

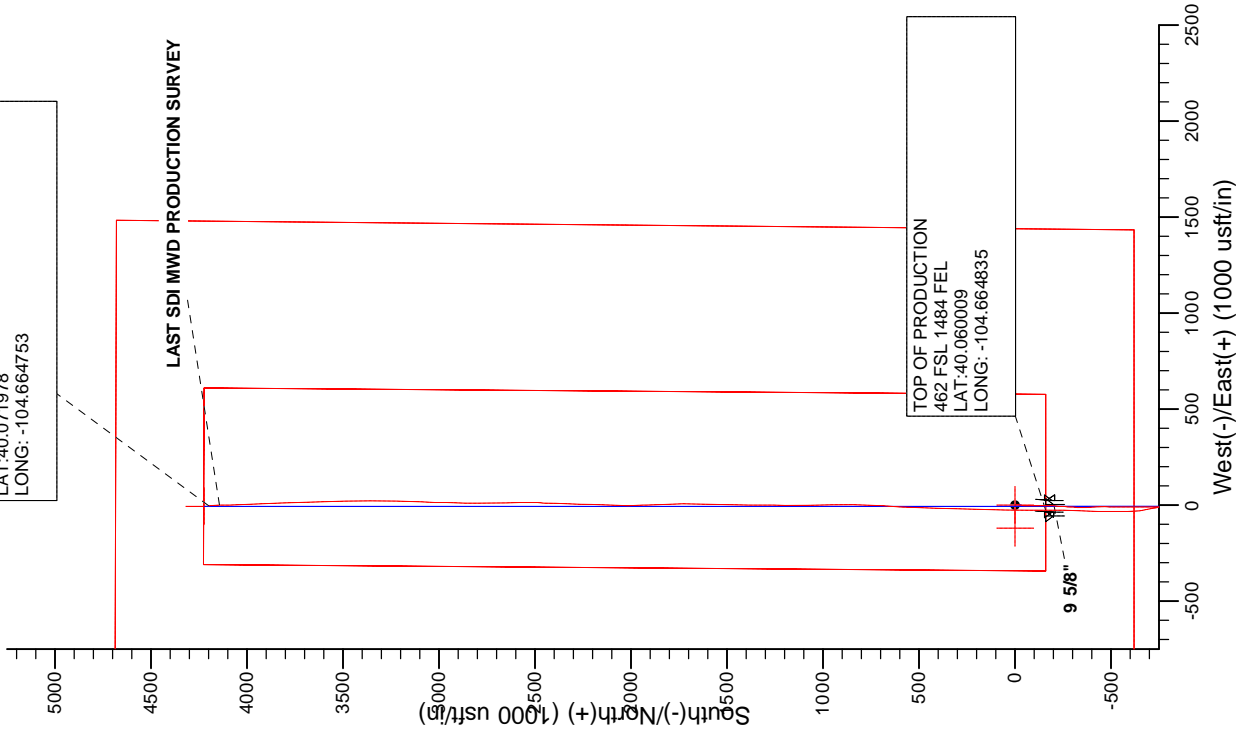
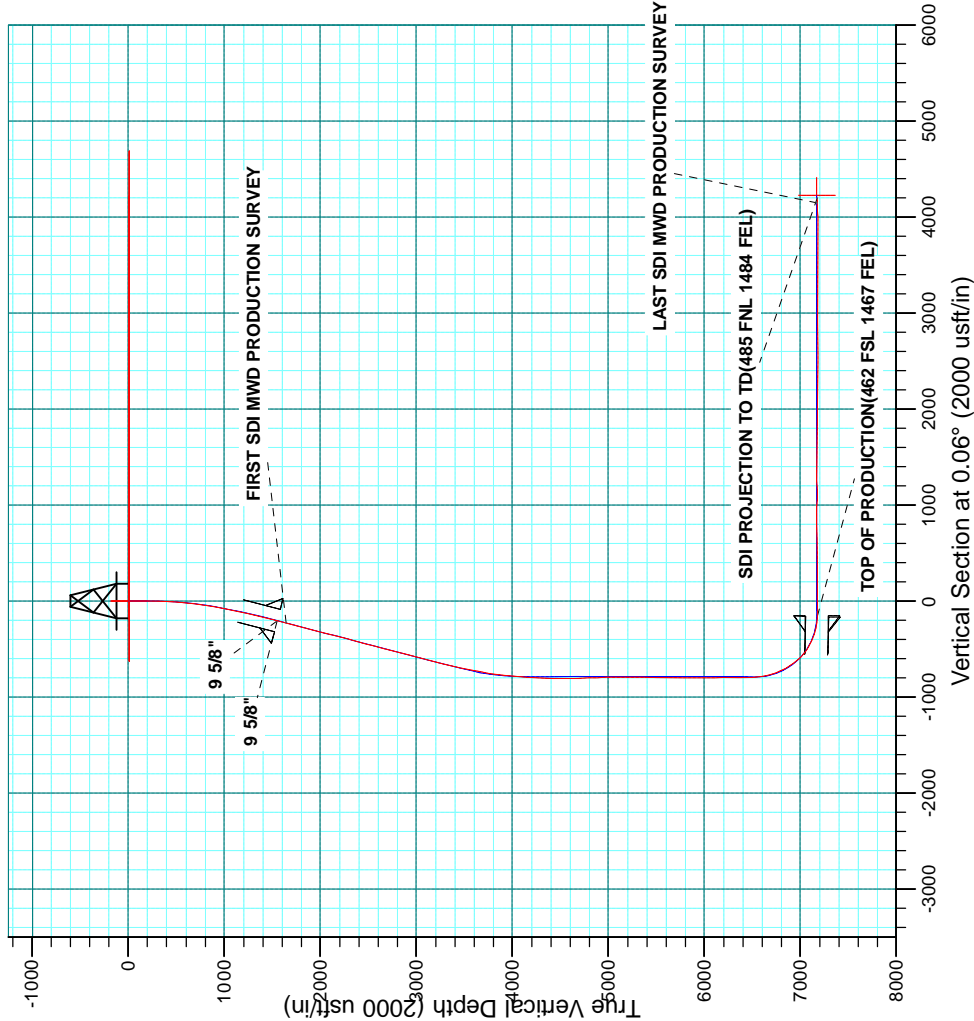


Project: WELD-NAD83-UTMFT13N
Site: 1N-65W-09 Bane Pad
Well: BANE 27N2-9HZ
Wellbore: Plan A
Design: Plan A



WELL DETAILS: BANE 27N2-9HZ					
GL 4964 & KB 25 @ 4989.00usft (HP 307)					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14548919.97	1734224.92	40.060443	-104.664736

PROJECT DETAILS: WELD-NAD83-UTMFT13N
Geodetic System: Universal Transverse Mercator (US Survey Feet)
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Zone 13N (108 W to 102 W)
Location:
System Datum: Mean Sea Level



BHL
485 FNL 1484 FEL
LAT: 40.071978
LONG: -104.664753

TOP OF PRODUCTION
462 FSL 1484 FEL
LAT: 40.060009
LONG: -104.664835

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well BANE 27N2-9HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	GL 4964 & KB 25 @ 4989.00usft (HP 307)
Site:	1N-65W-09 Bane Pad	MD Reference:	GL 4964 & KB 25 @ 4989.00usft (HP 307)
Well:	BANE 27N2-9HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Plan A	Database:	Denver Sales

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-65W-09 Bane Pad						
Site Position:		Northing:	14,548,919.51	usft	Latitude:	40.060443		
From:	Lat/Long	Easting:	1,734,104.05	usft	Longitude:	-104.665168		
Position Uncertainty:	0.00	usft	Slot Radius:	13.200	in	Grid Convergence:	0.22	°

Well	BANE 27N2-9HZ, 620' FSL 1440' FEL					
Well Position	+N/-S	0.00 usft	Northing:	14,548,919.96 usft	Latitude:	40.060443
	+E/-W	0.00 usft	Easting:	1,734,224.92 usft	Longitude:	-104.664736
Position Uncertainty		2.68 usft	Wellhead Elevation:	usft	Ground Level:	4,964.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/20/2014	8.33	66.68	52,610

Design	Plan A				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00		0.06

Survey Program	Date	6/30/2015			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
20.00	1,560.00	Survey #1 CATHEDRAL MWD SURFACE	APC_ISCWSA REV 2 MWD	Fixed:v2:standard declination	
1,669.00	11,984.00	Survey #2 SDI MWD PRODUCTION (Plan	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	

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	
20.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	
109.00	0.40	312.40	109.00	0.21	-0.23	0.21	0.45	0.45	0.00	
168.00	0.40	295.70	168.00	0.44	-0.57	0.44	0.20	0.00	-28.31	
226.00	0.70	227.30	226.00	0.29	-1.01	0.28	1.15	0.52	-117.93	
283.00	0.40	204.10	282.99	-0.13	-1.35	-0.13	0.65	-0.53	-40.70	
345.00	1.60	139.00	344.98	-0.98	-0.87	-0.98	2.38	1.94	-105.00	
409.00	2.50	145.40	408.94	-2.81	0.51	-2.81	1.45	1.41	10.00	
473.00	3.30	166.70	472.86	-5.75	1.73	-5.75	2.08	1.25	33.28	
536.00	4.50	185.40	535.72	-9.97	1.91	-9.97	2.75	1.90	29.68	

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well BANE 27N2-9HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	GL 4964 & KB 25 @ 4989.00usft (HP 307)
Site:	1N-65W-09 Bane Pad	MD Reference:	GL 4964 & KB 25 @ 4989.00usft (HP 307)
Well:	BANE 27N2-9HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Plan A	Database:	Denver Sales

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)
599.00	5.70	185.40	598.47	-15.55	1.39	-15.55	1.90	1.90	0.00
663.00	6.90	191.90	662.08	-22.48	0.29	-22.48	2.18	1.88	10.16
726.00	8.30	189.60	724.52	-30.66	-1.25	-30.66	2.27	2.22	-3.65
789.00	9.20	186.60	786.79	-40.15	-2.58	-40.15	1.60	1.43	-4.76
853.00	10.10	183.30	849.89	-50.83	-3.49	-50.84	1.65	1.41	-5.16
915.00	10.10	181.20	910.92	-61.70	-3.92	-61.70	0.59	0.00	-3.39
979.00	10.50	180.00	973.89	-73.14	-4.04	-73.14	0.71	0.63	-1.88
1,043.00	11.00	177.90	1,036.77	-85.07	-3.81	-85.08	0.99	0.78	-3.28
1,107.00	11.00	178.60	1,099.59	-97.28	-3.44	-97.28	0.21	0.00	1.09
1,171.00	11.90	181.00	1,162.32	-109.98	-3.41	-109.98	1.59	1.41	3.75
1,235.00	12.20	181.50	1,224.91	-123.34	-3.70	-123.34	0.50	0.47	0.78
1,299.00	12.30	179.60	1,287.45	-136.91	-3.83	-136.92	0.65	0.16	-2.97
1,362.00	13.60	181.30	1,348.85	-151.03	-3.95	-151.03	2.15	2.06	2.70
1,426.00	14.10	180.50	1,410.99	-166.35	-4.19	-166.35	0.84	0.78	-1.25
1,489.00	14.70	182.60	1,472.01	-182.01	-4.62	-182.01	1.26	0.95	3.33
1,560.00	14.60	183.00	1,540.70	-199.94	-5.50	-199.95	0.20	-0.14	0.56
1,575.00	14.66	182.95	1,555.22	-203.73	-5.69	-203.73	0.38	0.37	-0.37
9 5/8"									
1,669.00	15.00	182.61	1,646.09	-227.75	-6.86	-227.76	0.38	0.37	-0.36
FIRST SDI MWD PRODUCTION SURVEY									
1,763.00	14.76	183.85	1,736.93	-251.85	-8.21	-251.86	0.42	-0.26	1.32
1,858.00	14.28	183.93	1,828.90	-275.62	-9.83	-275.63	0.51	-0.51	0.08
1,953.00	15.28	184.86	1,920.75	-299.78	-11.69	-299.79	1.08	1.05	0.98
2,047.00	14.80	182.27	2,011.53	-324.12	-13.22	-324.13	0.88	-0.51	-2.76
2,141.00	13.94	180.61	2,102.59	-347.44	-13.81	-347.45	1.01	-0.91	-1.77
2,236.00	15.25	177.10	2,194.53	-371.36	-13.30	-371.37	1.66	1.38	-3.69
2,330.00	14.45	174.96	2,285.39	-395.39	-11.65	-395.40	1.03	-0.85	-2.28
2,425.00	15.03	176.80	2,377.26	-419.49	-9.92	-419.50	0.78	0.61	1.94
2,519.00	14.66	180.15	2,468.13	-443.56	-9.27	-443.57	0.99	-0.39	3.56
2,614.00	15.57	182.21	2,559.84	-468.32	-9.79	-468.33	1.11	0.96	2.17
2,709.00	14.63	182.11	2,651.56	-493.05	-10.73	-493.06	0.99	-0.99	-0.11
2,803.00	13.88	180.51	2,742.66	-516.19	-11.26	-516.20	0.90	-0.80	-1.70
2,898.00	14.14	179.40	2,834.84	-539.19	-11.24	-539.20	0.39	0.27	-1.17
2,992.00	14.50	177.98	2,925.92	-562.43	-10.71	-562.44	0.54	0.38	-1.51
3,087.00	15.85	179.43	3,017.60	-587.29	-10.16	-587.30	1.48	1.42	1.53
3,181.00	14.96	179.76	3,108.22	-612.26	-9.98	-612.27	0.95	-0.95	0.35
3,276.00	13.48	180.69	3,200.31	-635.59	-10.06	-635.60	1.58	-1.56	0.98
3,370.00	14.41	181.04	3,291.54	-658.24	-10.41	-658.25	0.99	0.99	0.37
3,465.00	13.23	182.43	3,383.79	-680.92	-11.08	-680.93	1.29	-1.24	1.46
3,559.00	11.06	181.06	3,475.68	-700.69	-11.71	-700.70	2.33	-2.31	-1.46
3,654.00	10.45	180.80	3,569.01	-718.41	-12.00	-718.42	0.64	-0.64	-0.27
3,748.00	9.37	180.36	3,661.61	-734.59	-12.16	-734.60	1.15	-1.15	-0.47
3,843.00	9.34	176.32	3,755.34	-750.01	-11.72	-750.03	0.69	-0.03	-4.25

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well BANE 27N2-9HZ
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Site:	1N-65W-09 Bane Pad	MD Reference:	GL 4964 & KB 25 @ 4989.00usft (HP 307)
Well:	BANE 27N2-9HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Plan A	Database:	Denver Sales

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)	
3,937.00	7.45	179.59	3,848.33	-763.72	-11.18	-763.73	2.07	-2.01	3.48	
4,032.00	6.21	180.04	3,942.66	-775.02	-11.14	-775.03	1.31	-1.31	0.47	
4,126.00	4.49	173.40	4,036.24	-783.76	-10.72	-783.77	1.94	-1.83	-7.06	
4,221.00	3.80	170.77	4,131.00	-790.56	-9.79	-790.57	0.75	-0.73	-2.77	
4,315.00	3.11	177.81	4,224.82	-796.18	-9.19	-796.19	0.86	-0.73	7.49	
4,410.00	4.24	179.81	4,319.63	-802.27	-9.08	-802.28	1.20	1.19	2.11	
4,504.00	1.78	210.65	4,413.50	-807.00	-9.82	-807.01	3.04	-2.62	32.81	
4,599.00	0.70	297.01	4,508.48	-808.01	-11.09	-808.02	1.97	-1.14	90.91	
4,693.00	1.10	60.00	4,602.47	-807.30	-10.82	-807.31	1.69	0.43	130.84	
4,788.00	1.87	20.00	4,697.44	-805.38	-9.50	-805.39	1.31	0.81	-42.11	
4,882.00	2.47	4.94	4,791.37	-801.92	-8.80	-801.93	0.88	0.64	-16.02	
4,977.00	1.35	30.30	4,886.32	-798.92	-8.06	-798.93	1.45	-1.18	26.69	
5,071.00	2.83	20.19	4,980.26	-795.78	-6.70	-795.79	1.62	1.57	-10.76	
5,166.00	2.46	42.45	5,075.16	-792.08	-4.51	-792.08	1.14	-0.39	23.43	
5,260.00	1.97	77.61	5,169.09	-790.24	-1.57	-790.24	1.51	-0.52	37.40	
5,355.00	1.21	188.12	5,264.07	-790.89	-0.12	-790.89	2.79	-0.80	116.33	
5,449.00	2.39	212.11	5,358.02	-793.53	-1.30	-793.53	1.46	1.26	25.52	
5,543.00	1.58	235.58	5,451.97	-795.92	-3.41	-795.92	1.20	-0.86	24.97	
5,638.00	0.83	243.60	5,546.95	-796.97	-5.11	-796.97	0.81	-0.79	8.44	
5,732.00	0.73	259.25	5,640.94	-797.38	-6.31	-797.39	0.25	-0.11	16.65	
5,827.00	0.48	283.34	5,735.93	-797.40	-7.29	-797.41	0.37	-0.26	25.36	
5,921.00	0.35	297.14	5,829.93	-797.18	-7.93	-797.19	0.17	-0.14	14.68	
6,016.00	0.12	181.60	5,924.93	-797.15	-8.19	-797.16	0.44	-0.24	-121.62	
6,110.00	0.13	220.29	6,018.93	-797.33	-8.26	-797.34	0.09	0.01	41.16	
6,205.00	0.45	287.15	6,113.93	-797.30	-8.69	-797.31	0.44	0.34	70.38	
6,299.00	0.28	237.96	6,207.93	-797.31	-9.23	-797.32	0.36	-0.18	-52.33	
6,394.00	0.37	260.05	6,302.92	-797.49	-9.73	-797.50	0.16	0.09	23.25	
6,488.00	0.40	266.52	6,396.92	-797.56	-10.36	-797.57	0.06	0.03	6.88	
6,583.00	0.58	298.72	6,491.92	-797.35	-11.11	-797.36	0.34	0.19	33.89	
6,677.00	10.21	9.36	6,585.41	-788.88	-10.17	-788.89	10.67	10.24	75.15	
6,772.00	14.97	353.79	6,678.13	-768.36	-10.13	-768.37	6.11	5.01	-16.39	
6,866.00	21.89	354.30	6,767.25	-738.82	-13.19	-738.83	7.36	7.36	0.54	
6,961.00	30.42	347.58	6,852.46	-697.62	-20.13	-697.64	9.49	8.98	-7.07	
7,055.00	35.80	350.85	6,931.18	-647.20	-29.63	-647.23	6.03	5.72	3.48	
7,150.00	44.00	358.91	7,004.04	-586.63	-34.69	-586.67	10.19	8.63	8.48	
7,244.00	57.29	0.06	7,063.52	-514.11	-35.27	-514.15	14.17	14.14	1.22	
7,339.00	64.62	2.17	7,109.61	-431.14	-33.60	-431.18	7.96	7.72	2.22	
7,433.00	70.50	3.08	7,145.48	-344.39	-29.61	-344.42	6.32	6.26	0.97	
7,528.00	79.79	359.95	7,169.82	-252.71	-27.24	-252.74	10.28	9.78	-3.29	
7,622.00	88.35	359.75	7,179.52	-159.30	-27.48	-159.33	9.11	9.11	-0.21	
7,623.23	88.37	359.74	7,179.55	-158.07	-27.49	-158.10	2.05	1.81	-0.96	
TOP OF PRODUCTION(462 FSL 1467 FEL)										
7,717.00	90.07	358.84	7,180.83	-64.32	-28.65	-64.35	2.05	1.81	-0.96	
7,811.00	90.91	2.59	7,180.02	29.65	-27.48	29.62	4.09	0.89	3.99	

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Site:	1N-65W-09 Bane Pad	MD Reference:	GL 4964 & KB 25 @ 4989.00usft (HP 307)
Well:	BANE 27N2-9HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Plan A	Database:	Denver Sales

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)
7,906.00	90.34	1.07	7,178.99	124.59	-24.45	124.57	1.71	-0.60	-1.60
8,000.00	90.94	2.40	7,177.94	218.54	-21.60	218.52	1.55	0.64	1.41
8,095.00	90.44	0.76	7,176.79	313.50	-18.98	313.48	1.80	-0.53	-1.73
8,189.00	89.06	1.69	7,177.20	407.47	-16.97	407.45	1.77	-1.47	0.99
8,284.00	90.70	1.26	7,177.40	502.44	-14.53	502.42	1.78	1.73	-0.45
8,378.00	90.17	3.49	7,176.69	596.35	-10.63	596.33	2.44	-0.56	2.37
8,473.00	91.01	3.11	7,175.71	691.18	-5.16	691.18	0.97	0.88	-0.40
8,567.00	89.87	1.72	7,174.99	785.09	-1.20	785.09	1.91	-1.21	-1.48
8,662.00	89.70	0.36	7,175.34	880.07	0.52	880.07	1.44	-0.18	-1.43
8,757.00	89.60	358.78	7,175.93	975.07	-0.19	975.07	1.67	-0.11	-1.66
8,851.00	89.46	357.88	7,176.70	1,069.02	-2.93	1,069.02	0.97	-0.15	-0.96
8,946.00	90.03	1.37	7,177.12	1,164.00	-3.55	1,164.00	3.72	0.60	3.67
9,040.00	91.61	1.30	7,175.77	1,257.97	-1.36	1,257.96	1.68	1.68	-0.07
9,135.00	90.24	359.97	7,174.24	1,352.94	-0.31	1,352.94	2.01	-1.44	-1.40
9,229.00	88.69	1.29	7,175.12	1,446.93	0.72	1,446.93	2.17	-1.65	1.40
9,324.00	88.86	0.64	7,177.15	1,541.89	2.32	1,541.89	0.71	0.18	-0.68
9,419.00	90.00	0.14	7,178.09	1,636.88	2.97	1,636.89	1.31	1.20	-0.53
9,513.00	90.81	1.19	7,177.43	1,730.87	4.06	1,730.88	1.41	0.86	1.12
9,608.00	89.50	357.23	7,177.17	1,825.84	2.75	1,825.84	4.39	-1.38	-4.17
9,702.00	89.73	357.01	7,177.80	1,919.72	-1.97	1,919.72	0.34	0.24	-0.23
9,797.00	89.06	1.29	7,178.81	2,014.68	-3.38	2,014.68	4.56	-0.71	4.51
9,891.00	90.81	2.13	7,178.91	2,108.64	-0.58	2,108.64	2.07	1.86	0.89
9,986.00	89.87	0.61	7,178.35	2,203.60	1.69	2,203.60	1.88	-0.99	-1.60
10,080.00	89.90	2.20	7,178.54	2,297.57	4.00	2,297.58	1.69	0.03	1.69
10,175.00	88.56	2.99	7,179.82	2,392.46	8.30	2,392.47	1.64	-1.41	0.83
10,269.00	87.79	0.46	7,182.81	2,486.37	11.13	2,486.38	2.81	-0.82	-2.69
10,364.00	89.23	359.80	7,185.28	2,581.33	11.34	2,581.34	1.67	1.52	-0.69
10,458.00	89.97	359.16	7,185.94	2,675.32	10.49	2,675.33	1.04	0.79	-0.68
10,553.00	91.92	359.38	7,184.37	2,770.30	9.28	2,770.31	2.07	2.05	0.23
10,647.00	90.57	1.35	7,182.33	2,864.27	9.88	2,864.28	2.54	-1.44	2.10
10,742.00	90.30	0.72	7,181.61	2,959.25	11.59	2,959.26	0.72	-0.28	-0.66
10,836.00	91.55	2.58	7,180.09	3,053.19	14.30	3,053.20	2.38	1.33	1.98
10,931.00	89.53	1.81	7,179.19	3,148.11	17.94	3,148.13	2.28	-2.13	-0.81
11,025.00	90.37	1.75	7,179.28	3,242.06	20.86	3,242.08	0.90	0.89	-0.06
11,120.00	88.89	0.27	7,179.89	3,337.04	22.53	3,337.06	2.20	-1.56	-1.56
11,214.00	88.39	358.92	7,182.12	3,431.01	21.87	3,431.03	1.53	-0.53	-1.44
11,309.00	89.87	359.80	7,183.56	3,525.99	20.81	3,526.01	1.81	1.56	0.93
11,404.00	89.29	357.69	7,184.26	3,620.96	18.73	3,620.98	2.30	-0.61	-2.22
11,498.00	89.46	357.30	7,185.28	3,714.86	14.62	3,714.88	0.45	0.18	-0.41
11,593.00	90.27	357.40	7,185.51	3,809.76	10.23	3,809.77	0.86	0.85	0.11
11,687.00	91.35	358.26	7,184.18	3,903.68	6.67	3,903.69	1.47	1.15	0.91
11,782.00	90.27	357.01	7,182.84	3,998.59	2.75	3,998.59	1.74	-1.14	-1.32
11,876.00	91.61	358.88	7,181.29	4,092.51	-0.62	4,092.51	2.45	1.43	1.99

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well BANE 27N2-9HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	GL 4964 & KB 25 @ 4989.00usft (HP 307)
Site:	1N-65W-09 Bane Pad	MD Reference:	GL 4964 & KB 25 @ 4989.00usft (HP 307)
Well:	BANE 27N2-9HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Plan A	Database:	Denver Sales

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)
11,928.00	92.46	357.56	7,179.45	4,144.45	-2.24	4,144.45	3.02	1.63	-2.54
LAST SDI MWD PRODUCTION SURVEY									
11,984.00	92.46	357.56	7,177.04	4,200.35	-4.62	4,200.34	0.00	0.00	0.00
SDI PROJECTION TO TD(485 FNL 1484 FEL)									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,575.00	1,555.22	9 5/8"	9.625	13.500	
7,623.23	7,179.55	TOP OF PRODUCTION(462 FSL 1467 FEL)	0.000	7.875	

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
1,669.00	1,646.09	-227.75	-6.86	FIRST SDI MWD PRODUCTION SURVEY	
11,928.00	7,179.45	4,144.45	-2.24	LAST SDI MWD PRODUCTION SURVEY	
11,984.00	7,177.04	4,200.35	-4.62	SDI PROJECTION TO TD(485 FNL 1484 FEL)	

Checked By: _____ Approved By: _____ Date: _____