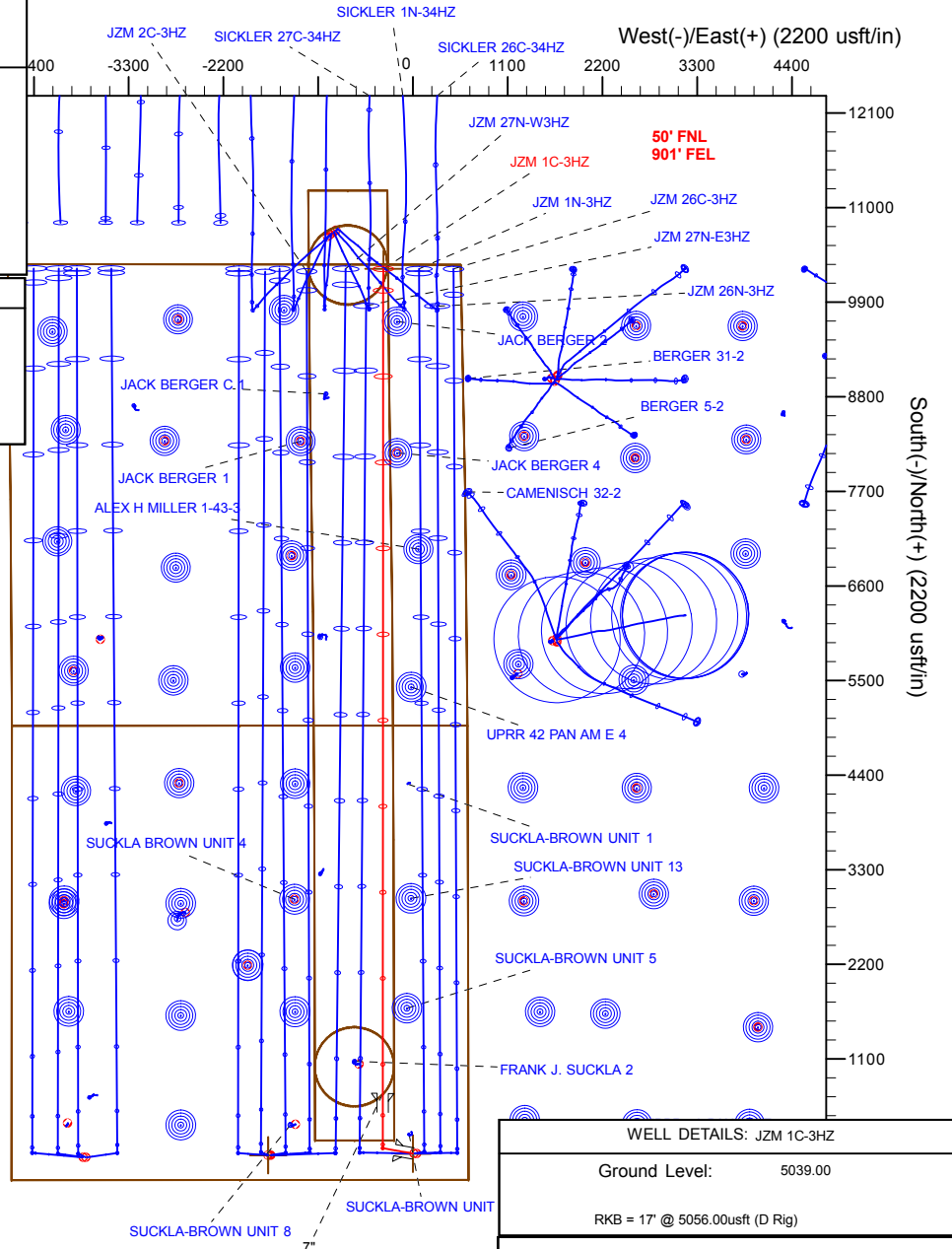
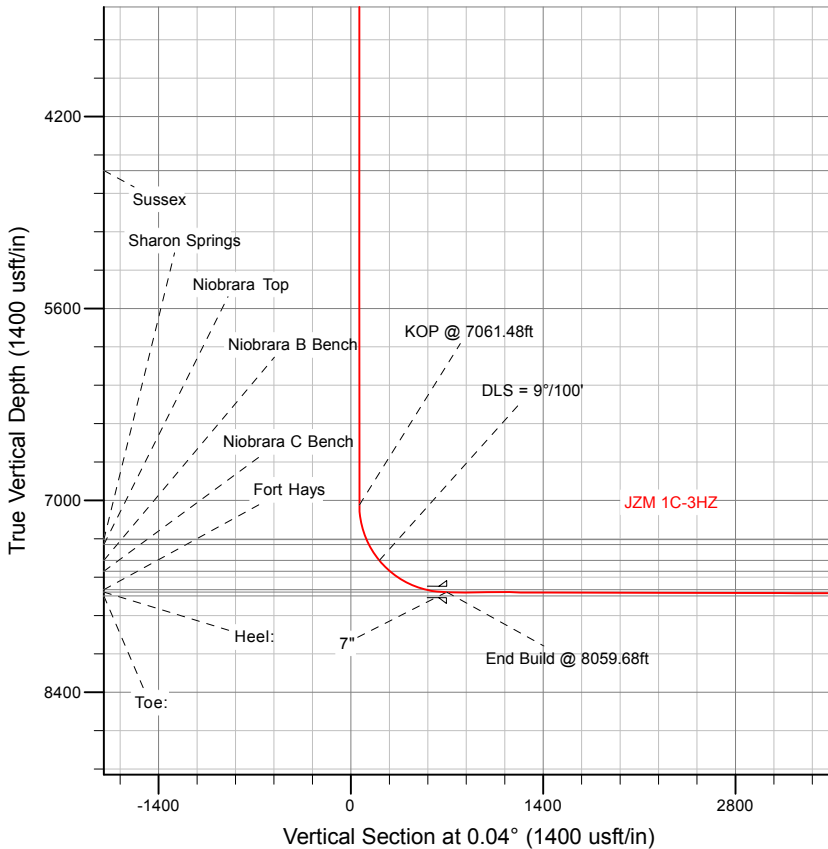
US ROCKIES WATTENBERG PLANNING

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	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	916.67	10.00	280.00	913.29	10.08	-57.15	1.50	280.00	10.04	
4	2376.67	10.00	280.00	2351.11	54.10	-306.82	0.00	0.00	53.89	
5	2876.67	0.00	0.00	2848.57	61.66	-349.68	2.00	180.00	61.41	
6	7061.48	0.00	0.00	7033.38	61.66	-349.68	0.00	0.00	61.41	
7	8059.68	89.84	0.04	7670.00	696.49	-349.29	9.00	0.04	696.24	
8	17650.35	89.84	0.04	7697.00	10287.11	-343.34	0.00	0.00	10286.87	JZM 1C-3HZ_TOE

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
JZM 1C-3HZ_SHL	0.00	0.00	0.00	40.059121	-104.869661	Point
JZM 1C-3HZ_TOE	7697.00	10287.11	-343.34	40.087371	-104.870889	Point



WELL DETAILS: JZM 1C-3HZ

Ground Level: 5039.00

RKB = 17' @ 5056.00usft (D Rig)

Plan: Permit Rev-1 (JZM 1C-3HZ/Plan A)

Created By: Clint Eshelman

Date: 8/20/2015

Reviewed: _____

Date: _____

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JZM 1C-3HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5056.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5056.00usft (D Rig)
Site:	1N-67W-10 JZM 16-10HZ Pad	North Reference:	True
Well:	JZM 1C-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

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 1N-67W-10 JZM 16-10HZ Pad			
Site Position:		Northing:	14,548,288.94 usft
From:	Lat/Long	Easting:	1,676,856.79 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	40.059122
		Longitude:	-104.869768
		Grid Convergence:	0.08 °

Well JZM 1C-3HZ			
Well Position	+N/-S	-0.36 usft	Northing: 14,548,288.62 usft
	+E/-W	29.94 usft	Easting: 1,676,886.73 usft
Position Uncertainty		3.28 usft	Wellhead Elevation: 0.00 usft
			Latitude: 40.059121
			Longitude: -104.869661
			Ground Level: 5,039.00 usft

Wellbore Plan A					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/19/2015	8.33	66.61	52,500

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	0.04

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	
916.67	10.00	280.00	913.29	10.08	-57.15	1.50	1.50	0.00	280.00	
2,376.67	10.00	280.00	2,351.11	54.10	-306.82	0.00	0.00	0.00	0.00	
2,876.67	0.00	0.00	2,848.57	61.66	-349.68	2.00	-2.00	0.00	180.00	
7,061.48	0.00	0.00	7,033.38	61.66	-349.68	0.00	0.00	0.00	0.00	
8,059.68	89.84	0.04	7,670.00	696.49	-349.29	9.00	9.00	0.00	0.04	
17,650.35	89.84	0.04	7,697.00	10,287.11	-343.34	0.00	0.00	0.00	0.00	JZM 1C-3HZ_TOE

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JZM 1C-3HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5056.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5056.00usft (D Rig)
Site:	1N-67W-10 JZM 16-10HZ Pad	North Reference:	True
Well:	JZM 1C-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

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	0.00
100.00	0.00	0.00	100.00	0.00	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	0.00
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 250.00ft										
300.00	0.75	280.00	300.00	0.06	-0.32	0.06	1.50	1.50	0.00	
400.00	2.25	280.00	399.96	0.51	-2.90	0.51	1.50	1.50	0.00	
500.00	3.75	280.00	499.82	1.42	-8.05	1.41	1.50	1.50	0.00	
600.00	5.25	280.00	599.51	2.78	-15.78	2.77	1.50	1.50	0.00	
700.00	6.75	280.00	698.96	4.60	-26.07	4.58	1.50	1.50	0.00	
800.00	8.25	280.00	798.10	6.86	-38.93	6.84	1.50	1.50	0.00	
900.00	9.75	280.00	896.87	9.58	-54.33	9.54	1.50	1.50	0.00	
916.67	10.00	280.00	913.29	10.08	-57.15	10.04	1.50	1.50	0.00	
End Nudge @ 916.67ft										
1,000.00	10.00	280.00	995.35	12.59	-71.40	12.54	0.00	0.00	0.00	
1,100.00	10.00	280.00	1,093.84	15.60	-88.50	15.54	0.00	0.00	0.00	
1,200.00	10.00	280.00	1,192.32	18.62	-105.60	18.55	0.00	0.00	0.00	
1,300.00	10.00	280.00	1,290.80	21.64	-122.70	21.55	0.00	0.00	0.00	
1,359.10	10.00	280.00	1,349.00	23.42	-132.81	23.33	0.00	0.00	0.00	
Fox Hills										
1,400.00	10.00	280.00	1,389.28	24.65	-139.80	24.55	0.00	0.00	0.00	
1,500.00	10.00	280.00	1,487.76	27.67	-156.90	27.56	0.00	0.00	0.00	
1,600.00	10.00	280.00	1,586.24	30.68	-174.01	30.56	0.00	0.00	0.00	
1,700.00	10.00	280.00	1,684.72	33.70	-191.11	33.56	0.00	0.00	0.00	
1,800.00	10.00	280.00	1,783.20	36.71	-208.21	36.57	0.00	0.00	0.00	
1,817.06	10.00	280.00	1,800.00	37.23	-211.12	37.08	0.00	0.00	0.00	
9 5/8"										
1,900.00	10.00	280.00	1,881.68	39.73	-225.31	39.57	0.00	0.00	0.00	
2,000.00	10.00	280.00	1,980.16	42.74	-242.41	42.57	0.00	0.00	0.00	
2,100.00	10.00	280.00	2,078.64	45.76	-259.51	45.58	0.00	0.00	0.00	
2,200.00	10.00	280.00	2,177.12	48.77	-276.61	48.58	0.00	0.00	0.00	
2,300.00	10.00	280.00	2,275.60	51.79	-293.71	51.58	0.00	0.00	0.00	
2,376.67	10.00	280.00	2,351.11	54.10	-306.82	53.89	0.00	0.00	0.00	
Begin Drop @ 2376.67ft										
2,400.00	9.53	280.00	2,374.10	54.79	-310.72	54.57	2.00	-2.00	0.00	
2,500.00	7.53	280.00	2,472.99	57.37	-325.33	57.14	2.00	-2.00	0.00	
2,600.00	5.53	280.00	2,572.34	59.34	-336.54	59.11	2.00	-2.00	0.00	
2,700.00	3.53	280.00	2,672.02	60.71	-344.32	60.47	2.00	-2.00	0.00	
2,800.00	1.53	280.00	2,771.91	61.48	-348.67	61.24	2.00	-2.00	0.00	
2,876.67	0.00	0.00	2,848.58	61.66	-349.68	61.41	2.00	-2.00	0.00	
End Drop @ 2876.67ft										
2,900.00	0.00	0.00	2,871.91	61.66	-349.68	61.41	0.00	0.00	0.00	
3,000.00	0.00	0.00	2,971.91	61.66	-349.68	61.41	0.00	0.00	0.00	
3,100.00	0.00	0.00	3,071.91	61.66	-349.68	61.41	0.00	0.00	0.00	
3,200.00	0.00	0.00	3,171.91	61.66	-349.68	61.41	0.00	0.00	0.00	
3,300.00	0.00	0.00	3,271.91	61.66	-349.68	61.41	0.00	0.00	0.00	
3,400.00	0.00	0.00	3,371.91	61.66	-349.68	61.41	0.00	0.00	0.00	
3,500.00	0.00	0.00	3,471.91	61.66	-349.68	61.41	0.00	0.00	0.00	
3,600.00	0.00	0.00	3,571.91	61.66	-349.68	61.41	0.00	0.00	0.00	
3,700.00	0.00	0.00	3,671.91	61.66	-349.68	61.41	0.00	0.00	0.00	
3,800.00	0.00	0.00	3,771.91	61.66	-349.68	61.41	0.00	0.00	0.00	
3,900.00	0.00	0.00	3,871.91	61.66	-349.68	61.41	0.00	0.00	0.00	
4,000.00	0.00	0.00	3,971.91	61.66	-349.68	61.41	0.00	0.00	0.00	

Anadarko Planning Report

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Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5056.00usft (D Rig)
Site:	1N-67W-10 JZM 16-10HZ Pad	North Reference:	True
Well:	JZM 1C-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

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)
4,100.00	0.00	0.00	4,071.91	61.66	-349.68	61.41	0.00	0.00	0.00
4,200.00	0.00	0.00	4,171.91	61.66	-349.68	61.41	0.00	0.00	0.00
4,300.00	0.00	0.00	4,271.91	61.66	-349.68	61.41	0.00	0.00	0.00
4,400.00	0.00	0.00	4,371.91	61.66	-349.68	61.41	0.00	0.00	0.00
4,500.00	0.00	0.00	4,471.91	61.66	-349.68	61.41	0.00	0.00	0.00
4,600.00	0.00	0.00	4,571.91	61.66	-349.68	61.41	0.00	0.00	0.00
4,623.09	0.00	0.00	4,595.00	61.66	-349.68	61.41	0.00	0.00	0.00
Sussex									
4,700.00	0.00	0.00	4,671.91	61.66	-349.68	61.41	0.00	0.00	0.00
4,800.00	0.00	0.00	4,771.91	61.66	-349.68	61.41	0.00	0.00	0.00
4,900.00	0.00	0.00	4,871.91	61.66	-349.68	61.41	0.00	0.00	0.00
5,000.00	0.00	0.00	4,971.91	61.66	-349.68	61.41	0.00	0.00	0.00
5,100.00	0.00	0.00	5,071.91	61.66	-349.68	61.41	0.00	0.00	0.00
5,200.00	0.00	0.00	5,171.91	61.66	-349.68	61.41	0.00	0.00	0.00
5,300.00	0.00	0.00	5,271.91	61.66	-349.68	61.41	0.00	0.00	0.00
5,400.00	0.00	0.00	5,371.91	61.66	-349.68	61.41	0.00	0.00	0.00
5,500.00	0.00	0.00	5,471.91	61.66	-349.68	61.41	0.00	0.00	0.00
5,600.00	0.00	0.00	5,571.91	61.66	-349.68	61.41	0.00	0.00	0.00
5,700.00	0.00	0.00	5,671.91	61.66	-349.68	61.41	0.00	0.00	0.00
5,800.00	0.00	0.00	5,771.91	61.66	-349.68	61.41	0.00	0.00	0.00
5,900.00	0.00	0.00	5,871.91	61.66	-349.68	61.41	0.00	0.00	0.00
6,000.00	0.00	0.00	5,971.91	61.66	-349.68	61.41	0.00	0.00	0.00
6,100.00	0.00	0.00	6,071.91	61.66	-349.68	61.41	0.00	0.00	0.00
6,200.00	0.00	0.00	6,171.91	61.66	-349.68	61.41	0.00	0.00	0.00
6,300.00	0.00	0.00	6,271.91	61.66	-349.68	61.41	0.00	0.00	0.00
6,400.00	0.00	0.00	6,371.91	61.66	-349.68	61.41	0.00	0.00	0.00
6,500.00	0.00	0.00	6,471.91	61.66	-349.68	61.41	0.00	0.00	0.00
6,600.00	0.00	0.00	6,571.91	61.66	-349.68	61.41	0.00	0.00	0.00
6,700.00	0.00	0.00	6,671.91	61.66	-349.68	61.41	0.00	0.00	0.00
6,800.00	0.00	0.00	6,771.91	61.66	-349.68	61.41	0.00	0.00	0.00
6,900.00	0.00	0.00	6,871.91	61.66	-349.68	61.41	0.00	0.00	0.00
7,000.00	0.00	0.00	6,971.91	61.66	-349.68	61.41	0.00	0.00	0.00
7,061.48	0.00	0.00	7,033.39	61.66	-349.68	61.41	0.00	0.00	0.00
KOP @ 7061.48ft									
7,100.00	3.47	0.04	7,071.88	62.82	-349.68	62.58	9.00	9.00	0.00
7,200.00	12.47	0.04	7,170.81	76.67	-349.68	76.43	9.00	9.00	0.00
7,300.00	21.47	0.04	7,266.36	105.82	-349.66	105.58	9.00	9.00	0.00
7,320.36	23.30	0.04	7,285.19	113.58	-349.65	113.33	9.00	9.00	0.00
Sharon Springs									
7,361.24	26.98	0.04	7,322.19	130.94	-349.64	130.69	9.00	9.00	0.00
Niobrara Top									
7,400.00	30.47	0.04	7,356.18	149.56	-349.63	149.32	9.00	9.00	0.00
7,500.00	39.47	0.04	7,438.04	206.81	-349.59	206.57	9.00	9.00	0.00
DLS = 9°/100'									
7,500.12	39.47	0.04	7,438.13	206.89	-349.59	206.65	0.00	0.00	0.00
Niobrara B Bench									
7,600.00	48.47	0.04	7,509.94	276.17	-349.55	275.92	9.01	9.01	0.00
7,610.25	49.39	0.04	7,516.67	283.89	-349.55	283.65	9.00	9.00	0.00
Niobrara C Bench									
7,700.00	57.47	0.04	7,570.11	355.91	-349.50	355.67	9.00	9.00	0.00
7,800.00	66.47	0.04	7,617.05	444.09	-349.45	443.85	9.00	9.00	0.00
7,900.00	75.47	0.04	7,649.63	538.53	-349.39	538.28	9.00	9.00	0.00
7,908.34	76.22	0.04	7,651.67	546.61	-349.38	546.37	9.00	9.00	0.00

Anadarko Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JZM 1C-3HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5056.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5056.00usft (D Rig)
Site:	1N-67W-10 JZM 16-10HZ Pad	North Reference:	True
Well:	JZM 1C-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

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)
Fort Hays									
8,000.00	84.47	0.04	7,667.04	636.90	-349.33	636.65	9.00	9.00	0.00
8,059.68	89.84	0.04	7,670.00	696.48	-349.29	696.24	9.00	9.00	0.00
End Build @ 8059.68ft - Heel: - 7"									
8,100.00	89.84	0.04	7,670.11	736.80	-349.27	736.56	0.00	0.00	0.00
8,200.00	89.84	0.04	7,670.39	836.80	-349.20	836.56	0.00	0.00	0.00
8,300.00	89.84	0.04	7,670.68	936.80	-349.14	936.56	0.00	0.00	0.00
8,400.00	89.84	0.04	7,670.96	1,036.80	-349.08	1,036.56	0.00	0.00	0.00
8,500.00	89.84	0.04	7,671.24	1,136.80	-349.02	1,136.56	0.00	0.00	0.00
8,600.00	89.84	0.04	7,671.52	1,236.80	-348.96	1,236.56	0.00	0.00	0.00
8,700.00	89.84	0.04	7,671.80	1,336.80	-348.89	1,336.56	0.00	0.00	0.00
8,800.00	89.84	0.04	7,672.08	1,436.80	-348.83	1,436.55	0.00	0.00	0.00
8,900.00	89.84	0.04	7,672.37	1,536.80	-348.77	1,536.55	0.00	0.00	0.00
9,000.00	89.84	0.04	7,672.65	1,636.80	-348.71	1,636.55	0.00	0.00	0.00
9,100.00	89.84	0.04	7,672.93	1,736.80	-348.65	1,736.55	0.00	0.00	0.00
9,200.00	89.84	0.04	7,673.21	1,836.80	-348.58	1,836.55	0.00	0.00	0.00
9,300.00	89.84	0.04	7,673.49	1,936.80	-348.52	1,936.55	0.00	0.00	0.00
9,400.00	89.84	0.04	7,673.77	2,036.80	-348.46	2,036.55	0.00	0.00	0.00
9,500.00	89.84	0.04	7,674.05	2,136.80	-348.40	2,136.55	0.00	0.00	0.00
9,600.00	89.84	0.04	7,674.34	2,236.80	-348.33	2,236.55	0.00	0.00	0.00
9,700.00	89.84	0.04	7,674.62	2,336.80	-348.27	2,336.55	0.00	0.00	0.00
9,800.00	89.84	0.04	7,674.90	2,436.79	-348.21	2,436.55	0.00	0.00	0.00
9,900.00	89.84	0.04	7,675.18	2,536.79	-348.15	2,536.55	0.00	0.00	0.00
10,000.00	89.84	0.04	7,675.46	2,636.79	-348.09	2,636.55	0.00	0.00	0.00
10,100.00	89.84	0.04	7,675.74	2,736.79	-348.02	2,736.55	0.00	0.00	0.00
10,200.00	89.84	0.04	7,676.02	2,836.79	-347.96	2,836.55	0.00	0.00	0.00
10,300.00	89.84	0.04	7,676.31	2,936.79	-347.90	2,936.55	0.00	0.00	0.00
10,400.00	89.84	0.04	7,676.59	3,036.79	-347.84	3,036.55	0.00	0.00	0.00
10,500.00	89.84	0.04	7,676.87	3,136.79	-347.78	3,136.55	0.00	0.00	0.00
10,600.00	89.84	0.04	7,677.15	3,236.79	-347.71	3,236.55	0.00	0.00	0.00
10,700.00	89.84	0.04	7,677.43	3,336.79	-347.65	3,336.55	0.00	0.00	0.00
10,800.00	89.84	0.04	7,677.71	3,436.79	-347.59	3,436.55	0.00	0.00	0.00
10,900.00	89.84	0.04	7,678.00	3,536.79	-347.53	3,536.55	0.00	0.00	0.00
11,000.00	89.84	0.04	7,678.28	3,636.79	-347.47	3,636.55	0.00	0.00	0.00
11,100.00	89.84	0.04	7,678.56	3,736.79	-347.40	3,736.55	0.00	0.00	0.00
11,200.00	89.84	0.04	7,678.84	3,836.79	-347.34	3,836.55	0.00	0.00	0.00
11,300.00	89.84	0.04	7,679.12	3,936.79	-347.28	3,936.55	0.00	0.00	0.00
11,400.00	89.84	0.04	7,679.40	4,036.79	-347.22	4,036.54	0.00	0.00	0.00
11,500.00	89.84	0.04	7,679.68	4,136.79	-347.16	4,136.54	0.00	0.00	0.00
11,600.00	89.84	0.04	7,679.97	4,236.79	-347.09	4,236.54	0.00	0.00	0.00
11,700.00	89.84	0.04	7,680.25	4,336.79	-347.03	4,336.54	0.00	0.00	0.00
11,800.00	89.84	0.04	7,680.53	4,436.79	-346.97	4,436.54	0.00	0.00	0.00
11,900.00	89.84	0.04	7,680.81	4,536.79	-346.91	4,536.54	0.00	0.00	0.00
12,000.00	89.84	0.04	7,681.09	4,636.79	-346.85	4,636.54	0.00	0.00	0.00
12,100.00	89.84	0.04	7,681.37	4,736.79	-346.78	4,736.54	0.00	0.00	0.00
12,200.00	89.84	0.04	7,681.66	4,836.78	-346.72	4,836.54	0.00	0.00	0.00
12,300.00	89.84	0.04	7,681.94	4,936.78	-346.66	4,936.54	0.00	0.00	0.00
12,400.00	89.84	0.04	7,682.22	5,036.78	-346.60	5,036.54	0.00	0.00	0.00
12,500.00	89.84	0.04	7,682.50	5,136.78	-346.54	5,136.54	0.00	0.00	0.00
12,600.00	89.84	0.04	7,682.78	5,236.78	-346.47	5,236.54	0.00	0.00	0.00
12,700.00	89.84	0.04	7,683.06	5,336.78	-346.41	5,336.54	0.00	0.00	0.00
12,800.00	89.84	0.04	7,683.34	5,436.78	-346.35	5,436.54	0.00	0.00	0.00
12,900.00	89.84	0.04	7,683.63	5,536.78	-346.29	5,536.54	0.00	0.00	0.00
13,000.00	89.84	0.04	7,683.91	5,636.78	-346.23	5,636.54	0.00	0.00	0.00

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JZM 1C-3HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5056.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5056.00usft (D Rig)
Site:	1N-67W-10 JZM 16-10HZ Pad	North Reference:	True
Well:	JZM 1C-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

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)
13,100.00	89.84	0.04	7,684.19	5,736.78	-346.16	5,736.54	0.00	0.00	0.00
13,200.00	89.84	0.04	7,684.47	5,836.78	-346.10	5,836.54	0.00	0.00	0.00
13,300.00	89.84	0.04	7,684.75	5,936.78	-346.04	5,936.54	0.00	0.00	0.00
13,400.00	89.84	0.04	7,685.03	6,036.78	-345.98	6,036.54	0.00	0.00	0.00
13,500.00	89.84	0.04	7,685.32	6,136.78	-345.92	6,136.54	0.00	0.00	0.00
13,600.00	89.84	0.04	7,685.60	6,236.78	-345.85	6,236.54	0.00	0.00	0.00
13,700.00	89.84	0.04	7,685.88	6,336.78	-345.79	6,336.54	0.00	0.00	0.00
13,800.00	89.84	0.04	7,686.16	6,436.78	-345.73	6,436.54	0.00	0.00	0.00
13,900.00	89.84	0.04	7,686.44	6,536.78	-345.67	6,536.53	0.00	0.00	0.00
14,000.00	89.84	0.04	7,686.72	6,636.78	-345.60	6,636.53	0.00	0.00	0.00
14,100.00	89.84	0.04	7,687.00	6,736.78	-345.54	6,736.53	0.00	0.00	0.00
14,200.00	89.84	0.04	7,687.29	6,836.78	-345.48	6,836.53	0.00	0.00	0.00
14,300.00	89.84	0.04	7,687.57	6,936.78	-345.42	6,936.53	0.00	0.00	0.00
14,400.00	89.84	0.04	7,687.85	7,036.78	-345.36	7,036.53	0.00	0.00	0.00
14,500.00	89.84	0.04	7,688.13	7,136.78	-345.29	7,136.53	0.00	0.00	0.00
14,600.00	89.84	0.04	7,688.41	7,236.77	-345.23	7,236.53	0.00	0.00	0.00
14,700.00	89.84	0.04	7,688.69	7,336.77	-345.17	7,336.53	0.00	0.00	0.00
14,800.00	89.84	0.04	7,688.98	7,436.77	-345.11	7,436.53	0.00	0.00	0.00
14,900.00	89.84	0.04	7,689.26	7,536.77	-345.05	7,536.53	0.00	0.00	0.00
15,000.00	89.84	0.04	7,689.54	7,636.77	-344.98	7,636.53	0.00	0.00	0.00
15,100.00	89.84	0.04	7,689.82	7,736.77	-344.92	7,736.53	0.00	0.00	0.00
15,200.00	89.84	0.04	7,690.10	7,836.77	-344.86	7,836.53	0.00	0.00	0.00
15,300.00	89.84	0.04	7,690.38	7,936.77	-344.80	7,936.53	0.00	0.00	0.00
15,400.00	89.84	0.04	7,690.66	8,036.77	-344.74	8,036.53	0.00	0.00	0.00
15,500.00	89.84	0.04	7,690.95	8,136.77	-344.67	8,136.53	0.00	0.00	0.00
15,600.00	89.84	0.04	7,691.23	8,236.77	-344.61	8,236.53	0.00	0.00	0.00
15,700.00	89.84	0.04	7,691.51	8,336.77	-344.55	8,336.53	0.00	0.00	0.00
15,800.00	89.84	0.04	7,691.79	8,436.77	-344.49	8,436.53	0.00	0.00	0.00
15,900.00	89.84	0.04	7,692.07	8,536.77	-344.43	8,536.53	0.00	0.00	0.00
16,000.00	89.84	0.04	7,692.35	8,636.77	-344.36	8,636.53	0.00	0.00	0.00
16,100.00	89.84	0.04	7,692.64	8,736.77	-344.30	8,736.53	0.00	0.00	0.00
16,200.00	89.84	0.04	7,692.92	8,836.77	-344.24	8,836.53	0.00	0.00	0.00
16,300.00	89.84	0.04	7,693.20	8,936.77	-344.18	8,936.53	0.00	0.00	0.00
16,400.00	89.84	0.04	7,693.48	9,036.77	-344.12	9,036.52	0.00	0.00	0.00
16,500.00	89.84	0.04	7,693.76	9,136.77	-344.05	9,136.52	0.00	0.00	0.00
16,600.00	89.84	0.04	7,694.04	9,236.77	-343.99	9,236.52	0.00	0.00	0.00
16,700.00	89.84	0.04	7,694.32	9,336.77	-343.93	9,336.52	0.00	0.00	0.00
16,800.00	89.84	0.04	7,694.61	9,436.77	-343.87	9,436.52	0.00	0.00	0.00
16,900.00	89.84	0.04	7,694.89	9,536.77	-343.81	9,536.52	0.00	0.00	0.00
17,000.00	89.84	0.04	7,695.17	9,636.76	-343.74	9,636.52	0.00	0.00	0.00
17,100.00	89.84	0.04	7,695.45	9,736.76	-343.68	9,736.52	0.00	0.00	0.00
17,200.00	89.84	0.04	7,695.73	9,836.76	-343.62	9,836.52	0.00	0.00	0.00
17,300.00	89.84	0.04	7,696.01	9,936.76	-343.56	9,936.52	0.00	0.00	0.00
17,400.00	89.84	0.04	7,696.30	10,036.76	-343.50	10,036.52	0.00	0.00	0.00
17,500.00	89.84	0.04	7,696.58	10,136.76	-343.43	10,136.52	0.00	0.00	0.00
17,600.00	89.84	0.04	7,696.86	10,236.76	-343.37	10,236.52	0.00	0.00	0.00
17,650.34	89.84	0.04	7,697.00	10,287.10	-343.34	10,286.86	0.00	0.00	0.00
Toe:									
17,650.35	89.84	0.04	7,697.00	10,287.11	-343.34	10,286.87	0.00	0.00	0.00
TD Well @ 17650.35ft									

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JZM 1C-3HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5056.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5056.00usft (D Rig)
Site:	1N-67W-10 JZM 16-10HZ Pad	North Reference:	True
Well:	JZM 1C-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

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)			
JZM 1C-3HZ_Hardline B	0.00	0.00	0.00	0.00	0.00	14,548,288.62	1,676,886.73	40.059121	-104.869661	
- plan hits target center										
- Polygon										
Point 1			0.00	11,198.66	-1,215.95	14,559,485.49	1,675,654.39			
Point 2			0.00	11,198.41	-755.95	14,559,485.91	1,676,114.39			
Point 3			0.00	11,198.17	-295.95	14,559,486.35	1,676,574.39			
Point 4			0.00	8,980.88	-275.74	14,557,269.09	1,676,597.84			
Point 5			0.00	6,300.79	-239.69	14,554,589.05	1,676,637.82			
Point 6			0.00	3,653.58	-222.87	14,551,941.87	1,676,658.51			
Point 7			0.00	1,012.48	-218.56	14,549,300.78	1,676,666.69			
Point 8			0.00	151.19	-217.12	14,548,439.49	1,676,669.39			
Point 9			0.00	150.98	-677.12	14,548,438.61	1,676,209.39			
Point 10			0.00	150.78	-1,137.12	14,548,437.74	1,675,749.39			
Point 11			0.00	1,011.48	-1,138.56	14,549,298.43	1,675,746.69			
Point 12			0.00	3,653.03	-1,142.87	14,551,939.97	1,675,738.51			
Point 13			0.00	6,307.75	-1,159.83	14,554,594.67	1,675,717.67			
Point 14			0.00	8,988.72	-1,195.98	14,557,275.58	1,675,677.59			
Point 15			0.00	11,198.66	-1,215.95	14,559,485.49	1,675,654.39			
JZM 1C-3HZ_SHL	0.00	0.00	0.00	0.00	0.00	14,548,288.62	1,676,886.73	40.059121	-104.869661	
- plan hits target center										
- Point										
JZM 1C-3HZ_460' Polyg	0.00	0.00	0.00	0.00	0.00	14,548,288.62	1,676,886.73	40.059121	-104.869661	
- plan hits target center										
- Polygon										
Point 1			0.00	10,795.22	-756.52	14,559,082.72	1,676,114.41			
Point 2			0.00	10,794.79	-737.39	14,559,082.32	1,676,133.54			
Point 3			0.00	10,793.58	-718.29	14,559,081.14	1,676,152.64			
Point 4			0.00	10,791.56	-699.25	14,559,079.15	1,676,171.68			
Point 5			0.00	10,788.75	-680.32	14,559,076.36	1,676,190.62			
Point 6			0.00	10,785.16	-661.52	14,559,072.80	1,676,209.42			
Point 7			0.00	10,780.80	-642.89	14,559,068.47	1,676,228.06			
Point 8			0.00	10,775.65	-624.45	14,559,063.35	1,676,246.50			
Point 9			0.00	10,769.75	-606.25	14,559,057.47	1,676,264.71			
Point 10			0.00	10,763.10	-588.30	14,559,050.85	1,676,282.67			
Point 11			0.00	10,755.70	-570.65	14,559,043.48	1,676,300.33			
Point 12			0.00	10,747.57	-553.32	14,559,035.37	1,676,317.68			
Point 13			0.00	10,738.74	-536.34	14,559,026.57	1,676,334.67			
Point 14			0.00	10,729.20	-519.74	14,559,017.05	1,676,351.28			
Point 15			0.00	10,718.98	-503.56	14,559,006.85	1,676,367.48			
Point 16			0.00	10,708.10	-487.82	14,558,996.00	1,676,383.23			
Point 17			0.00	10,696.57	-472.54	14,558,984.49	1,676,398.53			
Point 18			0.00	10,684.41	-457.76	14,558,972.35	1,676,413.33			
Point 19			0.00	10,671.65	-443.49	14,558,959.61	1,676,427.62			
Point 20			0.00	10,658.31	-429.77	14,558,946.29	1,676,441.36			
Point 21			0.00	10,644.41	-416.61	14,558,932.41	1,676,454.54			
Point 22			0.00	10,629.98	-404.04	14,558,918.00	1,676,467.13			
Point 23			0.00	10,615.04	-392.08	14,558,903.08	1,676,479.11			
Point 24			0.00	10,599.60	-380.76	14,558,887.65	1,676,490.45			
Point 25			0.00	10,583.72	-370.09	14,558,871.79	1,676,501.15			
Point 26			0.00	10,567.40	-360.09	14,558,855.48	1,676,511.17			
Point 27			0.00	10,550.68	-350.78	14,558,838.78	1,676,520.50			
Point 28			0.00	10,533.59	-342.16	14,558,821.70	1,676,529.15			
Point 29			0.00	10,516.14	-334.27	14,558,804.26	1,676,537.06			
Point 30			0.00	10,498.40	-327.11	14,558,786.53	1,676,544.25			
Point 31			0.00	10,480.36	-320.70	14,558,768.50	1,676,550.69			
Point 32			0.00	10,462.09	-315.04	14,558,750.24	1,676,556.37			
Point 33			0.00	10,443.58	-310.14	14,558,731.74	1,676,561.30			

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JZM 1C-3HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5056.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5056.00usft (D Rig)
Site:	1N-67W-10 JZM 16-10HZ Pad	North Reference:	True
Well:	JZM 1C-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Point 34	0.00	10,424.89	-306.02	14,558,713.05	1,676,565.45
Point 35	0.00	10,406.05	-302.68	14,558,694.22	1,676,568.82
Point 36	0.00	10,387.07	-300.13	14,558,675.24	1,676,571.39
Point 37	0.00	10,368.02	-298.36	14,558,656.19	1,676,573.19
Point 38	0.00	10,348.90	-297.40	14,558,637.08	1,676,574.18
Point 39	0.00	10,329.76	-297.23	14,558,617.94	1,676,574.38
Point 40	0.00	10,310.63	-297.86	14,558,598.81	1,676,573.78
Point 41	0.00	10,291.55	-299.28	14,558,579.72	1,676,572.38
Point 42	0.00	10,272.54	-301.48	14,558,560.71	1,676,570.21
Point 43	0.00	10,253.63	-304.49	14,558,541.80	1,676,567.23
Point 44	0.00	10,234.88	-308.28	14,558,523.04	1,676,563.47
Point 45	0.00	10,216.28	-312.84	14,558,504.43	1,676,558.93
Point 46	0.00	10,197.90	-318.17	14,558,486.05	1,676,553.63
Point 47	0.00	10,179.76	-324.26	14,558,467.90	1,676,547.57
Point 48	0.00	10,161.89	-331.11	14,558,450.02	1,676,540.74
Point 49	0.00	10,144.31	-338.68	14,558,432.43	1,676,533.20
Point 50	0.00	10,127.06	-346.99	14,558,415.16	1,676,524.91
Point 51	0.00	10,110.19	-356.00	14,558,398.28	1,676,515.93
Point 52	0.00	10,093.69	-365.71	14,558,381.77	1,676,506.24
Point 53	0.00	10,077.61	-376.10	14,558,365.67	1,676,495.88
Point 54	0.00	10,061.98	-387.14	14,558,350.02	1,676,484.86
Point 55	0.00	10,046.83	-398.83	14,558,334.86	1,676,473.19
Point 56	0.00	10,032.17	-411.14	14,558,320.18	1,676,460.90
Point 57	0.00	10,018.03	-424.05	14,558,306.02	1,676,448.01
Point 58	0.00	10,004.44	-437.53	14,558,292.41	1,676,434.55
Point 59	0.00	9,991.43	-451.57	14,558,279.38	1,676,420.53
Point 60	0.00	9,979.02	-466.12	14,558,266.95	1,676,406.00
Point 61	0.00	9,967.22	-481.20	14,558,255.13	1,676,390.94
Point 62	0.00	9,956.06	-496.75	14,558,243.94	1,676,375.40
Point 63	0.00	9,945.55	-512.74	14,558,233.41	1,676,359.43
Point 64	0.00	9,935.72	-529.17	14,558,223.56	1,676,343.01
Point 65	0.00	9,926.58	-545.98	14,558,214.39	1,676,326.22
Point 66	0.00	9,918.15	-563.16	14,558,205.94	1,676,309.05
Point 67	0.00	9,910.43	-580.67	14,558,198.19	1,676,291.55
Point 68	0.00	9,903.46	-598.50	14,558,191.20	1,676,273.73
Point 69	0.00	9,897.24	-616.60	14,558,184.95	1,676,255.64
Point 70	0.00	9,891.76	-634.94	14,558,179.44	1,676,237.31
Point 71	0.00	9,887.06	-653.50	14,558,174.71	1,676,218.76
Point 72	0.00	9,883.14	-672.22	14,558,170.77	1,676,200.04
Point 73	0.00	9,880.00	-691.11	14,558,167.60	1,676,181.16
Point 74	0.00	9,877.64	-710.10	14,558,165.21	1,676,162.17
Point 75	0.00	9,876.07	-729.17	14,558,163.61	1,676,143.10
Point 76	0.00	9,875.31	-748.30	14,558,162.83	1,676,123.97
Point 77	0.00	9,875.34	-767.44	14,558,162.83	1,676,104.83
Point 78	0.00	9,876.16	-786.56	14,558,163.62	1,676,085.71
Point 79	0.00	9,877.78	-805.63	14,558,165.21	1,676,066.64
Point 80	0.00	9,880.19	-824.62	14,558,167.59	1,676,047.65
Point 81	0.00	9,883.39	-843.48	14,558,170.77	1,676,028.78
Point 82	0.00	9,887.37	-862.21	14,558,174.72	1,676,010.05
Point 83	0.00	9,892.12	-880.75	14,558,179.44	1,675,991.50
Point 84	0.00	9,897.65	-899.07	14,558,184.95	1,675,973.17
Point 85	0.00	9,903.93	-917.15	14,558,191.20	1,675,955.08
Point 86	0.00	9,910.95	-934.95	14,558,198.19	1,675,937.27
Point 87	0.00	9,918.72	-952.45	14,558,205.94	1,675,919.76
Point 88	0.00	9,927.20	-969.61	14,558,214.39	1,675,902.59
Point 89	0.00	9,936.39	-986.40	14,558,223.56	1,675,885.78
Point 90	0.00	9,946.27	-1,002.79	14,558,233.41	1,675,869.38
Point 91	0.00	9,956.83	-1,018.76	14,558,243.95	1,675,853.39
Point 92	0.00	9,968.03	-1,034.27	14,558,255.13	1,675,837.87
Point 93	0.00	9,979.87	-1,049.30	14,558,266.95	1,675,822.82
Point 94	0.00	9,992.33	-1,063.83	14,558,279.38	1,675,808.27
Point 95	0.00	10,005.38	-1,077.84	14,558,292.41	1,675,794.24
Point 96	0.00	10,019.01	-1,091.28	14,558,306.02	1,675,780.78
Point 97	0.00	10,033.18	-1,104.14	14,558,320.17	1,675,767.90

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JZM 1C-3HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5056.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5056.00usft (D Rig)
Site:	1N-67W-10 JZM 16-10HZ Pad	North Reference:	True
Well:	JZM 1C-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Point 98	0.00	10,047.88	-1,116.40	14,558,334.86	1,675,755.62				
Point 99	0.00	10,063.07	-1,128.05	14,558,350.03	1,675,743.95				
Point 100	0.00	10,078.73	-1,139.05	14,558,365.67	1,675,732.93				
Point 101	0.00	10,094.84	-1,149.38	14,558,381.77	1,675,722.57				
Point 102	0.00	10,111.36	-1,159.05	14,558,398.27	1,675,712.88				
Point 103	0.00	10,128.26	-1,168.02	14,558,415.16	1,675,703.88				
Point 104	0.00	10,145.54	-1,176.27	14,558,432.43	1,675,695.61				
Point 105	0.00	10,163.14	-1,183.79	14,558,450.02	1,675,688.06				
Point 106	0.00	10,181.03	-1,190.58	14,558,467.90	1,675,681.25				
Point 107	0.00	10,199.19	-1,196.62	14,558,486.05	1,675,675.18				
Point 108	0.00	10,217.58	-1,201.90	14,558,504.43	1,675,669.87				
Point 109	0.00	10,236.19	-1,206.41	14,558,523.03	1,675,665.33				
Point 110	0.00	10,254.96	-1,210.14	14,558,541.80	1,675,661.58				
Point 111	0.00	10,273.87	-1,213.08	14,558,560.71	1,675,658.61				
Point 112	0.00	10,292.89	-1,215.24	14,558,579.72	1,675,656.42				
Point 113	0.00	10,311.98	-1,216.61	14,558,598.81	1,675,655.02				
Point 114	0.00	10,331.11	-1,217.18	14,558,617.94	1,675,654.43				
Point 115	0.00	10,350.25	-1,216.95	14,558,637.08	1,675,654.63				
Point 116	0.00	10,369.36	-1,215.92	14,558,656.19	1,675,655.63				
Point 117	0.00	10,388.41	-1,214.11	14,558,675.24	1,675,657.41				
Point 118	0.00	10,407.38	-1,211.50	14,558,694.22	1,675,659.99				
Point 119	0.00	10,426.21	-1,208.11	14,558,713.05	1,675,663.36				
Point 120	0.00	10,444.89	-1,203.93	14,558,731.74	1,675,667.51				
Point 121	0.00	10,463.38	-1,198.98	14,558,750.24	1,675,672.43				
Point 122	0.00	10,481.64	-1,193.27	14,558,768.50	1,675,678.12				
Point 123	0.00	10,499.66	-1,186.80	14,558,786.53	1,675,684.56				
Point 124	0.00	10,517.38	-1,179.59	14,558,804.26	1,675,691.74				
Point 125	0.00	10,534.80	-1,171.65	14,558,821.70	1,675,699.66				
Point 126	0.00	10,551.87	-1,162.99	14,558,838.78	1,675,708.29				
Point 127	0.00	10,568.56	-1,153.62	14,558,855.48	1,675,717.64				
Point 128	0.00	10,584.85	-1,143.57	14,558,871.79	1,675,727.66				
Point 129	0.00	10,600.70	-1,132.85	14,558,887.65	1,675,738.36				
Point 130	0.00	10,616.11	-1,121.48	14,558,903.08	1,675,749.71				
Point 131	0.00	10,631.01	-1,109.49	14,558,918.00	1,675,761.68				
Point 132	0.00	10,645.41	-1,096.88	14,558,932.41	1,675,774.27				
Point 133	0.00	10,659.27	-1,083.68	14,558,946.29	1,675,787.45				
Point 134	0.00	10,672.57	-1,069.92	14,558,959.61	1,675,801.19				
Point 135	0.00	10,685.29	-1,055.61	14,558,972.36	1,675,815.48				
Point 136	0.00	10,697.40	-1,040.79	14,558,984.49	1,675,830.28				
Point 137	0.00	10,708.89	-1,025.48	14,558,996.00	1,675,845.57				
Point 138	0.00	10,719.72	-1,009.70	14,559,006.85	1,675,861.34				
Point 139	0.00	10,729.89	-993.49	14,559,017.05	1,675,877.53				
Point 140	0.00	10,739.38	-976.87	14,559,026.56	1,675,894.14				
Point 141	0.00	10,748.17	-959.87	14,559,035.38	1,675,911.13				
Point 142	0.00	10,756.24	-942.52	14,559,043.47	1,675,928.46				
Point 143	0.00	10,763.59	-924.84	14,559,050.85	1,675,946.13				
Point 144	0.00	10,770.19	-906.88	14,559,057.47	1,675,964.08				
Point 145	0.00	10,776.04	-888.65	14,559,063.35	1,675,982.30				
Point 146	0.00	10,781.13	-870.20	14,559,068.47	1,676,000.75				
Point 147	0.00	10,785.44	-851.55	14,559,072.80	1,676,019.39				
Point 148	0.00	10,788.97	-832.74	14,559,076.36	1,676,038.20				
Point 149	0.00	10,791.73	-813.80	14,559,079.15	1,676,057.13				
Point 150	0.00	10,793.69	-794.76	14,559,081.14	1,676,076.17				
Point 151	0.00	10,794.85	-775.66	14,559,082.33	1,676,095.27				
Point 152	0.00	10,795.22	-756.52	14,559,082.72	1,676,114.41				
JZM 1C-3HZ_460' Polyg	0.00	0.00	0.00	0.00	0.00	14,548,288.62	1,676,886.73	40.059121	-104.869661
- plan hits target center									
- Polygon									
Point 1	0.00	1,471.72	-677.89	14,549,759.35	1,676,206.69				
Point 2	0.00	1,471.29	-658.75	14,549,758.95	1,676,225.83				
Point 3	0.00	1,470.07	-639.65	14,549,757.75	1,676,244.93				
Point 4	0.00	1,468.05	-620.61	14,549,755.76	1,676,263.97				
Point 5	0.00	1,465.25	-601.69	14,549,752.99	1,676,282.90				

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JZM 1C-3HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5056.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5056.00usft (D Rig)
Site:	1N-67W-10 JZM 16-10HZ Pad	North Reference:	True
Well:	JZM 1C-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Point 6	0.00	1,461.66	-582.88	14,549,749.43	1,676,301.71
Point 7	0.00	1,457.29	-564.25	14,549,745.08	1,676,320.35
Point 8	0.00	1,452.15	-545.82	14,549,739.97	1,676,338.79
Point 9	0.00	1,446.25	-527.61	14,549,734.10	1,676,357.00
Point 10	0.00	1,439.59	-509.67	14,549,727.46	1,676,374.95
Point 11	0.00	1,432.20	-492.01	14,549,720.10	1,676,392.62
Point 12	0.00	1,424.07	-474.68	14,549,712.00	1,676,409.97
Point 13	0.00	1,415.23	-457.70	14,549,703.18	1,676,426.96
Point 14	0.00	1,405.70	-441.11	14,549,693.67	1,676,443.56
Point 15	0.00	1,395.48	-424.93	14,549,683.48	1,676,459.76
Point 16	0.00	1,384.59	-409.19	14,549,672.61	1,676,475.51
Point 17	0.00	1,373.07	-393.90	14,549,661.11	1,676,490.82
Point 18	0.00	1,360.91	-379.12	14,549,648.98	1,676,505.62
Point 19	0.00	1,348.16	-364.85	14,549,636.25	1,676,519.91
Point 20	0.00	1,334.81	-351.13	14,549,622.92	1,676,533.65
Point 21	0.00	1,320.91	-337.97	14,549,609.04	1,676,546.83
Point 22	0.00	1,306.48	-325.40	14,549,594.62	1,676,559.42
Point 23	0.00	1,291.53	-313.45	14,549,579.69	1,676,571.39
Point 24	0.00	1,276.10	-302.13	14,549,564.28	1,676,582.73
Point 25	0.00	1,260.21	-291.45	14,549,548.40	1,676,593.44
Point 26	0.00	1,243.90	-281.45	14,549,532.11	1,676,603.46
Point 27	0.00	1,227.17	-272.14	14,549,515.39	1,676,612.79
Point 28	0.00	1,210.08	-263.52	14,549,498.31	1,676,621.44
Point 29	0.00	1,192.65	-255.64	14,549,480.90	1,676,629.34
Point 30	0.00	1,174.90	-248.47	14,549,463.16	1,676,636.54
Point 31	0.00	1,156.87	-242.06	14,549,445.14	1,676,642.98
Point 32	0.00	1,138.58	-236.40	14,549,426.85	1,676,648.66
Point 33	0.00	1,120.07	-231.50	14,549,408.35	1,676,653.59
Point 34	0.00	1,101.39	-227.38	14,549,389.68	1,676,657.74
Point 35	0.00	1,082.54	-224.04	14,549,370.83	1,676,661.11
Point 36	0.00	1,063.57	-221.49	14,549,351.87	1,676,663.68
Point 37	0.00	1,044.52	-219.72	14,549,332.82	1,676,665.48
Point 38	0.00	1,025.39	-218.76	14,549,313.69	1,676,666.47
Point 39	0.00	1,006.26	-218.59	14,549,294.56	1,676,666.67
Point 40	0.00	987.14	-219.22	14,549,275.44	1,676,666.07
Point 41	0.00	968.05	-220.64	14,549,256.35	1,676,664.67
Point 42	0.00	949.03	-222.85	14,549,237.32	1,676,662.49
Point 43	0.00	930.13	-225.85	14,549,218.42	1,676,659.52
Point 44	0.00	911.37	-229.64	14,549,199.65	1,676,655.76
Point 45	0.00	892.79	-234.20	14,549,181.07	1,676,651.22
Point 46	0.00	874.40	-239.53	14,549,162.67	1,676,645.92
Point 47	0.00	856.25	-245.63	14,549,144.51	1,676,639.85
Point 48	0.00	838.38	-252.47	14,549,126.63	1,676,633.03
Point 49	0.00	820.80	-260.04	14,549,109.04	1,676,625.49
Point 50	0.00	803.57	-268.35	14,549,091.80	1,676,617.20
Point 51	0.00	786.68	-277.36	14,549,074.90	1,676,608.22
Point 52	0.00	770.18	-287.08	14,549,058.38	1,676,598.52
Point 53	0.00	754.11	-297.46	14,549,042.30	1,676,588.17
Point 54	0.00	738.48	-308.50	14,549,026.65	1,676,577.15
Point 55	0.00	723.32	-320.19	14,549,011.47	1,676,565.48
Point 56	0.00	708.66	-332.50	14,548,996.79	1,676,553.19
Point 57	0.00	694.53	-345.41	14,548,982.65	1,676,540.30
Point 58	0.00	680.95	-358.89	14,548,969.05	1,676,526.84
Point 59	0.00	667.93	-372.93	14,548,956.01	1,676,512.82
Point 60	0.00	655.52	-387.49	14,548,943.57	1,676,498.28
Point 61	0.00	643.72	-402.56	14,548,931.75	1,676,483.23
Point 62	0.00	632.56	-418.11	14,548,920.57	1,676,467.70
Point 63	0.00	622.05	-434.10	14,548,910.04	1,676,451.72
Point 64	0.00	612.21	-450.53	14,548,900.17	1,676,435.30
Point 65	0.00	603.08	-467.34	14,548,891.02	1,676,418.51
Point 66	0.00	594.64	-484.52	14,548,882.55	1,676,401.34
Point 67	0.00	586.94	-502.04	14,548,874.83	1,676,383.83
Point 68	0.00	579.96	-519.86	14,548,867.82	1,676,366.02
Point 69	0.00	573.73	-537.96	14,548,861.56	1,676,347.93

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JZM 1C-3HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5056.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5056.00usft (D Rig)
Site:	1N-67W-10 JZM 16-10HZ Pad	North Reference:	True
Well:	JZM 1C-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Point 70	0.00	568.26	-556.30	14,548,856.07	1,676,329.60
Point 71	0.00	563.57	-574.86	14,548,851.35	1,676,311.05
Point 72	0.00	559.63	-593.58	14,548,847.38	1,676,292.33
Point 73	0.00	556.49	-612.47	14,548,844.21	1,676,273.45
Point 74	0.00	554.14	-631.46	14,548,841.84	1,676,254.46
Point 75	0.00	552.58	-650.53	14,548,840.25	1,676,235.39
Point 76	0.00	551.80	-669.67	14,548,839.44	1,676,216.25
Point 77	0.00	551.83	-688.81	14,548,839.44	1,676,197.11
Point 78	0.00	552.66	-707.92	14,548,840.25	1,676,178.00
Point 79	0.00	554.28	-726.99	14,548,841.84	1,676,158.93
Point 80	0.00	556.69	-745.98	14,548,844.22	1,676,139.94
Point 81	0.00	559.88	-764.85	14,548,847.38	1,676,121.06
Point 82	0.00	563.87	-783.57	14,548,851.34	1,676,102.34
Point 83	0.00	568.62	-802.11	14,548,856.07	1,676,083.79
Point 84	0.00	574.14	-820.43	14,548,861.56	1,676,065.46
Point 85	0.00	580.43	-838.51	14,548,867.82	1,676,047.37
Point 86	0.00	587.46	-856.31	14,548,874.83	1,676,029.56
Point 87	0.00	595.21	-873.81	14,548,882.55	1,676,012.05
Point 88	0.00	603.70	-890.97	14,548,891.02	1,675,994.88
Point 89	0.00	612.88	-907.76	14,548,900.17	1,675,978.07
Point 90	0.00	622.77	-924.15	14,548,910.04	1,675,961.67
Point 91	0.00	633.32	-940.12	14,548,920.56	1,675,945.68
Point 92	0.00	644.53	-955.63	14,548,931.75	1,675,930.16
Point 93	0.00	656.37	-970.67	14,548,943.57	1,675,915.10
Point 94	0.00	668.83	-985.20	14,548,956.01	1,675,900.55
Point 95	0.00	681.89	-999.20	14,548,969.05	1,675,886.53
Point 96	0.00	695.51	-1,012.64	14,548,982.65	1,675,873.07
Point 97	0.00	709.68	-1,025.51	14,548,996.80	1,675,860.18
Point 98	0.00	724.37	-1,037.76	14,549,011.47	1,675,847.91
Point 99	0.00	739.56	-1,049.41	14,549,026.64	1,675,836.24
Point 100	0.00	755.23	-1,060.41	14,549,042.30	1,675,825.22
Point 101	0.00	771.33	-1,070.75	14,549,058.38	1,675,814.85
Point 102	0.00	787.86	-1,080.41	14,549,074.90	1,675,805.17
Point 103	0.00	804.77	-1,089.38	14,549,091.80	1,675,796.17
Point 104	0.00	822.03	-1,097.63	14,549,109.04	1,675,787.90
Point 105	0.00	839.63	-1,105.16	14,549,126.63	1,675,780.34
Point 106	0.00	857.52	-1,111.95	14,549,144.51	1,675,773.53
Point 107	0.00	875.69	-1,117.98	14,549,162.67	1,675,767.47
Point 108	0.00	894.09	-1,123.27	14,549,181.07	1,675,762.15
Point 109	0.00	912.69	-1,127.77	14,549,199.66	1,675,757.63
Point 110	0.00	931.46	-1,131.50	14,549,218.42	1,675,753.87
Point 111	0.00	950.37	-1,134.45	14,549,237.33	1,675,750.89
Point 112	0.00	969.39	-1,136.61	14,549,256.35	1,675,748.70
Point 113	0.00	988.48	-1,137.97	14,549,275.43	1,675,747.31
Point 114	0.00	1,007.61	-1,138.54	14,549,294.56	1,675,746.72
Point 115	0.00	1,026.74	-1,138.31	14,549,313.69	1,675,746.92
Point 116	0.00	1,045.86	-1,137.29	14,549,332.82	1,675,747.91
Point 117	0.00	1,064.91	-1,135.48	14,549,351.87	1,675,749.69
Point 118	0.00	1,083.87	-1,132.87	14,549,370.83	1,675,752.28
Point 119	0.00	1,102.71	-1,129.47	14,549,389.68	1,675,755.65
Point 120	0.00	1,121.38	-1,125.29	14,549,408.35	1,675,759.80
Point 121	0.00	1,139.87	-1,120.35	14,549,426.85	1,675,764.71
Point 122	0.00	1,158.15	-1,114.63	14,549,445.14	1,675,770.41
Point 123	0.00	1,176.16	-1,108.16	14,549,463.16	1,675,776.85
Point 124	0.00	1,193.89	-1,100.96	14,549,480.90	1,675,784.02
Point 125	0.00	1,211.29	-1,093.01	14,549,498.31	1,675,791.95
Point 126	0.00	1,228.36	-1,084.35	14,549,515.39	1,675,800.58
Point 127	0.00	1,245.06	-1,074.98	14,549,532.11	1,675,809.93
Point 128	0.00	1,261.34	-1,064.94	14,549,548.40	1,675,819.95
Point 129	0.00	1,277.20	-1,054.21	14,549,564.28	1,675,830.65
Point 130	0.00	1,292.60	-1,042.85	14,549,579.69	1,675,841.99
Point 131	0.00	1,307.51	-1,030.85	14,549,594.62	1,675,853.97
Point 132	0.00	1,321.91	-1,018.24	14,549,609.04	1,675,866.56
Point 133	0.00	1,335.77	-1,005.04	14,549,622.92	1,675,879.74

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JZM 1C-3HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5056.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5056.00usft (D Rig)
Site:	1N-67W-10 JZM 16-10HZ Pad	North Reference:	True
Well:	JZM 1C-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Point 134	0.00	1,349.08	-991.28	14,549,636.25	1,675,893.48				
Point 135	0.00	1,361.78	-976.97	14,549,648.97	1,675,907.77				
Point 136	0.00	1,373.90	-962.15	14,549,661.11	1,675,922.57				
Point 137	0.00	1,385.38	-946.85	14,549,672.61	1,675,937.85				
Point 138	0.00	1,396.22	-931.07	14,549,683.48	1,675,953.62				
Point 139	0.00	1,406.39	-914.86	14,549,693.67	1,675,969.81				
Point 140	0.00	1,415.88	-898.23	14,549,703.19	1,675,986.43				
Point 141	0.00	1,424.66	-881.23	14,549,711.99	1,676,003.42				
Point 142	0.00	1,432.74	-863.88	14,549,720.10	1,676,020.75				
Point 143	0.00	1,440.08	-846.20	14,549,727.46	1,676,038.42				
Point 144	0.00	1,446.69	-828.24	14,549,734.10	1,676,056.37				
Point 145	0.00	1,452.54	-810.02	14,549,739.97	1,676,074.58				
Point 146	0.00	1,457.62	-791.56	14,549,745.08	1,676,093.04				
Point 147	0.00	1,461.94	-772.91	14,549,749.43	1,676,111.68				
Point 148	0.00	1,465.47	-754.11	14,549,752.99	1,676,130.48				
Point 149	0.00	1,468.22	-735.16	14,549,755.76	1,676,149.42				
Point 150	0.00	1,470.18	-716.12	14,549,757.75	1,676,168.46				
Point 151	0.00	1,471.35	-697.02	14,549,758.95	1,676,187.56				
Point 152	0.00	1,471.72	-677.89	14,549,759.35	1,676,206.69				
1N-R67W-Sec. 10_Secti	0.00	0.00	-24.00	-18.88	-1,678.86	14,548,267.29	1,675,207.90	40.059069	-104.875661
- plan misses target center by 1679.14usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1		-24.00	4,992.86	-2,976.12	14,553,255.78	1,672,224.47			
Point 2		-24.00	4,994.59	-331.69	14,553,261.38	1,674,868.90			
Point 3		-24.00	4,996.25	2,313.07	14,553,266.92	1,677,513.65			
Point 4		-24.00	2,354.63	2,320.05	14,550,625.31	1,677,524.50			
Point 5		-24.00	-287.06	2,326.97	14,547,983.63	1,677,535.29			
Point 6		-24.00	-288.46	-327.65	14,547,978.35	1,674,880.67			
Point 7		-24.00	-290.97	-2,982.55	14,547,971.95	1,672,225.78			
1N-R67W-Sec. 3_Sectio	0.00	0.00	-24.00	-18.88	-1,678.86	14,548,267.29	1,675,207.90	40.059069	-104.875661
- plan misses target center by 1679.14usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1		-24.00	10,361.30	-3,022.88	14,558,624.15	1,672,169.85			
Point 2		-24.00	10,358.07	-398.53	14,558,624.76	1,674,794.21			
Point 3		-24.00	10,354.85	2,234.71	14,558,625.40	1,677,427.45			
Point 4		-24.00	7,634.95	2,286.94	14,555,905.58	1,677,483.66			
Point 5		-24.00	4,996.25	2,313.07	14,553,266.92	1,677,513.65			
Point 6		-24.00	4,994.59	-331.69	14,553,261.38	1,674,868.90			
Point 7		-24.00	4,992.86	-2,976.12	14,553,255.78	1,672,224.47			
Point 8		-24.00	7,632.17	-2,992.40	14,555,895.07	1,672,204.33			
JZM 1C-3HZ_TOE	0.00	0.00	7,697.00	10,287.11	-343.34	14,558,575.22	1,676,528.33	40.087371	-104.870889
- plan hits target center									
- Point									

Casing Points						
Measured Depth (usft)	Vertical Depth (usft)		Name	Casing Diameter (")	Hole Diameter (")	
1,817.06	1,800.00	9 5/8"		9-5/8	13-1/2	
8,059.68	7,670.00	7"		7	8-3/4	

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JZM 1C-3HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5056.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5056.00usft (D Rig)
Site:	1N-67W-10 JZM 16-10HZ Pad	North Reference:	True
Well:	JZM 1C-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,359.10	1,349.00	Fox Hills		0.00	
4,623.09	4,595.00	Sussex		0.00	
7,320.36	7,285.19	Sharon Springs		0.00	
7,361.24	7,322.19	Niobrara Top		0.00	
7,500.12	7,438.13	Niobrara B Bench		0.00	
7,610.25	7,516.67	Niobrara C Bench		0.00	
7,908.34	7,651.67	Fort Hays		0.00	
8,059.68	7,670.00	Heel:		0.00	
17,650.34	7,697.00	Toe:		0.00	

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
250.00	250.00	0.00	0.00	Begin Nudge @ 250.00ft
916.67	913.29	10.08	-57.15	End Nudge @ 916.67ft
2,376.67	2,351.11	54.10	-306.82	Begin Drop @ 2376.67ft
2,876.67	2,848.58	61.66	-349.68	End Drop @ 2876.67ft
7,061.48	7,033.39	61.66	-349.68	KOP @ 7061.48ft
7,500.00	7,438.04	206.81	-349.59	DLS = 9°/100'
8,059.68	7,670.00	696.48	-349.29	End Build @ 8059.68ft
17,650.35	7,697.00	10,287.11	-343.34	TD Well @ 17650.35ft