

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
1N-67W-10 JZM 16-10HZ Pad
JZM 27N-E3HZ**

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 27N-E3HZ

Wellbore: Plan A

Design: Permit Rev-1

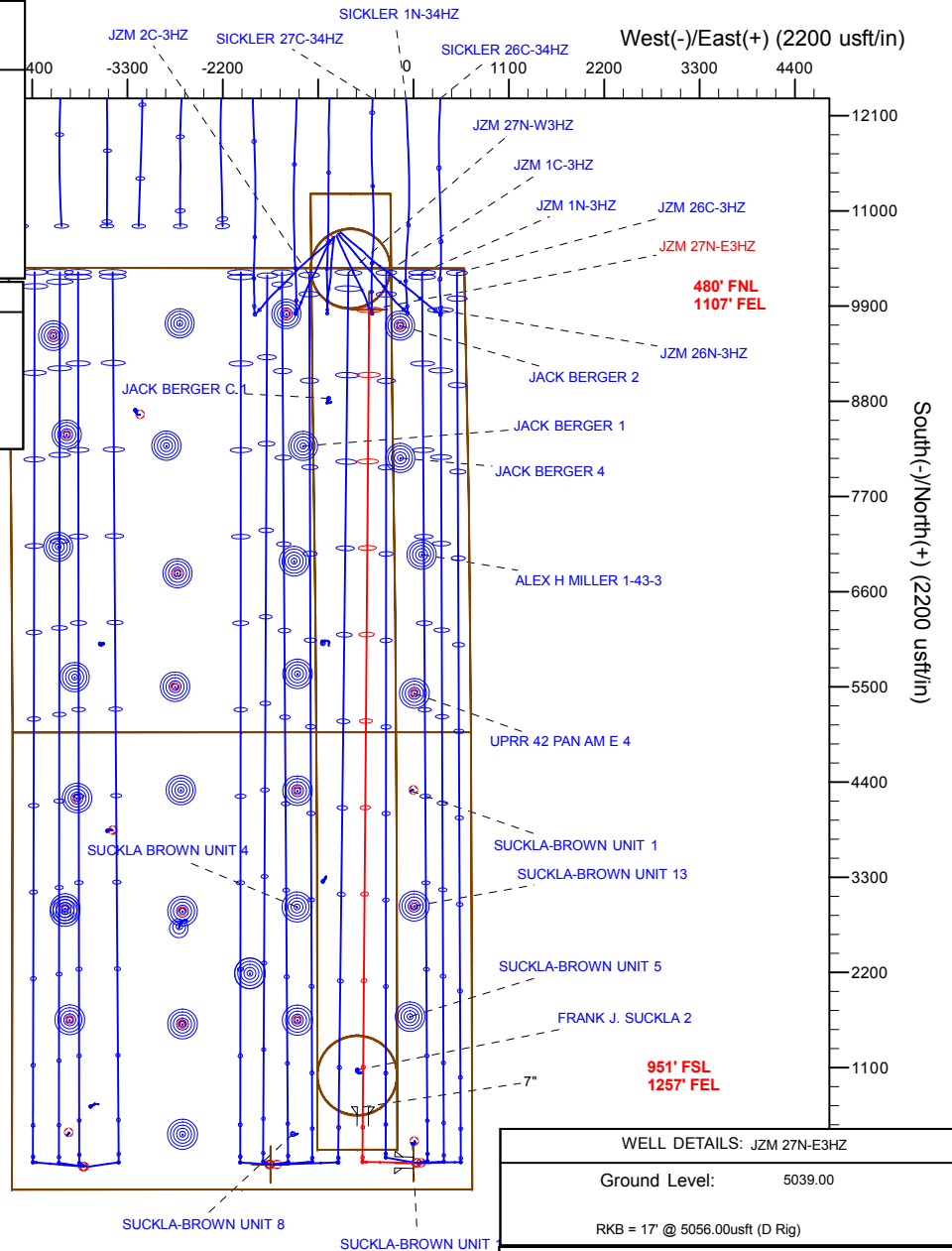
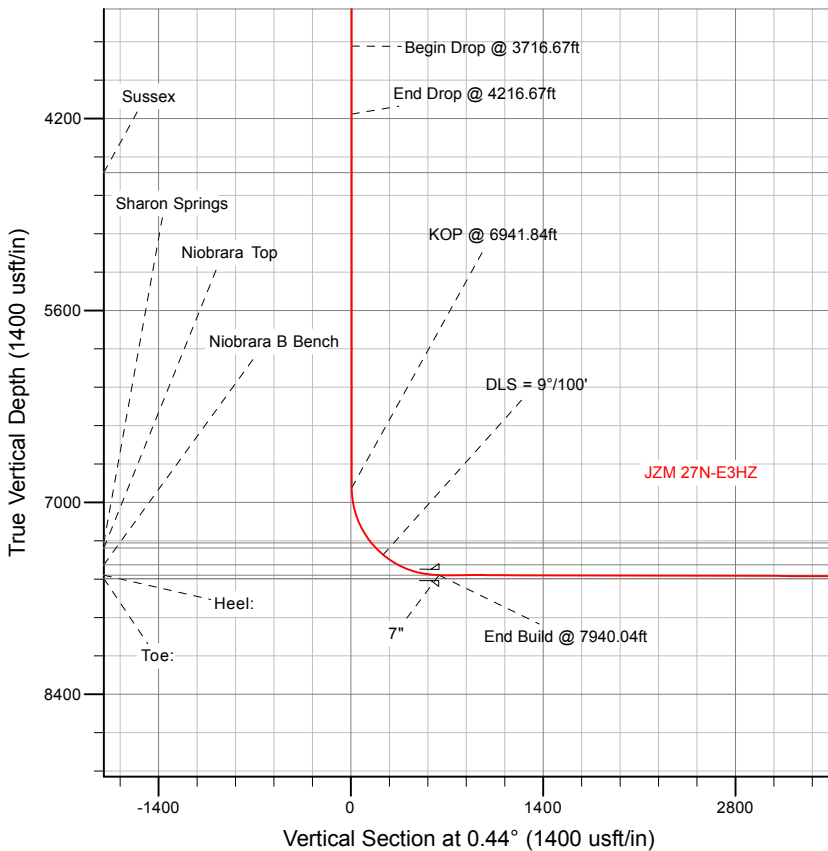
US ROCKIES WATTENBERG PLANNING

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	271.00	913.29	1.01	-58.02	1.50	271.00	0.57	
4	3716.67	10.00	271.00	3670.75	9.50	-544.16	0.00	0.00	5.32	
5	4216.67	0.00	0.00	4168.21	10.26	-587.68	2.00	180.00	5.74	
6	6941.84	0.00	0.00	6893.38	10.26	-587.68	0.00	0.00	5.74	
7	7940.04	89.84	0.44	7530.00	645.06	-582.75	9.00	0.44	640.57	
8	17152.41	89.84	0.44	7556.00	9857.12	-511.27	0.00	0.00	9852.90	JZM 27N-E3HZ_TOE

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
JZM 27N-E3HZ_SHL	0.00	0.00	0.00	40.059122	-104.869768	Point
JZM 27N-E3HZ_TOE	7556.00	9857.12	-511.27	40.086191	-104.871596	Point



WELL DETAILS: JZM 27N-E3HZ

Ground Level: 5039.00

RKB = 17' @ 5056.00usft (D Rig)

Plan: Permit Rev-1 (JZM 27N-E3HZ/Plan A)

Created By: Clint Eshelman Date: 8/20/2015
 Reviewed: _____ Date: _____

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JZM 27N-E3HZ
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 27N-E3HZ	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 27N-E3HZ			
Well Position	+N-S	0.00 usft	Northing: 14,548,288.94 usft
	+E-W	0.00 usft	Easting: 1,676,856.79 usft
Position Uncertainty		3.28 usft	Wellhead Elevation: 0.00 usft
			Latitude: 40.059122
			Longitude: -104.869768
			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	0.44

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	271.00	913.29	1.01	-58.02	1.50	1.50	0.00	271.00	
3,716.67	10.00	271.00	3,670.75	9.50	-544.16	0.00	0.00	0.00	0.00	
4,216.67	0.00	0.00	4,168.21	10.26	-587.68	2.00	-2.00	0.00	180.00	
6,941.84	0.00	0.00	6,893.38	10.26	-587.68	0.00	0.00	0.00	0.00	
7,940.04	89.84	0.44	7,530.00	645.06	-582.75	9.00	9.00	0.04	0.44	
17,152.41	89.84	0.44	7,556.00	9,857.12	-511.27	0.00	0.00	0.00	0.00	JZM 27N-E3HZ_TOE

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JZM 27N-E3HZ
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 27N-E3HZ	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	271.00	300.00	0.01	-0.33	0.00	1.50	1.50	1.50	0.00
400.00	2.25	271.00	399.96	0.05	-2.94	0.03	1.50	1.50	1.50	0.00
500.00	3.75	271.00	499.82	0.14	-8.18	0.08	1.50	1.50	1.50	0.00
600.00	5.25	271.00	599.51	0.28	-16.02	0.16	1.50	1.50	1.50	0.00
700.00	6.75	271.00	698.96	0.46	-26.47	0.26	1.50	1.50	1.50	0.00
800.00	8.25	271.00	798.10	0.69	-39.52	0.39	1.50	1.50	1.50	0.00
900.00	9.75	271.00	896.87	0.96	-55.16	0.54	1.50	1.50	1.50	0.00
916.67	10.00	271.00	913.29	1.01	-58.02	0.57	1.50	1.50	1.50	0.00
End Nudge @ 916.67ft										
1,000.00	10.00	271.00	995.35	1.27	-72.49	0.71	0.00	0.00	0.00	0.00
1,100.00	10.00	271.00	1,093.84	1.57	-89.85	0.88	0.00	0.00	0.00	0.00
1,200.00	10.00	271.00	1,192.32	1.87	-107.21	1.05	0.00	0.00	0.00	0.00
1,300.00	10.00	271.00	1,290.80	2.17	-124.58	1.22	0.00	0.00	0.00	0.00
1,359.10	10.00	271.00	1,349.00	2.35	-134.84	1.32	0.00	0.00	0.00	0.00
Fox Hills										
1,400.00	10.00	271.00	1,389.28	2.48	-141.94	1.39	0.00	0.00	0.00	0.00
1,500.00	10.00	271.00	1,487.76	2.78	-159.30	1.56	0.00	0.00	0.00	0.00
1,600.00	10.00	271.00	1,586.24	3.08	-176.66	1.73	0.00	0.00	0.00	0.00
1,700.00	10.00	271.00	1,684.72	3.39	-194.02	1.90	0.00	0.00	0.00	0.00
1,800.00	10.00	271.00	1,783.20	3.69	-211.39	2.07	0.00	0.00	0.00	0.00
1,817.06	10.00	271.00	1,800.00	3.74	-214.35	2.10	0.00	0.00	0.00	0.00
9 5/8"										
1,900.00	10.00	271.00	1,881.68	3.99	-228.75	2.24	0.00	0.00	0.00	0.00
2,000.00	10.00	271.00	1,980.16	4.30	-246.11	2.41	0.00	0.00	0.00	0.00
2,100.00	10.00	271.00	2,078.64	4.60	-263.47	2.58	0.00	0.00	0.00	0.00
2,200.00	10.00	271.00	2,177.12	4.90	-280.84	2.75	0.00	0.00	0.00	0.00
2,300.00	10.00	271.00	2,275.60	5.21	-298.20	2.91	0.00	0.00	0.00	0.00
2,400.00	10.00	271.00	2,374.09	5.51	-315.56	3.08	0.00	0.00	0.00	0.00
2,500.00	10.00	271.00	2,472.57	5.81	-332.92	3.25	0.00	0.00	0.00	0.00
2,600.00	10.00	271.00	2,571.05	6.11	-350.28	3.42	0.00	0.00	0.00	0.00
2,700.00	10.00	271.00	2,669.53	6.42	-367.65	3.59	0.00	0.00	0.00	0.00
2,800.00	10.00	271.00	2,768.01	6.72	-385.01	3.76	0.00	0.00	0.00	0.00
2,900.00	10.00	271.00	2,866.49	7.02	-402.37	3.93	0.00	0.00	0.00	0.00
3,000.00	10.00	271.00	2,964.97	7.33	-419.73	4.10	0.00	0.00	0.00	0.00
3,100.00	10.00	271.00	3,063.45	7.63	-437.10	4.27	0.00	0.00	0.00	0.00
3,200.00	10.00	271.00	3,161.93	7.93	-454.46	4.44	0.00	0.00	0.00	0.00
3,300.00	10.00	271.00	3,260.41	8.24	-471.82	4.61	0.00	0.00	0.00	0.00
3,400.00	10.00	271.00	3,358.89	8.54	-489.18	4.78	0.00	0.00	0.00	0.00
3,500.00	10.00	271.00	3,457.37	8.84	-506.54	4.95	0.00	0.00	0.00	0.00
3,600.00	10.00	271.00	3,555.85	9.14	-523.91	5.12	0.00	0.00	0.00	0.00
3,700.00	10.00	271.00	3,654.34	9.45	-541.27	5.29	0.00	0.00	0.00	0.00
3,716.67	10.00	271.00	3,670.75	9.50	-544.16	5.32	0.00	0.00	0.00	0.00
Begin Drop @ 3716.67ft										
3,800.00	8.33	271.00	3,753.02	9.73	-557.44	5.45	2.00	-2.00	0.00	0.00
3,900.00	6.33	271.00	3,852.19	9.95	-570.20	5.57	2.00	-2.00	0.00	0.00
4,000.00	4.33	271.00	3,951.75	10.12	-579.49	5.66	2.00	-2.00	0.00	0.00
4,100.00	2.33	271.00	4,051.58	10.22	-585.30	5.72	2.00	-2.00	0.00	0.00
4,200.00	0.33	271.00	4,151.55	10.26	-587.63	5.74	2.00	-2.00	0.00	0.00
4,216.67	0.00	0.00	4,168.22	10.26	-587.68	5.74	2.00	-2.00	0.00	0.00

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JZM 27N-E3HZ
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 27N-E3HZ	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)	
End Drop @ 4216.67ft										
4,300.00	0.00	0.00	4,251.55	10.26	-587.68	5.74	0.00	0.00	0.00	
4,400.00	0.00	0.00	4,351.55	10.26	-587.68	5.74	0.00	0.00	0.00	
4,500.00	0.00	0.00	4,451.55	10.26	-587.68	5.74	0.00	0.00	0.00	
4,600.00	0.00	0.00	4,551.55	10.26	-587.68	5.74	0.00	0.00	0.00	
4,643.45	0.00	0.00	4,595.00	10.26	-587.68	5.74	0.00	0.00	0.00	
Sussex										
4,700.00	0.00	0.00	4,651.55	10.26	-587.68	5.74	0.00	0.00	0.00	
4,800.00	0.00	0.00	4,751.55	10.26	-587.68	5.74	0.00	0.00	0.00	
4,900.00	0.00	0.00	4,851.55	10.26	-587.68	5.74	0.00	0.00	0.00	
5,000.00	0.00	0.00	4,951.55	10.26	-587.68	5.74	0.00	0.00	0.00	
5,100.00	0.00	0.00	5,051.55	10.26	-587.68	5.74	0.00	0.00	0.00	
5,200.00	0.00	0.00	5,151.55	10.26	-587.68	5.74	0.00	0.00	0.00	
5,300.00	0.00	0.00	5,251.55	10.26	-587.68	5.74	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,351.55	10.26	-587.68	5.74	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,451.55	10.26	-587.68	5.74	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,551.55	10.26	-587.68	5.74	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,651.55	10.26	-587.68	5.74	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,751.55	10.26	-587.68	5.74	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,851.55	10.26	-587.68	5.74	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,951.55	10.26	-587.68	5.74	0.00	0.00	0.00	
6,100.00	0.00	0.00	6,051.55	10.26	-587.68	5.74	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,151.55	10.26	-587.68	5.74	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,251.55	10.26	-587.68	5.74	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,351.55	10.26	-587.68	5.74	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,451.55	10.26	-587.68	5.74	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,551.55	10.26	-587.68	5.74	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,651.55	10.26	-587.68	5.74	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,751.55	10.26	-587.68	5.74	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,851.55	10.26	-587.68	5.74	0.00	0.00	0.00	
6,941.84	0.00	0.00	6,893.39	10.26	-587.68	5.74	0.00	0.00	0.00	
KOP @ 6941.84ft										
7,000.00	5.23	0.44	6,951.47	12.91	-587.66	8.40	9.00	9.00	0.00	
7,100.00	14.23	0.44	7,049.93	29.80	-587.53	25.29	9.00	9.00	0.00	
7,200.00	23.23	0.44	7,144.53	61.89	-587.28	57.38	9.00	9.00	0.00	
7,300.00	32.23	0.44	7,232.95	108.38	-586.92	103.87	9.00	9.00	0.00	
7,377.65	39.22	0.44	7,295.95	153.69	-586.57	149.19	9.00	9.00	0.00	
Sharon Springs										
7,400.00	41.23	0.44	7,313.01	168.12	-586.45	163.62	9.00	9.00	0.00	
7,427.03	43.67	0.44	7,332.95	186.37	-586.31	181.86	9.00	9.00	0.00	
Niobrara Top										
7,500.00	50.23	0.44	7,382.74	239.66	-585.90	235.15	9.00	9.00	0.00	
DLS = 9°/100'										
7,600.00	59.23	0.44	7,440.41	321.22	-585.27	316.72	9.00	9.00	0.00	
7,630.98	62.02	0.44	7,455.60	348.21	-585.06	343.71	9.00	9.00	0.00	
Niobrara B Bench										
7,700.00	68.23	0.44	7,484.62	410.80	-584.57	406.30	9.00	9.00	0.00	
7,800.00	77.23	0.44	7,514.27	506.20	-583.83	501.70	9.00	9.00	0.00	
7,900.00	86.23	0.44	7,528.63	605.05	-583.06	600.56	9.00	9.00	0.00	
7,940.04	89.84	0.44	7,530.00	645.06	-582.75	640.57	9.00	9.00	0.00	
End Build @ 7940.04ft - Heel: - 7"										
8,000.00	89.84	0.44	7,530.17	705.02	-582.29	700.53	0.00	0.00	0.00	
8,100.00	89.84	0.44	7,530.45	805.02	-581.51	800.53	0.00	0.00	0.00	

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JZM 27N-E3HZ
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 27N-E3HZ	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)
8,200.00	89.84	0.44	7,530.74	905.01	-580.74	900.53	0.00	0.00	0.00
8,300.00	89.84	0.44	7,531.02	1,005.01	-579.96	1,000.53	0.00	0.00	0.00
8,400.00	89.84	0.44	7,531.30	1,105.01	-579.18	1,100.53	0.00	0.00	0.00
8,500.00	89.84	0.44	7,531.58	1,205.00	-578.41	1,200.53	0.00	0.00	0.00
8,600.00	89.84	0.44	7,531.86	1,305.00	-577.63	1,300.53	0.00	0.00	0.00
8,700.00	89.84	0.44	7,532.15	1,405.00	-576.86	1,400.52	0.00	0.00	0.00
8,800.00	89.84	0.44	7,532.43	1,504.99	-576.08	1,500.52	0.00	0.00	0.00
8,900.00	89.84	0.44	7,532.71	1,604.99	-575.30	1,600.52	0.00	0.00	0.00
9,000.00	89.84	0.44	7,532.99	1,704.99	-574.53	1,700.52	0.00	0.00	0.00
9,100.00	89.84	0.44	7,533.28	1,804.98	-573.75	1,800.52	0.00	0.00	0.00
9,200.00	89.84	0.44	7,533.56	1,904.98	-572.98	1,900.52	0.00	0.00	0.00
9,300.00	89.84	0.44	7,533.84	2,004.98	-572.20	2,000.52	0.00	0.00	0.00
9,400.00	89.84	0.44	7,534.12	2,104.97	-571.42	2,100.52	0.00	0.00	0.00
9,500.00	89.84	0.44	7,534.40	2,204.97	-570.65	2,200.52	0.00	0.00	0.00
9,600.00	89.84	0.44	7,534.69	2,304.97	-569.87	2,300.52	0.00	0.00	0.00
9,700.00	89.84	0.44	7,534.97	2,404.96	-569.10	2,400.52	0.00	0.00	0.00
9,800.00	89.84	0.44	7,535.25	2,504.96	-568.32	2,500.52	0.00	0.00	0.00
9,900.00	89.84	0.44	7,535.53	2,604.96	-567.54	2,600.52	0.00	0.00	0.00
10,000.00	89.84	0.44	7,535.82	2,704.95	-566.77	2,700.52	0.00	0.00	0.00
10,100.00	89.84	0.44	7,536.10	2,804.95	-565.99	2,800.52	0.00	0.00	0.00
10,200.00	89.84	0.44	7,536.38	2,904.94	-565.22	2,900.52	0.00	0.00	0.00
10,300.00	89.84	0.44	7,536.66	3,004.94	-564.44	3,000.52	0.00	0.00	0.00
10,400.00	89.84	0.44	7,536.94	3,104.94	-563.66	3,100.52	0.00	0.00	0.00
10,500.00	89.84	0.44	7,537.23	3,204.93	-562.89	3,200.52	0.00	0.00	0.00
10,600.00	89.84	0.44	7,537.51	3,304.93	-562.11	3,300.52	0.00	0.00	0.00
10,700.00	89.84	0.44	7,537.79	3,404.93	-561.34	3,400.52	0.00	0.00	0.00
10,800.00	89.84	0.44	7,538.07	3,504.92	-560.56	3,500.52	0.00	0.00	0.00
10,900.00	89.84	0.44	7,538.36	3,604.92	-559.78	3,600.52	0.00	0.00	0.00
11,000.00	89.84	0.44	7,538.64	3,704.92	-559.01	3,700.52	0.00	0.00	0.00
11,100.00	89.84	0.44	7,538.92	3,804.91	-558.23	3,800.52	0.00	0.00	0.00
11,200.00	89.84	0.44	7,539.20	3,904.91	-557.46	3,900.51	0.00	0.00	0.00
11,300.00	89.84	0.44	7,539.48	4,004.91	-556.68	4,000.51	0.00	0.00	0.00
11,400.00	89.84	0.44	7,539.77	4,104.90	-555.91	4,100.51	0.00	0.00	0.00
11,500.00	89.84	0.44	7,540.05	4,204.90	-555.13	4,200.51	0.00	0.00	0.00
11,600.00	89.84	0.44	7,540.33	4,304.90	-554.35	4,300.51	0.00	0.00	0.00
11,700.00	89.84	0.44	7,540.61	4,404.89	-553.58	4,400.51	0.00	0.00	0.00
11,800.00	89.84	0.44	7,540.89	4,504.89	-552.80	4,500.51	0.00	0.00	0.00
11,900.00	89.84	0.44	7,541.18	4,604.89	-552.03	4,600.51	0.00	0.00	0.00
12,000.00	89.84	0.44	7,541.46	4,704.88	-551.25	4,700.51	0.00	0.00	0.00
12,100.00	89.84	0.44	7,541.74	4,804.88	-550.47	4,800.51	0.00	0.00	0.00
12,200.00	89.84	0.44	7,542.02	4,904.88	-549.70	4,900.51	0.00	0.00	0.00
12,300.00	89.84	0.44	7,542.31	5,004.87	-548.92	5,000.51	0.00	0.00	0.00
12,400.00	89.84	0.44	7,542.59	5,104.87	-548.15	5,100.51	0.00	0.00	0.00
12,500.00	89.84	0.44	7,542.87	5,204.87	-547.37	5,200.51	0.00	0.00	0.00
12,600.00	89.84	0.44	7,543.15	5,304.86	-546.59	5,300.51	0.00	0.00	0.00
12,700.00	89.84	0.44	7,543.43	5,404.86	-545.82	5,400.51	0.00	0.00	0.00
12,800.00	89.84	0.44	7,543.72	5,504.86	-545.04	5,500.51	0.00	0.00	0.00
12,900.00	89.84	0.44	7,544.00	5,604.85	-544.27	5,600.51	0.00	0.00	0.00
13,000.00	89.84	0.44	7,544.28	5,704.85	-543.49	5,700.51	0.00	0.00	0.00
13,100.00	89.84	0.44	7,544.56	5,804.85	-542.71	5,800.51	0.00	0.00	0.00
13,200.00	89.84	0.44	7,544.85	5,904.84	-541.94	5,900.51	0.00	0.00	0.00
13,300.00	89.84	0.44	7,545.13	6,004.84	-541.16	6,000.51	0.00	0.00	0.00
13,400.00	89.84	0.44	7,545.41	6,104.84	-540.39	6,100.51	0.00	0.00	0.00
13,500.00	89.84	0.44	7,545.69	6,204.83	-539.61	6,200.51	0.00	0.00	0.00

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JZM 27N-E3HZ
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 27N-E3HZ	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)
13,600.00	89.84	0.44	7,545.97	6,304.83	-538.83	6,300.51	0.00	0.00	0.00
13,700.00	89.84	0.44	7,546.26	6,404.83	-538.06	6,400.50	0.00	0.00	0.00
13,800.00	89.84	0.44	7,546.54	6,504.82	-537.28	6,500.50	0.00	0.00	0.00
13,900.00	89.84	0.44	7,546.82	6,604.82	-536.51	6,600.50	0.00	0.00	0.00
14,000.00	89.84	0.44	7,547.10	6,704.82	-535.73	6,700.50	0.00	0.00	0.00
14,100.00	89.84	0.44	7,547.39	6,804.81	-534.95	6,800.50	0.00	0.00	0.00
14,200.00	89.84	0.44	7,547.67	6,904.81	-534.18	6,900.50	0.00	0.00	0.00
14,300.00	89.84	0.44	7,547.95	7,004.81	-533.40	7,000.50	0.00	0.00	0.00
14,400.00	89.84	0.44	7,548.23	7,104.80	-532.63	7,100.50	0.00	0.00	0.00
14,500.00	89.84	0.44	7,548.51	7,204.80	-531.85	7,200.50	0.00	0.00	0.00
14,600.00	89.84	0.44	7,548.80	7,304.80	-531.08	7,300.50	0.00	0.00	0.00
14,700.00	89.84	0.44	7,549.08	7,404.79	-530.30	7,400.50	0.00	0.00	0.00
14,800.00	89.84	0.44	7,549.36	7,504.79	-529.52	7,500.50	0.00	0.00	0.00
14,900.00	89.84	0.44	7,549.64	7,604.78	-528.75	7,600.50	0.00	0.00	0.00
15,000.00	89.84	0.44	7,549.93	7,704.78	-527.97	7,700.50	0.00	0.00	0.00
15,100.00	89.84	0.44	7,550.21	7,804.78	-527.20	7,800.50	0.00	0.00	0.00
15,200.00	89.84	0.44	7,550.49	7,904.77	-526.42	7,900.50	0.00	0.00	0.00
15,300.00	89.84	0.44	7,550.77	8,004.77	-525.64	8,000.50	0.00	0.00	0.00
15,400.00	89.84	0.44	7,551.05	8,104.77	-524.87	8,100.50	0.00	0.00	0.00
15,500.00	89.84	0.44	7,551.34	8,204.76	-524.09	8,200.50	0.00	0.00	0.00
15,600.00	89.84	0.44	7,551.62	8,304.76	-523.32	8,300.50	0.00	0.00	0.00
15,700.00	89.84	0.44	7,551.90	8,404.76	-522.54	8,400.50	0.00	0.00	0.00
15,800.00	89.84	0.44	7,552.18	8,504.75	-521.76	8,500.50	0.00	0.00	0.00
15,900.00	89.84	0.44	7,552.47	8,604.75	-520.99	8,600.50	0.00	0.00	0.00
16,000.00	89.84	0.44	7,552.75	8,704.75	-520.21	8,700.50	0.00	0.00	0.00
16,100.00	89.84	0.44	7,553.03	8,804.74	-519.44	8,800.50	0.00	0.00	0.00
16,200.00	89.84	0.44	7,553.31	8,904.74	-518.66	8,900.50	0.00	0.00	0.00
16,300.00	89.84	0.44	7,553.59	9,004.74	-517.88	9,000.49	0.00	0.00	0.00
16,400.00	89.84	0.44	7,553.88	9,104.73	-517.11	9,100.49	0.00	0.00	0.00
16,500.00	89.84	0.44	7,554.16	9,204.73	-516.33	9,200.49	0.00	0.00	0.00
16,600.00	89.84	0.44	7,554.44	9,304.73	-515.56	9,300.49	0.00	0.00	0.00
16,700.00	89.84	0.44	7,554.72	9,404.72	-514.78	9,400.49	0.00	0.00	0.00
16,800.00	89.84	0.44	7,555.01	9,504.72	-514.00	9,500.49	0.00	0.00	0.00
16,900.00	89.84	0.44	7,555.29	9,604.72	-513.23	9,600.49	0.00	0.00	0.00
17,000.00	89.84	0.44	7,555.57	9,704.71	-512.45	9,700.49	0.00	0.00	0.00
17,100.00	89.84	0.44	7,555.85	9,804.71	-511.68	9,800.49	0.00	0.00	0.00
17,152.41	89.84	0.44	7,556.00	9,857.12	-511.27	9,852.90	0.00	0.00	0.00
TD Well @ 17152.41ft - Toe:									

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JZM 27N-E3HZ
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 27N-E3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

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										
JZM 27N-E3HZ_460' Po	0.00	0.00	0.00	0.00	0.00	14,548,288.94	1,676,856.79	40.059122	-104.869768	
- plan hits target center										
- Polygon										
Point 1			0.00	1,471.35	-647.95	14,549,759.34	1,676,206.69			
Point 2			0.00	1,470.92	-628.81	14,549,758.94	1,676,225.83			
Point 3			0.00	1,469.71	-609.71	14,549,757.76	1,676,244.93			
Point 4			0.00	1,467.69	-590.68	14,549,755.77	1,676,263.96			
Point 5			0.00	1,464.88	-571.75	14,549,752.98	1,676,282.90			
Point 6			0.00	1,461.29	-552.95	14,549,749.42	1,676,301.70			
Point 7			0.00	1,456.93	-534.31	14,549,745.09	1,676,320.35			
Point 8			0.00	1,451.79	-515.88	14,549,739.98	1,676,338.79			
Point 9			0.00	1,445.88	-497.67	14,549,734.09	1,676,357.01			
Point 10			0.00	1,439.23	-479.73	14,549,727.47	1,676,374.96			
Point 11			0.00	1,431.83	-462.07	14,549,720.09	1,676,392.63			
Point 12			0.00	1,423.70	-444.74	14,549,711.99	1,676,409.97			
Point 13			0.00	1,414.87	-427.76	14,549,703.19	1,676,426.96			
Point 14			0.00	1,405.34	-411.17	14,549,693.68	1,676,443.57			
Point 15			0.00	1,395.11	-394.99	14,549,683.47	1,676,459.76			
Point 16			0.00	1,384.23	-379.25	14,549,672.62	1,676,475.52			
Point 17			0.00	1,372.71	-363.97	14,549,661.12	1,676,490.81			
Point 18			0.00	1,360.55	-349.18	14,549,648.98	1,676,505.62			
Point 19			0.00	1,347.79	-334.91	14,549,636.24	1,676,519.91			
Point 20			0.00	1,334.44	-321.19	14,549,622.91	1,676,533.65			
Point 21			0.00	1,320.54	-308.03	14,549,609.03	1,676,546.83			
Point 22			0.00	1,306.12	-295.46	14,549,594.63	1,676,559.42			
Point 23			0.00	1,291.17	-283.51	14,549,579.70	1,676,571.39			
Point 24			0.00	1,275.73	-272.19	14,549,564.27	1,676,582.73			
Point 25			0.00	1,259.85	-261.51	14,549,548.41	1,676,593.44			
Point 26			0.00	1,243.53	-251.51	14,549,532.10	1,676,603.46			
Point 27			0.00	1,226.81	-242.20	14,549,515.40	1,676,612.80			
Point 28			0.00	1,209.72	-233.58	14,549,498.32	1,676,621.44			
Point 29			0.00	1,192.28	-225.70	14,549,480.89	1,676,629.35			
Point 30			0.00	1,174.53	-218.54	14,549,463.15	1,676,636.53			
Point 31			0.00	1,156.50	-212.12	14,549,445.13	1,676,642.98			
Point 32			0.00	1,138.22	-206.46	14,549,426.86	1,676,648.67			
Point 33			0.00	1,119.71	-201.57	14,549,408.36	1,676,653.58			
Point 34			0.00	1,101.02	-197.44	14,549,389.67	1,676,657.74			
Point 35			0.00	1,082.18	-194.10	14,549,370.84	1,676,661.11			
Point 36			0.00	1,063.20	-191.55	14,549,351.86	1,676,663.69			
Point 37			0.00	1,044.15	-189.79	14,549,332.81	1,676,665.47			
Point 38			0.00	1,025.03	-188.82	14,549,313.70	1,676,666.47			
Point 39			0.00	1,005.90	-188.65	14,549,294.57	1,676,666.67			
Point 40			0.00	986.77	-189.28	14,549,275.43	1,676,666.07			
Point 41			0.00	967.68	-190.70	14,549,256.34	1,676,664.68			
Point 42			0.00	948.67	-192.92	14,549,237.33	1,676,662.48			
Point 43			0.00	929.77	-195.91	14,549,218.42	1,676,659.52			
Point 44			0.00	911.01	-199.70	14,549,199.66	1,676,655.76			
Point 45			0.00	892.42	-204.26	14,549,181.06	1,676,651.23			
Point 46			0.00	874.04	-209.59	14,549,162.67	1,676,645.92			
Point 47			0.00	855.89	-215.69	14,549,144.52	1,676,639.85			
Point 48			0.00	838.02	-222.53	14,549,126.64	1,676,633.03			
Point 49			0.00	820.44	-230.10	14,549,109.04	1,676,625.49			
Point 50			0.00	803.20	-238.41	14,549,091.79	1,676,617.21			
Point 51			0.00	786.32	-247.42	14,549,074.90	1,676,608.22			
Point 52			0.00	769.82	-257.14	14,549,058.39	1,676,598.52			
Point 53			0.00	753.74	-267.52	14,549,042.29	1,676,588.17			
Point 54			0.00	738.11	-278.56	14,549,026.64	1,676,577.15			
Point 55			0.00	722.96	-290.26	14,549,011.48	1,676,565.47			

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JZM 27N-E3HZ
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 27N-E3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Point 56	0.00	708.30	-302.56	14,548,996.80	1,676,553.19
Point 57	0.00	694.17	-315.47	14,548,982.65	1,676,540.31
Point 58	0.00	680.58	-328.95	14,548,969.04	1,676,526.85
Point 59	0.00	667.57	-342.99	14,548,956.01	1,676,512.82
Point 60	0.00	655.16	-357.56	14,548,943.58	1,676,498.27
Point 61	0.00	643.36	-372.62	14,548,931.76	1,676,483.23
Point 62	0.00	632.19	-388.17	14,548,920.56	1,676,467.70
Point 63	0.00	621.68	-404.16	14,548,910.03	1,676,451.72
Point 64	0.00	611.85	-420.59	14,548,900.18	1,676,435.31
Point 65	0.00	602.71	-437.40	14,548,891.01	1,676,418.51
Point 66	0.00	594.28	-454.58	14,548,882.56	1,676,401.34
Point 67	0.00	586.57	-472.11	14,548,874.82	1,676,383.82
Point 68	0.00	579.60	-489.93	14,548,867.83	1,676,366.01
Point 69	0.00	573.37	-508.02	14,548,861.57	1,676,347.93
Point 70	0.00	567.89	-526.36	14,548,856.06	1,676,329.60
Point 71	0.00	563.20	-544.92	14,548,851.34	1,676,311.05
Point 72	0.00	559.27	-563.65	14,548,847.39	1,676,292.32
Point 73	0.00	556.13	-582.53	14,548,844.22	1,676,273.45
Point 74	0.00	553.77	-601.52	14,548,841.83	1,676,254.46
Point 75	0.00	552.21	-620.60	14,548,840.24	1,676,235.38
Point 76	0.00	551.44	-639.73	14,548,839.45	1,676,216.25
Point 77	0.00	551.47	-658.87	14,548,839.45	1,676,197.11
Point 78	0.00	552.30	-677.99	14,548,840.25	1,676,177.99
Point 79	0.00	553.91	-697.05	14,548,841.83	1,676,158.93
Point 80	0.00	556.32	-716.04	14,548,844.21	1,676,139.94
Point 81	0.00	559.52	-734.92	14,548,847.39	1,676,121.05
Point 82	0.00	563.51	-753.63	14,548,851.35	1,676,102.34
Point 83	0.00	568.25	-772.17	14,548,856.06	1,676,083.79
Point 84	0.00	573.78	-790.49	14,548,861.57	1,676,065.46
Point 85	0.00	580.07	-808.58	14,548,867.83	1,676,047.36
Point 86	0.00	587.09	-826.38	14,548,874.82	1,676,029.55
Point 87	0.00	594.85	-843.87	14,548,882.56	1,676,012.05
Point 88	0.00	603.33	-861.03	14,548,891.01	1,675,994.88
Point 89	0.00	612.52	-877.82	14,548,900.18	1,675,978.08
Point 90	0.00	622.40	-894.21	14,548,910.03	1,675,961.67
Point 91	0.00	632.95	-910.18	14,548,920.56	1,675,945.69
Point 92	0.00	644.17	-925.69	14,548,931.76	1,675,930.16
Point 93	0.00	656.01	-940.73	14,548,943.58	1,675,915.10
Point 94	0.00	668.46	-955.26	14,548,956.00	1,675,900.55
Point 95	0.00	681.52	-969.26	14,548,969.04	1,675,886.53
Point 96	0.00	695.14	-982.70	14,548,982.64	1,675,873.07
Point 97	0.00	709.31	-995.57	14,548,996.80	1,675,860.18
Point 98	0.00	724.01	-1,007.83	14,549,011.48	1,675,847.90
Point 99	0.00	739.19	-1,019.47	14,549,026.64	1,675,836.24
Point 100	0.00	754.86	-1,030.47	14,549,042.29	1,675,825.22
Point 101	0.00	770.97	-1,040.81	14,549,058.39	1,675,814.85
Point 102	0.00	787.49	-1,050.47	14,549,074.89	1,675,805.17
Point 103	0.00	804.40	-1,059.44	14,549,091.79	1,675,796.17
Point 104	0.00	821.67	-1,067.69	14,549,109.05	1,675,787.90
Point 105	0.00	839.27	-1,075.22	14,549,126.64	1,675,780.34
Point 106	0.00	857.16	-1,082.01	14,549,144.52	1,675,773.53
Point 107	0.00	875.33	-1,088.04	14,549,162.68	1,675,767.47
Point 108	0.00	893.72	-1,093.33	14,549,181.06	1,675,762.15
Point 109	0.00	912.32	-1,097.83	14,549,199.66	1,675,757.63
Point 110	0.00	931.10	-1,101.56	14,549,218.43	1,675,753.87
Point 111	0.00	950.00	-1,104.51	14,549,237.33	1,675,750.89
Point 112	0.00	969.02	-1,106.67	14,549,256.34	1,675,748.70
Point 113	0.00	988.11	-1,108.03	14,549,275.43	1,675,747.32
Point 114	0.00	1,007.25	-1,108.60	14,549,294.57	1,675,746.72
Point 115	0.00	1,026.38	-1,108.37	14,549,313.70	1,675,746.92
Point 116	0.00	1,045.49	-1,107.35	14,549,332.81	1,675,747.91
Point 117	0.00	1,064.54	-1,105.54	14,549,351.86	1,675,749.69
Point 118	0.00	1,083.51	-1,102.93	14,549,370.84	1,675,752.28
Point 119	0.00	1,102.34	-1,099.53	14,549,389.67	1,675,755.65

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JZM 27N-E3HZ
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 27N-E3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Point 120			0.00	1,121.02	-1,095.35	14,549,408.36	1,675,759.80		
Point 121			0.00	1,139.51	-1,090.41	14,549,426.86	1,675,764.71		
Point 122			0.00	1,157.78	-1,084.69	14,549,445.13	1,675,770.41		
Point 123			0.00	1,175.79	-1,078.22	14,549,463.15	1,675,776.85		
Point 124			0.00	1,193.52	-1,071.02	14,549,480.89	1,675,784.03		
Point 125			0.00	1,210.93	-1,063.07	14,549,498.32	1,675,791.95		
Point 126			0.00	1,228.00	-1,054.41	14,549,515.40	1,675,800.59		
Point 127			0.00	1,244.69	-1,045.04	14,549,532.10	1,675,809.93		
Point 128			0.00	1,260.98	-1,035.00	14,549,548.41	1,675,819.95		
Point 129			0.00	1,276.83	-1,024.28	14,549,564.27	1,675,830.64		
Point 130			0.00	1,292.24	-1,012.91	14,549,579.70	1,675,841.99		
Point 131			0.00	1,307.15	-1,000.91	14,549,594.63	1,675,853.97		
Point 132			0.00	1,321.54	-988.30	14,549,609.04	1,675,866.56		
Point 133			0.00	1,335.40	-975.10	14,549,622.91	1,675,879.74		
Point 134			0.00	1,348.71	-961.34	14,549,636.24	1,675,893.48		
Point 135			0.00	1,361.42	-947.03	14,549,648.98	1,675,907.77		
Point 136			0.00	1,373.54	-932.21	14,549,661.12	1,675,922.57		
Point 137			0.00	1,385.02	-916.91	14,549,672.62	1,675,937.86		
Point 138			0.00	1,395.85	-901.13	14,549,683.47	1,675,953.62		
Point 139			0.00	1,406.03	-884.92	14,549,693.68	1,675,969.81		
Point 140			0.00	1,415.51	-868.29	14,549,703.18	1,675,986.43		
Point 141			0.00	1,424.30	-851.29	14,549,712.00	1,676,003.42		
Point 142			0.00	1,432.37	-833.94	14,549,720.09	1,676,020.76		
Point 143			0.00	1,439.72	-816.26	14,549,727.47	1,676,038.43		
Point 144			0.00	1,446.32	-798.30	14,549,734.09	1,676,056.38		
Point 145			0.00	1,452.18	-780.08	14,549,739.98	1,676,074.59		
Point 146			0.00	1,457.26	-761.62	14,549,745.09	1,676,093.04		
Point 147			0.00	1,461.57	-742.98	14,549,749.42	1,676,111.67		
Point 148			0.00	1,465.10	-724.17	14,549,752.98	1,676,130.48		
Point 149			0.00	1,467.86	-705.23	14,549,755.77	1,676,149.41		
Point 150			0.00	1,469.82	-686.18	14,549,757.76	1,676,168.46		
Point 151			0.00	1,470.98	-667.08	14,549,758.94	1,676,187.56		
Point 152			0.00	1,471.35	-647.95	14,549,759.34	1,676,206.69		
JZM 27N-E3HZ_SHL	0.00	0.00	0.00	0.00	0.00	14,548,288.94	1,676,856.79	40.059122	-104.869768
- plan hits target center									
- Point									
JZM 27N-E3HZ_460' Po	0.00	0.00	0.00	0.00	0.00	14,548,288.94	1,676,856.79	40.059122	-104.869768
- plan hits target center									
- Polygon									
Point 1			0.00	10,794.86	-726.59	14,559,082.73	1,676,114.41		
Point 2			0.00	10,794.43	-707.46	14,559,082.33	1,676,133.54		
Point 3			0.00	10,793.21	-688.36	14,559,081.13	1,676,152.64		
Point 4			0.00	10,791.19	-669.33	14,559,079.14	1,676,171.67		
Point 5			0.00	10,788.39	-650.39	14,559,076.37	1,676,190.62		
Point 6			0.00	10,784.80	-631.60	14,559,072.81	1,676,209.41		
Point 7			0.00	10,780.43	-612.96	14,559,068.46	1,676,228.06		
Point 8			0.00	10,775.28	-594.52	14,559,063.34	1,676,246.51		
Point 9			0.00	10,769.39	-576.32	14,559,057.48	1,676,264.72		
Point 10			0.00	10,762.73	-558.37	14,559,050.84	1,676,282.68		
Point 11			0.00	10,755.34	-540.72	14,559,043.48	1,676,300.34		
Point 12			0.00	10,747.21	-523.39	14,559,035.38	1,676,317.68		
Point 13			0.00	10,738.38	-506.41	14,559,026.57	1,676,334.67		
Point 14			0.00	10,728.83	-489.82	14,559,017.04	1,676,351.28		
Point 15			0.00	10,718.62	-473.63	14,559,006.86	1,676,367.48		
Point 16			0.00	10,707.73	-457.89	14,558,995.99	1,676,383.24		
Point 17			0.00	10,696.20	-442.62	14,558,984.48	1,676,398.52		
Point 18			0.00	10,684.05	-427.83	14,558,972.36	1,676,413.33		
Point 19			0.00	10,671.29	-413.56	14,558,959.62	1,676,427.62		
Point 20			0.00	10,657.95	-399.84	14,558,946.30	1,676,441.36		
Point 21			0.00	10,644.05	-386.68	14,558,932.42	1,676,454.54		
Point 22			0.00	10,629.61	-374.11	14,558,917.99	1,676,467.13		
Point 23			0.00	10,614.67	-362.16	14,558,903.07	1,676,479.10		
Point 24			0.00	10,599.24	-350.84	14,558,887.66	1,676,490.45		

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JZM 27N-E3HZ
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 27N-E3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Point 25	0.00	10,583.35	-340.16	14,558,871.78	1,676,501.15
Point 26	0.00	10,567.04	-330.16	14,558,855.49	1,676,511.17
Point 27	0.00	10,550.31	-320.85	14,558,838.77	1,676,520.51
Point 28	0.00	10,533.22	-312.23	14,558,821.69	1,676,529.15
Point 29	0.00	10,515.78	-304.34	14,558,804.27	1,676,537.07
Point 30	0.00	10,498.04	-297.19	14,558,786.54	1,676,544.24
Point 31	0.00	10,480.00	-290.77	14,558,768.51	1,676,550.69
Point 32	0.00	10,461.72	-285.11	14,558,750.23	1,676,556.38
Point 33	0.00	10,443.21	-280.22	14,558,731.73	1,676,561.29
Point 34	0.00	10,424.53	-276.09	14,558,713.06	1,676,565.45
Point 35	0.00	10,405.68	-272.75	14,558,694.21	1,676,568.82
Point 36	0.00	10,386.71	-270.20	14,558,675.25	1,676,571.40
Point 37	0.00	10,367.66	-268.44	14,558,656.20	1,676,573.18
Point 38	0.00	10,348.54	-267.47	14,558,637.08	1,676,574.18
Point 39	0.00	10,329.39	-267.30	14,558,617.93	1,676,574.38
Point 40	0.00	10,310.27	-267.93	14,558,598.81	1,676,573.78
Point 41	0.00	10,291.19	-269.35	14,558,579.73	1,676,572.39
Point 42	0.00	10,272.17	-271.56	14,558,560.70	1,676,570.20
Point 43	0.00	10,253.27	-274.56	14,558,541.80	1,676,567.23
Point 44	0.00	10,234.51	-278.35	14,558,523.03	1,676,563.47
Point 45	0.00	10,215.92	-282.91	14,558,504.44	1,676,558.94
Point 46	0.00	10,197.54	-288.25	14,558,486.05	1,676,553.62
Point 47	0.00	10,179.39	-294.33	14,558,467.89	1,676,547.57
Point 48	0.00	10,161.52	-301.18	14,558,450.01	1,676,540.75
Point 49	0.00	10,143.95	-308.75	14,558,432.43	1,676,533.20
Point 50	0.00	10,126.70	-317.06	14,558,415.17	1,676,524.92
Point 51	0.00	10,109.82	-326.07	14,558,398.27	1,676,515.93
Point 52	0.00	10,093.32	-335.78	14,558,381.76	1,676,506.25
Point 53	0.00	10,077.25	-346.17	14,558,365.68	1,676,495.88
Point 54	0.00	10,061.62	-357.21	14,558,350.03	1,676,484.86
Point 55	0.00	10,046.46	-368.91	14,558,334.85	1,676,473.18
Point 56	0.00	10,031.80	-381.21	14,558,320.17	1,676,460.91
Point 57	0.00	10,017.67	-394.12	14,558,306.03	1,676,448.02
Point 58	0.00	10,004.08	-407.60	14,558,292.42	1,676,434.56
Point 59	0.00	9,991.07	-421.64	14,558,279.39	1,676,420.53
Point 60	0.00	9,978.65	-436.20	14,558,266.94	1,676,405.99
Point 61	0.00	9,966.85	-451.27	14,558,255.12	1,676,390.94
Point 62	0.00	9,955.70	-466.82	14,558,243.95	1,676,375.41
Point 63	0.00	9,945.19	-482.81	14,558,233.42	1,676,359.43
Point 64	0.00	9,935.35	-499.24	14,558,223.55	1,676,343.02
Point 65	0.00	9,926.22	-516.05	14,558,214.40	1,676,326.22
Point 66	0.00	9,917.78	-533.23	14,558,205.93	1,676,309.05
Point 67	0.00	9,910.07	-550.75	14,558,198.20	1,676,291.54
Point 68	0.00	9,903.10	-568.58	14,558,191.20	1,676,273.72
Point 69	0.00	9,896.87	-586.68	14,558,184.94	1,676,255.63
Point 70	0.00	9,891.40	-605.01	14,558,179.45	1,676,237.31
Point 71	0.00	9,886.70	-623.57	14,558,174.72	1,676,218.76
Point 72	0.00	9,882.77	-642.30	14,558,170.76	1,676,200.03
Point 73	0.00	9,879.63	-661.18	14,558,167.59	1,676,181.16
Point 74	0.00	9,877.28	-680.17	14,558,165.22	1,676,162.17
Point 75	0.00	9,875.71	-699.25	14,558,163.62	1,676,143.09
Point 76	0.00	9,874.94	-718.37	14,558,162.82	1,676,123.98
Point 77	0.00	9,874.97	-737.51	14,558,162.82	1,676,104.84
Point 78	0.00	9,875.79	-756.64	14,558,163.62	1,676,085.70
Point 79	0.00	9,877.42	-775.70	14,558,165.22	1,676,066.64
Point 80	0.00	9,879.83	-794.69	14,558,167.60	1,676,047.65
Point 81	0.00	9,883.02	-813.56	14,558,170.76	1,676,028.77
Point 82	0.00	9,887.00	-832.28	14,558,174.71	1,676,010.05
Point 83	0.00	9,891.76	-850.82	14,558,179.45	1,675,991.50
Point 84	0.00	9,897.28	-869.15	14,558,184.94	1,675,973.16
Point 85	0.00	9,903.56	-887.23	14,558,191.19	1,675,955.07
Point 86	0.00	9,910.59	-905.03	14,558,198.20	1,675,937.26
Point 87	0.00	9,918.35	-922.52	14,558,205.93	1,675,919.76
Point 88	0.00	9,926.84	-939.68	14,558,214.40	1,675,902.59

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JZM 27N-E3HZ
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 27N-E3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Point 89	0.00	9,936.02	-956.47	14,558,223.55	1,675,885.79
Point 90	0.00	9,945.91	-972.86	14,558,233.42	1,675,869.38
Point 91	0.00	9,956.46	-988.83	14,558,243.95	1,675,853.40
Point 92	0.00	9,967.66	-1,004.34	14,558,255.12	1,675,837.87
Point 93	0.00	9,979.50	-1,019.37	14,558,266.94	1,675,822.82
Point 94	0.00	9,991.97	-1,033.91	14,558,279.39	1,675,808.26
Point 95	0.00	10,005.02	-1,047.91	14,558,292.42	1,675,794.25
Point 96	0.00	10,018.65	-1,061.35	14,558,306.03	1,675,780.79
Point 97	0.00	10,032.82	-1,074.22	14,558,320.18	1,675,767.89
Point 98	0.00	10,047.51	-1,086.48	14,558,334.85	1,675,755.61
Point 99	0.00	10,062.70	-1,098.12	14,558,350.03	1,675,743.95
Point 100	0.00	10,078.37	-1,109.12	14,558,365.68	1,675,732.93
Point 101	0.00	10,094.47	-1,119.46	14,558,381.76	1,675,722.56
Point 102	0.00	10,111.00	-1,129.12	14,558,398.28	1,675,712.88
Point 103	0.00	10,127.90	-1,138.09	14,558,415.17	1,675,703.89
Point 104	0.00	10,145.17	-1,146.34	14,558,432.42	1,675,695.61
Point 105	0.00	10,162.77	-1,153.87	14,558,450.01	1,675,688.05
Point 106	0.00	10,180.66	-1,160.65	14,558,467.89	1,675,681.25
Point 107	0.00	10,198.82	-1,166.69	14,558,486.04	1,675,675.18
Point 108	0.00	10,217.22	-1,171.98	14,558,504.44	1,675,669.86
Point 109	0.00	10,235.82	-1,176.48	14,558,523.03	1,675,665.34
Point 110	0.00	10,254.59	-1,180.21	14,558,541.80	1,675,661.58
Point 111	0.00	10,273.50	-1,183.16	14,558,560.70	1,675,658.60
Point 112	0.00	10,292.53	-1,185.32	14,558,579.73	1,675,656.41
Point 113	0.00	10,311.61	-1,186.68	14,558,598.81	1,675,655.03
Point 114	0.00	10,330.74	-1,187.25	14,558,617.93	1,675,654.43
Point 115	0.00	10,349.88	-1,187.02	14,558,637.08	1,675,654.63
Point 116	0.00	10,369.00	-1,186.00	14,558,656.20	1,675,655.62
Point 117	0.00	10,388.05	-1,184.19	14,558,675.25	1,675,657.40
Point 118	0.00	10,407.01	-1,181.57	14,558,694.21	1,675,660.00
Point 119	0.00	10,425.85	-1,178.18	14,558,713.06	1,675,663.36
Point 120	0.00	10,444.52	-1,174.00	14,558,731.73	1,675,667.51
Point 121	0.00	10,463.01	-1,169.06	14,558,750.23	1,675,672.43
Point 122	0.00	10,481.28	-1,163.34	14,558,768.51	1,675,678.12
Point 123	0.00	10,499.30	-1,156.87	14,558,786.54	1,675,684.56
Point 124	0.00	10,517.02	-1,149.66	14,558,804.27	1,675,691.75
Point 125	0.00	10,534.43	-1,141.72	14,558,821.69	1,675,699.66
Point 126	0.00	10,551.50	-1,133.06	14,558,838.77	1,675,708.30
Point 127	0.00	10,568.20	-1,123.69	14,558,855.49	1,675,717.64
Point 128	0.00	10,584.48	-1,113.64	14,558,871.78	1,675,727.67
Point 129	0.00	10,600.34	-1,102.93	14,558,887.66	1,675,738.35
Point 130	0.00	10,615.74	-1,091.55	14,558,903.07	1,675,749.71
Point 131	0.00	10,630.64	-1,079.56	14,558,917.99	1,675,761.68
Point 132	0.00	10,645.05	-1,066.95	14,558,932.42	1,675,774.27
Point 133	0.00	10,658.91	-1,053.75	14,558,946.30	1,675,787.45
Point 134	0.00	10,672.21	-1,039.99	14,558,959.62	1,675,801.19
Point 135	0.00	10,684.92	-1,025.68	14,558,972.35	1,675,815.48
Point 136	0.00	10,697.03	-1,010.87	14,558,984.48	1,675,830.27
Point 137	0.00	10,708.52	-995.55	14,558,995.99	1,675,845.58
Point 138	0.00	10,719.36	-979.77	14,559,006.86	1,675,861.34
Point 139	0.00	10,729.52	-963.57	14,559,017.04	1,675,877.53
Point 140	0.00	10,739.02	-946.94	14,559,026.57	1,675,894.14
Point 141	0.00	10,747.80	-929.94	14,559,035.37	1,675,911.13
Point 142	0.00	10,755.88	-912.59	14,559,043.48	1,675,928.47
Point 143	0.00	10,763.22	-894.91	14,559,050.84	1,675,946.14
Point 144	0.00	10,769.83	-876.95	14,559,057.48	1,675,964.09
Point 145	0.00	10,775.67	-858.72	14,559,063.34	1,675,982.31
Point 146	0.00	10,780.76	-840.27	14,559,068.46	1,676,000.75
Point 147	0.00	10,785.08	-821.63	14,559,072.81	1,676,019.38
Point 148	0.00	10,788.61	-802.81	14,559,076.37	1,676,038.20
Point 149	0.00	10,791.36	-783.88	14,559,079.14	1,676,057.12
Point 150	0.00	10,793.32	-764.83	14,559,081.13	1,676,076.17
Point 151	0.00	10,794.49	-745.73	14,559,082.33	1,676,095.27
Point 152	0.00	10,794.86	-726.59	14,559,082.73	1,676,114.41

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JZM 27N-E3HZ
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 27N-E3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

JZM 27N-E3HZ_Hardline	0.00	0.00	0.00	0.00	0.00	14,548,288.94	1,676,856.79	40.059122	-104.869768
- plan hits target center									
- Polygon									
Point 1		0.00	11,198.29	-1,186.02	14,559,485.49	1,675,654.39			
Point 2		0.00	11,198.05	-726.02	14,559,485.92	1,676,114.39			
Point 3		0.00	11,197.80	-266.02	14,559,486.34	1,676,574.39			
Point 4		0.00	8,980.51	-245.82	14,557,269.08	1,676,597.83			
Point 5		0.00	6,300.43	-209.76	14,554,589.06	1,676,637.81			
Point 6		0.00	3,653.22	-192.94	14,551,941.88	1,676,658.51			
Point 7		0.00	1,012.12	-188.62	14,549,300.79	1,676,666.69			
Point 8		0.00	150.83	-187.18	14,548,439.50	1,676,669.39			
Point 9		0.00	150.62	-647.18	14,548,438.62	1,676,209.39			
Point 10		0.00	150.41	-1,107.18	14,548,437.73	1,675,749.39			
Point 11		0.00	1,011.12	-1,108.63	14,549,298.44	1,675,746.68			
Point 12		0.00	3,652.66	-1,112.93	14,551,939.97	1,675,738.52			
Point 13		0.00	6,307.38	-1,129.90	14,554,594.66	1,675,717.66			
Point 14		0.00	8,988.36	-1,166.06	14,557,275.59	1,675,677.58			
Point 15		0.00	11,198.29	-1,186.02	14,559,485.49	1,675,654.39			
1N-R67W-Sec. 10_Secti	0.00	0.00	-24.00	-19.24	-1,648.92	14,548,267.29	1,675,207.90	40.059069	-104.875661
- plan misses target center by 1649.21usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1		-24.00	4,992.86	-2,976.12	14,553,255.79	1,672,224.48			
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	14,553,266.91	1,677,513.66			
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	-19.24	-1,648.92	14,548,267.29	1,675,207.90	40.059069	-104.875661
- plan misses target center by 1649.21usft 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	1,672,169.87			
Point 2		-24.00	10,358.07	-398.53	14,558,624.76	1,674,794.22			
Point 3		-24.00	10,354.85	2,234.71	14,558,625.39	1,677,427.46			
Point 4		-24.00	7,634.95	2,286.94	14,555,905.57	1,677,483.67			
Point 5		-24.00	4,996.25	2,313.07	14,553,266.91	1,677,513.66			
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	14,553,255.79	1,672,224.48			
Point 8		-24.00	7,632.17	-2,992.40	14,555,895.07	1,672,204.34			
JZM 27N-E3HZ_TOE	0.00	0.00	7,556.00	9,857.12	-511.27	14,558,145.30	1,676,331.10	40.086191	-104.871596
- 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
	7,940.04	7,530.00	7"	7	8-3/4

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JZM 27N-E3HZ
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 27N-E3HZ	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		
4,643.45	4,595.00	Sussex		0.00		
7,377.65	7,295.95	Sharon Springs		0.00		
7,427.03	7,332.95	Niobrara Top		0.00		
7,630.98	7,455.60	Niobrara B Bench		0.00		
7,940.04	7,530.00	Heel:		0.00		
17,152.41	7,556.00	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	1.01	-58.02	End Nudge @ 916.67ft	
3,716.67	3,670.75	9.50	-544.16	Begin Drop @ 3716.67ft	
4,216.67	4,168.22	10.26	-587.68	End Drop @ 4216.67ft	
6,941.84	6,893.39	10.26	-587.68	KOP @ 6941.84ft	
7,500.00	7,382.74	239.66	-585.90	DLS = 9°/100'	
7,940.04	7,530.00	645.06	-582.75	End Build @ 7940.04ft	
17,152.41	7,556.00	9,857.12	-511.27	TD Well @ 17152.41ft	