

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

3N-67W-08 BERRY FARMS 8-8HZ PAD

BERRY FARMS 8-7HZ

Plan A

Plan: Permit Rev-2

Standard Planning Report

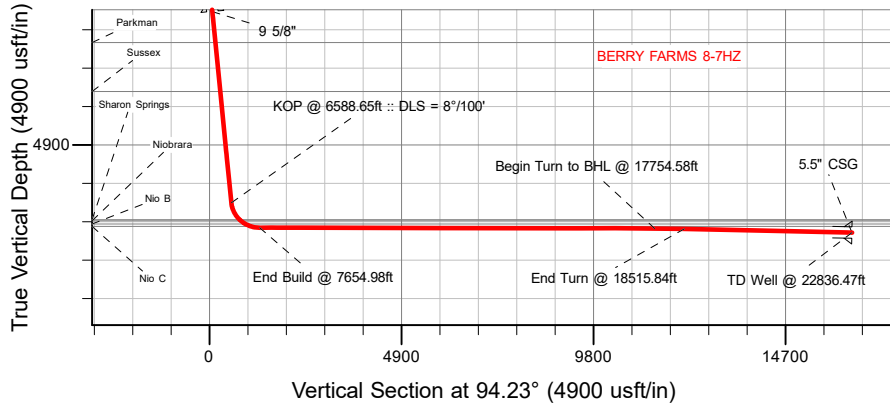
17 November, 2021

Project: WELD-NAD83-UTMFT13N
Site: 3N-67W-08 BERRY FARMS 8-8HZ PAD
Well: BERRY FARMS 8-7HZ
Wellbore: Plan A
Design: Permit Rev-2

US ROCKIES WATTENBERG PLANNING

CASING DETAILS

TVD	MD	Name	Size
1500.00	1521.76	9 5/8"	9-5/8
7140.00	22836.47	5.5" CSG	5-1/2



SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
242.00	0.00	0.00	242.00	0.00	0.00	0.00	0.00	0.00	
1289.33	15.71	163.53	1276.26	-136.83	40.45	1.50	163.53	50.44	
6588.65	15.71	163.53	6377.62	-1512.84	447.26	0.00	0.00	557.63	
7654.98	89.89	90.72	7014.00	-1692.50	1157.67	8.00	-73.44	1279.35	
17754.58	89.89	90.72	7032.76	-1820.00	11256.45	0.00	0.00	11360.03	BERRY FARMS 8-7HZ_Deflection
18515.84	88.70	102.08	7042.12	-1904.73	12011.65	1.50	96.04	12119.42	
22836.47	88.70	102.08	7140.00	-2808.77	16235.51	0.00	0.00	16398.46	BERRY FARMS 8-7HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	Northing	Easting	Latitude	Longitude
BERRY FARMS 8-7HZ_SHL	0.00	14615496.93	1666083.59	40.243720	-104.908021
BERRY FARMS 8-7HZ_LP	7014.00	14613805.63	1667243.01	40.239072	-104.903873
BERRY FARMS 8-7HZ_BHL	7140.00	14612705.00	1682322.00	40.235992	-104.849847

WELL DETAILS: BERRY FARMS 8-7HZ

GL = 4817'

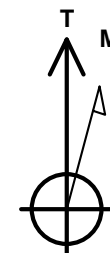
RKB = 17' @ 4834.00usft (RIG)

Plan: Permit Rev-2 (BERRY FARMS 8-7HZ/Plan A)

Date: 11/17/2021

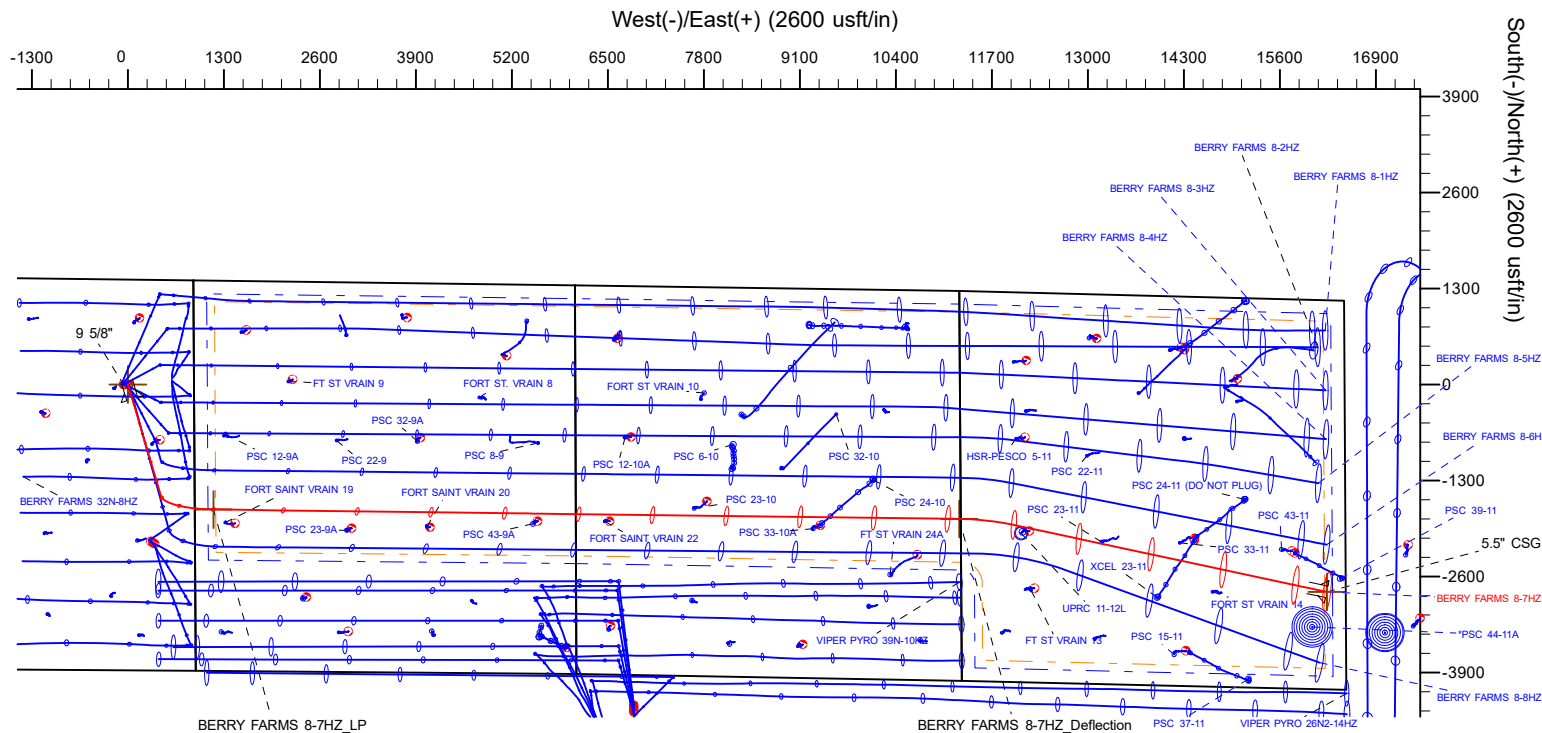
FORMATION TOP DETAILS

TVDPath	MDPath	Formation
694.00	695.06	Fox Hills
2292.00	2344.49	Parkman
3538.00	3638.84	Sussex
6810.00	7091.78	Sharon Springs
6837.00	7132.37	Niobrara
6922.00	7282.73	Nio B
6982.00	7437.64	Nio C



Azimuths to True North
Magnetic North: 7.87°

Magnetic Field
Strength: 51819.4nT
Dip Angle: 66.49°
Date: 10/24/2021
Model: IGRF2020



Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well BERRY FARMS 8-7HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4834.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4834.00usft (RIG)
Site:	3N-67W-08 BERRY FARMS 8-8HZ PAD	North Reference:	True
Well:	BERRY FARMS 8-7HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Project	WELD-NAD83-UTMFT13N		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Zone 13N (108 W to 102 W)		

Site		3N-67W-08 BERRY FARMS 8-8HZ PAD				
Site Position:		Northing:	14,615,497.59	usft	Latitude:	40.243722
From:	Lat/Long	Easting:	1,665,993.52	usft	Longitude:	-104.908344
Position Uncertainty:		0.00	usft	Slot Radius:	13-3/16	"

Well		BERRY FARMS 8-7HZ				
Well Position	+N/-S	0.00 usft	Northing:	14,615,496.93 usft	Latitude:	40.243720
	+E/-W	0.00 usft	Easting:	1,666,083.59 usft	Longitude:	-104.908022
Position Uncertainty		3.28 usft	Wellhead Elevation:	usft	Ground Level:	4,817.00 usft
Grid Convergence:		0.06 °				

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF202013	10/24/2021	7.87	66.49	51,819.36611619

Design	Permit Rev-2				
Audit Notes:					
Version:		Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	94.23	

Plan Survey Tool Program	Date	11/16/2021			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	2,000.00	Permit Rev-2 (Plan A)	APC_ISCWSA REV 2 MWD Fixed:v2:standard declination	
2	2,000.00	22,836.47	Permit Rev-2 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:Rockies, crustal dec +	

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Wellbore:	Plan A		
Design:	Permit Rev-2		

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	
242.00	0.00	0.00	242.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,289.33	15.71	163.53	1,276.26	-136.83	40.45	1.50	1.50	0.00	163.53	
6,588.65	15.71	163.53	6,377.62	-1,512.84	447.26	0.00	0.00	0.00	0.00	
7,654.98	89.89	90.72	7,014.00	-1,692.50	1,157.67	8.00	6.96	-6.83	-73.44	
17,754.58	89.89	90.72	7,032.76	-1,820.00	11,256.45	0.00	0.00	0.00	0.00	BERRY FARMS 8-7H
18,515.84	88.70	102.08	7,042.12	-1,904.73	12,011.65	1.50	-0.16	1.49	96.04	
22,836.47	88.70	102.08	7,140.00	-2,808.77	16,235.51	0.00	0.00	0.00	0.00	BERRY FARMS 8-7H

Planning Report

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Site:	3N-67W-08 BERRY FARMS 8-8HZ PAD	North Reference:	True
Well:	BERRY FARMS 8-7HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
242.00	0.00	0.00	242.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 242.00ft									
300.00	0.87	163.53	300.00	-0.42	0.12	0.16	1.50	1.50	0.00
400.00	2.37	163.53	399.95	-3.13	0.93	1.15	1.50	1.50	0.00
500.00	3.87	163.53	499.80	-8.35	2.47	3.08	1.50	1.50	0.00
600.00	5.37	163.53	599.48	-16.08	4.75	5.93	1.50	1.50	0.00
695.06	6.80	163.53	694.00	-25.74	7.61	9.49	1.50	1.50	0.00
Fox Hills									
700.00	6.87	163.53	698.90	-26.30	7.78	9.69	1.50	1.50	0.00
800.00	8.37	163.53	798.02	-39.02	11.53	14.38	1.50	1.50	0.00
900.00	9.87	163.53	896.75	-54.22	16.03	19.98	1.50	1.50	0.00
1,000.00	11.37	163.53	995.03	-71.89	21.25	26.50	1.50	1.50	0.00
1,100.00	12.87	163.53	1,092.80	-92.02	27.21	33.92	1.50	1.50	0.00
1,200.00	14.37	163.53	1,189.99	-114.60	33.88	42.24	1.50	1.50	0.00
1,289.33	15.71	163.53	1,276.26	-136.83	40.45	50.44	1.50	1.50	0.00
Hold Tangent @ 1289.33ft									
1,300.00	15.71	163.53	1,286.53	-139.60	41.27	51.46	0.00	0.00	0.00
1,400.00	15.71	163.53	1,382.79	-165.57	48.95	61.03	0.00	0.00	0.00
1,500.00	15.71	163.53	1,479.06	-191.53	56.63	70.60	0.00	0.00	0.00
1,521.76	15.71	163.53	1,500.00	-197.18	58.30	72.68	0.00	0.00	0.00
9 5/8"									
1,600.00	15.71	163.53	1,575.32	-217.50	64.30	80.17	0.00	0.00	0.00
1,700.00	15.71	163.53	1,671.59	-243.47	71.98	89.74	0.00	0.00	0.00
1,800.00	15.71	163.53	1,767.85	-269.43	79.66	99.31	0.00	0.00	0.00
1,900.00	15.71	163.53	1,864.11	-295.40	87.33	108.88	0.00	0.00	0.00
2,000.00	15.71	163.53	1,960.38	-321.36	95.01	118.45	0.00	0.00	0.00
2,100.00	15.71	163.53	2,056.64	-347.33	102.69	128.03	0.00	0.00	0.00
2,200.00	15.71	163.53	2,152.91	-373.30	110.36	137.60	0.00	0.00	0.00
2,300.00	15.71	163.53	2,249.17	-399.26	118.04	147.17	0.00	0.00	0.00
2,344.49	15.71	163.53	2,292.00	-410.81	121.45	151.43	0.00	0.00	0.00
Parkman									
2,400.00	15.71	163.53	2,345.44	-425.23	125.72	156.74	0.00	0.00	0.00
2,500.00	15.71	163.53	2,441.70	-451.19	133.39	166.31	0.00	0.00	0.00
2,600.00	15.71	163.53	2,537.97	-477.16	141.07	175.88	0.00	0.00	0.00
2,700.00	15.71	163.53	2,634.23	-503.12	148.75	185.45	0.00	0.00	0.00
2,800.00	15.71	163.53	2,730.49	-529.09	156.42	195.02	0.00	0.00	0.00
2,900.00	15.71	163.53	2,826.76	-555.06	164.10	204.59	0.00	0.00	0.00
3,000.00	15.71	163.53	2,923.02	-581.02	171.78	214.16	0.00	0.00	0.00
3,100.00	15.71	163.53	3,019.29	-606.99	179.45	223.74	0.00	0.00	0.00
3,200.00	15.71	163.53	3,115.55	-632.95	187.13	233.31	0.00	0.00	0.00
3,300.00	15.71	163.53	3,211.82	-658.92	194.81	242.88	0.00	0.00	0.00
3,400.00	15.71	163.53	3,308.08	-684.89	202.48	252.45	0.00	0.00	0.00
3,500.00	15.71	163.53	3,404.35	-710.85	210.16	262.02	0.00	0.00	0.00
3,600.00	15.71	163.53	3,500.61	-736.82	217.84	271.59	0.00	0.00	0.00
3,638.84	15.71	163.53	3,538.00	-746.90	220.82	275.31	0.00	0.00	0.00
Sussex									
3,700.00	15.71	163.53	3,596.87	-762.78	225.51	281.16	0.00	0.00	0.00
3,800.00	15.71	163.53	3,693.14	-788.75	233.19	290.73	0.00	0.00	0.00
3,900.00	15.71	163.53	3,789.40	-814.71	240.87	300.30	0.00	0.00	0.00
4,000.00	15.71	163.53	3,885.67	-840.68	248.54	309.87	0.00	0.00	0.00

Planning Report

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Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4834.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4834.00usft (RIG)
Site:	3N-67W-08 BERRY FARMS 8-8HZ PAD	North Reference:	True
Well:	BERRY FARMS 8-7HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

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	15.71	163.53	3,981.93	-866.65	256.22	319.44	0.00	0.00	0.00
4,200.00	15.71	163.53	4,078.20	-892.61	263.90	329.02	0.00	0.00	0.00
4,300.00	15.71	163.53	4,174.46	-918.58	271.57	338.59	0.00	0.00	0.00
4,400.00	15.71	163.53	4,270.73	-944.54	279.25	348.16	0.00	0.00	0.00
4,500.00	15.71	163.53	4,366.99	-970.51	286.93	357.73	0.00	0.00	0.00
4,600.00	15.71	163.53	4,463.25	-996.48	294.60	367.30	0.00	0.00	0.00
4,700.00	15.71	163.53	4,559.52	-1,022.44	302.28	376.87	0.00	0.00	0.00
4,800.00	15.71	163.53	4,655.78	-1,048.41	309.96	386.44	0.00	0.00	0.00
4,900.00	15.71	163.53	4,752.05	-1,074.37	317.63	396.01	0.00	0.00	0.00
5,000.00	15.71	163.53	4,848.31	-1,100.34	325.31	405.58	0.00	0.00	0.00
5,100.00	15.71	163.53	4,944.58	-1,126.30	332.99	415.15	0.00	0.00	0.00
5,200.00	15.71	163.53	5,040.84	-1,152.27	340.66	424.73	0.00	0.00	0.00
5,300.00	15.71	163.53	5,137.11	-1,178.24	348.34	434.30	0.00	0.00	0.00
5,400.00	15.71	163.53	5,233.37	-1,204.20	356.02	443.87	0.00	0.00	0.00
5,500.00	15.71	163.53	5,329.63	-1,230.17	363.69	453.44	0.00	0.00	0.00
5,600.00	15.71	163.53	5,425.90	-1,256.13	371.37	463.01	0.00	0.00	0.00
5,700.00	15.71	163.53	5,522.16	-1,282.10	379.05	472.58	0.00	0.00	0.00
5,800.00	15.71	163.53	5,618.43	-1,308.07	386.72	482.15	0.00	0.00	0.00
5,900.00	15.71	163.53	5,714.69	-1,334.03	394.40	491.72	0.00	0.00	0.00
6,000.00	15.71	163.53	5,810.96	-1,360.00	402.07	501.29	0.00	0.00	0.00
6,100.00	15.71	163.53	5,907.22	-1,385.96	409.75	510.86	0.00	0.00	0.00
6,200.00	15.71	163.53	6,003.49	-1,411.93	417.43	520.44	0.00	0.00	0.00
6,300.00	15.71	163.53	6,099.75	-1,437.89	425.10	530.01	0.00	0.00	0.00
6,400.00	15.71	163.53	6,196.01	-1,463.86	432.78	539.58	0.00	0.00	0.00
6,500.00	15.71	163.53	6,292.28	-1,489.83	440.46	549.15	0.00	0.00	0.00
6,588.65	15.71	163.53	6,377.62	-1,512.84	447.26	557.63	0.00	0.00	0.00
KOP @ 6588.65ft :: DLS = 8°/100'									
6,600.00	15.99	160.37	6,388.54	-1,515.79	448.22	558.81	8.00	2.48	-27.85
6,650.00	17.73	147.91	6,436.40	-1,528.73	454.59	566.11	8.00	3.47	-24.93
6,700.00	20.10	137.94	6,483.71	-1,541.57	464.39	576.83	8.00	4.75	-19.92
6,750.00	22.92	130.17	6,530.23	-1,554.23	477.59	590.93	8.00	5.63	-15.55
6,800.00	26.03	124.09	6,575.74	-1,566.66	494.12	608.33	8.00	6.22	-12.17
6,850.00	29.34	119.26	6,620.02	-1,578.80	513.90	628.95	8.00	6.63	-9.66
6,900.00	32.80	115.34	6,662.84	-1,590.59	536.83	652.70	8.00	6.91	-7.82
6,950.00	36.35	112.11	6,704.01	-1,601.97	562.81	679.44	8.00	7.11	-6.47
7,000.00	39.98	109.39	6,743.32	-1,612.88	591.70	709.06	8.00	7.26	-5.45
7,050.00	43.67	107.05	6,780.57	-1,623.28	623.37	741.41	8.00	7.37	-4.68
7,091.78	46.78	105.33	6,810.00	-1,631.54	651.85	770.42	8.00	7.45	-4.13
Sharon Springs									
7,100.00	47.39	105.01	6,815.60	-1,633.11	657.66	776.33	8.00	7.48	-3.87
7,132.37	49.82	103.81	6,837.00	-1,639.15	681.18	800.23	8.00	7.51	-3.69
Niobrara									
7,150.00	51.15	103.20	6,848.22	-1,642.32	694.40	813.65	8.00	7.53	-3.49
7,200.00	54.93	101.57	6,878.28	-1,650.88	733.42	853.19	8.00	7.57	-3.26
7,250.00	58.73	100.09	6,905.63	-1,658.73	774.52	894.76	8.00	7.61	-2.97
7,282.73	61.23	99.18	6,922.00	-1,663.46	802.46	922.97	8.00	7.63	-2.77
Nio B									
7,300.00	62.55	98.72	6,930.14	-1,665.83	817.51	938.15	8.00	7.65	-2.67
7,350.00	66.38	97.44	6,951.68	-1,672.17	862.17	983.16	8.00	7.66	-2.55
7,400.00	70.22	96.24	6,970.17	-1,677.69	908.29	1,029.56	8.00	7.68	-2.41
7,437.64	73.12	95.37	6,982.00	-1,681.30	943.83	1,065.27	8.00	7.70	-2.30
Nio C									
7,450.00	74.07	95.09	6,985.49	-1,682.39	955.64	1,077.13	8.00	7.70	-2.26

Planning Report

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Wellbore:	Plan A		
Design:	Permit Rev-2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,500.00	77.93	93.99	6,997.59	-1,686.22	1,003.99	1,125.63	8.00	7.71	-2.21
7,550.00	81.78	92.92	7,006.39	-1,689.18	1,053.11	1,174.84	8.00	7.72	-2.14
7,600.00	85.65	91.87	7,011.86	-1,691.26	1,102.76	1,224.50	8.00	7.72	-2.10
7,654.98	89.89	90.72	7,014.00	-1,692.50	1,157.67	1,279.35	8.00	7.73	-2.08
End Build @ 7654.98ft									
7,700.00	89.89	90.72	7,014.09	-1,693.07	1,202.68	1,324.29	0.00	0.00	0.00
7,800.00	89.89	90.72	7,014.27	-1,694.33	1,302.67	1,424.10	0.00	0.00	0.00
7,900.00	89.89	90.72	7,014.46	-1,695.59	1,402.67	1,523.91	0.00	0.00	0.00
8,000.00	89.89	90.72	7,014.64	-1,696.85	1,502.66	1,623.73	0.00	0.00	0.00
8,100.00	89.89	90.72	7,014.83	-1,698.12	1,602.65	1,723.54	0.00	0.00	0.00
8,200.00	89.89	90.72	7,015.01	-1,699.38	1,702.64	1,823.35	0.00	0.00	0.00
8,300.00	89.89	90.72	7,015.20	-1,700.64	1,802.63	1,923.16	0.00	0.00	0.00
8,400.00	89.89	90.72	7,015.39	-1,701.90	1,902.63	2,022.98	0.00	0.00	0.00
8,500.00	89.89	90.72	7,015.57	-1,703.17	2,002.62	2,122.79	0.00	0.00	0.00
8,600.00	89.89	90.72	7,015.76	-1,704.43	2,102.61	2,222.60	0.00	0.00	0.00
8,700.00	89.89	90.72	7,015.94	-1,705.69	2,202.60	2,322.41	0.00	0.00	0.00
8,800.00	89.89	90.72	7,016.13	-1,706.95	2,302.59	2,422.23	0.00	0.00	0.00
8,900.00	89.89	90.72	7,016.31	-1,708.22	2,402.58	2,522.04	0.00	0.00	0.00
9,000.00	89.89	90.72	7,016.50	-1,709.48	2,502.58	2,621.85	0.00	0.00	0.00
9,100.00	89.89	90.72	7,016.69	-1,710.74	2,602.57	2,721.66	0.00	0.00	0.00
9,200.00	89.89	90.72	7,016.87	-1,712.00	2,702.56	2,821.48	0.00	0.00	0.00
9,300.00	89.89	90.72	7,017.06	-1,713.27	2,802.55	2,921.29	0.00	0.00	0.00
9,400.00	89.89	90.72	7,017.24	-1,714.53	2,902.54	3,021.10	0.00	0.00	0.00
9,500.00	89.89	90.72	7,017.43	-1,715.79	3,002.54	3,120.91	0.00	0.00	0.00
9,600.00	89.89	90.72	7,017.62	-1,717.05	3,102.53	3,220.73	0.00	0.00	0.00
9,700.00	89.89	90.72	7,017.80	-1,718.32	3,202.52	3,320.54	0.00	0.00	0.00
9,800.00	89.89	90.72	7,017.99	-1,719.58	3,302.51	3,420.35	0.00	0.00	0.00
9,900.00	89.89	90.72	7,018.17	-1,720.84	3,402.50	3,520.16	0.00	0.00	0.00
10,000.00	89.89	90.72	7,018.36	-1,722.10	3,502.50	3,619.98	0.00	0.00	0.00
10,100.00	89.89	90.72	7,018.54	-1,723.37	3,602.49	3,719.79	0.00	0.00	0.00
10,200.00	89.89	90.72	7,018.73	-1,724.63	3,702.48	3,819.60	0.00	0.00	0.00
10,300.00	89.89	90.72	7,018.92	-1,725.89	3,802.47	3,919.42	0.00	0.00	0.00
10,400.00	89.89	90.72	7,019.10	-1,727.15	3,902.46	4,019.23	0.00	0.00	0.00
10,500.00	89.89	90.72	7,019.29	-1,728.42	4,002.45	4,119.04	0.00	0.00	0.00
10,600.00	89.89	90.72	7,019.47	-1,729.68	4,102.45	4,218.85	0.00	0.00	0.00
10,700.00	89.89	90.72	7,019.66	-1,730.94	4,202.44	4,318.67	0.00	0.00	0.00
10,800.00	89.89	90.72	7,019.84	-1,732.20	4,302.43	4,418.48	0.00	0.00	0.00
10,900.00	89.89	90.72	7,020.03	-1,733.47	4,402.42	4,518.29	0.00	0.00	0.00
11,000.00	89.89	90.72	7,020.22	-1,734.73	4,502.41	4,618.10	0.00	0.00	0.00
11,100.00	89.89	90.72	7,020.40	-1,735.99	4,602.41	4,717.92	0.00	0.00	0.00
11,200.00	89.89	90.72	7,020.59	-1,737.25	4,702.40	4,817.73	0.00	0.00	0.00
11,300.00	89.89	90.72	7,020.77	-1,738.51	4,802.39	4,917.54	0.00	0.00	0.00
11,400.00	89.89	90.72	7,020.96	-1,739.78	4,902.38	5,017.35	0.00	0.00	0.00
11,500.00	89.89	90.72	7,021.14	-1,741.04	5,002.37	5,117.17	0.00	0.00	0.00
11,600.00	89.89	90.72	7,021.33	-1,742.30	5,102.37	5,216.98	0.00	0.00	0.00
11,700.00	89.89	90.72	7,021.52	-1,743.56	5,202.36	5,316.79	0.00	0.00	0.00
11,800.00	89.89	90.72	7,021.70	-1,744.83	5,302.35	5,416.60	0.00	0.00	0.00
11,900.00	89.89	90.72	7,021.89	-1,746.09	5,402.34	5,516.42	0.00	0.00	0.00
12,000.00	89.89	90.72	7,022.07	-1,747.35	5,502.33	5,616.23	0.00	0.00	0.00
12,100.00	89.89	90.72	7,022.26	-1,748.61	5,602.32	5,716.04	0.00	0.00	0.00
12,200.00	89.89	90.72	7,022.45	-1,749.88	5,702.32	5,815.85	0.00	0.00	0.00
12,300.00	89.89	90.72	7,022.63	-1,751.14	5,802.31	5,915.67	0.00	0.00	0.00
12,400.00	89.89	90.72	7,022.82	-1,752.40	5,902.30	6,015.48	0.00	0.00	0.00
12,500.00	89.89	90.72	7,023.00	-1,753.66	6,002.29	6,115.29	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well BERRY FARMS 8-7HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4834.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4834.00usft (RIG)
Site:	3N-67W-08 BERRY FARMS 8-8HZ PAD	North Reference:	True
Well:	BERRY FARMS 8-7HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

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)	
12,600.00	89.89	90.72	7,023.19	-1,754.93	6,102.28	6,215.11	0.00	0.00	0.00	
12,700.00	89.89	90.72	7,023.37	-1,756.19	6,202.28	6,314.92	0.00	0.00	0.00	
12,800.00	89.89	90.72	7,023.56	-1,757.45	6,302.27	6,414.73	0.00	0.00	0.00	
12,900.00	89.89	90.72	7,023.75	-1,758.71	6,402.26	6,514.54	0.00	0.00	0.00	
13,000.00	89.89	90.72	7,023.93	-1,759.98	6,502.25	6,614.36	0.00	0.00	0.00	
13,100.00	89.89	90.72	7,024.12	-1,761.24	6,602.24	6,714.17	0.00	0.00	0.00	
13,200.00	89.89	90.72	7,024.30	-1,762.50	6,702.23	6,813.98	0.00	0.00	0.00	
13,300.00	89.89	90.72	7,024.49	-1,763.76	6,802.23	6,913.79	0.00	0.00	0.00	
13,400.00	89.89	90.72	7,024.67	-1,765.03	6,902.22	7,013.61	0.00	0.00	0.00	
13,500.00	89.89	90.72	7,024.86	-1,766.29	7,002.21	7,113.42	0.00	0.00	0.00	
13,600.00	89.89	90.72	7,025.05	-1,767.55	7,102.20	7,213.23	0.00	0.00	0.00	
13,700.00	89.89	90.72	7,025.23	-1,768.81	7,202.19	7,313.04	0.00	0.00	0.00	
13,800.00	89.89	90.72	7,025.42	-1,770.08	7,302.19	7,412.86	0.00	0.00	0.00	
13,900.00	89.89	90.72	7,025.60	-1,771.34	7,402.18	7,512.67	0.00	0.00	0.00	
14,000.00	89.89	90.72	7,025.79	-1,772.60	7,502.17	7,612.48	0.00	0.00	0.00	
14,100.00	89.89	90.72	7,025.97	-1,773.86	7,602.16	7,712.29	0.00	0.00	0.00	
14,200.00	89.89	90.72	7,026.16	-1,775.13	7,702.15	7,812.11	0.00	0.00	0.00	
14,300.00	89.89	90.72	7,026.35	-1,776.39	7,802.15	7,911.92	0.00	0.00	0.00	
14,400.00	89.89	90.72	7,026.53	-1,777.65	7,902.14	8,011.73	0.00	0.00	0.00	
14,500.00	89.89	90.72	7,026.72	-1,778.91	8,002.13	8,111.54	0.00	0.00	0.00	
14,600.00	89.89	90.72	7,026.90	-1,780.18	8,102.12	8,211.36	0.00	0.00	0.00	
14,700.00	89.89	90.72	7,027.09	-1,781.44	8,202.11	8,311.17	0.00	0.00	0.00	
14,800.00	89.89	90.72	7,027.28	-1,782.70	8,302.10	8,410.98	0.00	0.00	0.00	
14,900.00	89.89	90.72	7,027.46	-1,783.96	8,402.10	8,510.79	0.00	0.00	0.00	
15,000.00	89.89	90.72	7,027.65	-1,785.23	8,502.09	8,610.61	0.00	0.00	0.00	
15,100.00	89.89	90.72	7,027.83	-1,786.49	8,602.08	8,710.42	0.00	0.00	0.00	
15,200.00	89.89	90.72	7,028.02	-1,787.75	8,702.07	8,810.23	0.00	0.00	0.00	
15,300.00	89.89	90.72	7,028.20	-1,789.01	8,802.06	8,910.05	0.00	0.00	0.00	
15,400.00	89.89	90.72	7,028.39	-1,790.27	8,902.06	9,009.86	0.00	0.00	0.00	
15,500.00	89.89	90.72	7,028.58	-1,791.54	9,002.05	9,109.67	0.00	0.00	0.00	
15,600.00	89.89	90.72	7,028.76	-1,792.80	9,102.04	9,209.48	0.00	0.00	0.00	
15,700.00	89.89	90.72	7,028.95	-1,794.06	9,202.03	9,309.30	0.00	0.00	0.00	
15,800.00	89.89	90.72	7,029.13	-1,795.32	9,302.02	9,409.11	0.00	0.00	0.00	
15,900.00	89.89	90.72	7,029.32	-1,796.59	9,402.02	9,508.92	0.00	0.00	0.00	
16,000.00	89.89	90.72	7,029.50	-1,797.85	9,502.01	9,608.73	0.00	0.00	0.00	
16,100.00	89.89	90.72	7,029.69	-1,799.11	9,602.00	9,708.55	0.00	0.00	0.00	
16,200.00	89.89	90.72	7,029.88	-1,800.37	9,701.99	9,808.36	0.00	0.00	0.00	
16,300.00	89.89	90.72	7,030.06	-1,801.64	9,801.98	9,908.17	0.00	0.00	0.00	
16,400.00	89.89	90.72	7,030.25	-1,802.90	9,901.97	10,007.98	0.00	0.00	0.00	
16,500.00	89.89	90.72	7,030.43	-1,804.16	10,001.97	10,107.80	0.00	0.00	0.00	
16,600.00	89.89	90.72	7,030.62	-1,805.42	10,101.96	10,207.61	0.00	0.00	0.00	
16,700.00	89.89	90.72	7,030.81	-1,806.69	10,201.95	10,307.42	0.00	0.00	0.00	
16,800.00	89.89	90.72	7,030.99	-1,807.95	10,301.94	10,407.23	0.00	0.00	0.00	
16,900.00	89.89	90.72	7,031.18	-1,809.21	10,401.93	10,507.05	0.00	0.00	0.00	
17,000.00	89.89	90.72	7,031.36	-1,810.47	10,501.93	10,606.86	0.00	0.00	0.00	
17,100.00	89.89	90.72	7,031.55	-1,811.74	10,601.92	10,706.67	0.00	0.00	0.00	
17,200.00	89.89	90.72	7,031.73	-1,813.00	10,701.91	10,806.48	0.00	0.00	0.00	
17,300.00	89.89	90.72	7,031.92	-1,814.26	10,801.90	10,906.30	0.00	0.00	0.00	
17,400.00	89.89	90.72	7,032.11	-1,815.52	10,901.89	11,006.11	0.00	0.00	0.00	
17,500.00	89.89	90.72	7,032.29	-1,816.79	11,001.88	11,105.92	0.00	0.00	0.00	
17,600.00	89.89	90.72	7,032.48	-1,818.05	11,101.88	11,205.74	0.00	0.00	0.00	
17,700.00	89.89	90.72	7,032.66	-1,819.31	11,201.87	11,305.55	0.00	0.00	0.00	
17,754.58	89.89	90.72	7,032.76	-1,820.00	11,256.45	11,360.03	0.00	0.00	0.00	

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well BERRY FARMS 8-7HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4834.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4834.00usft (RIG)
Site:	3N-67W-08 BERRY FARMS 8-8HZ PAD	North Reference:	True
Well:	BERRY FARMS 8-7HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

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)
Begin Turn to BHL @ 17754.58ft									
17,800.00	89.82	91.40	7,032.88	-1,820.84	11,301.86	11,405.38	1.50	-0.16	1.49
17,900.00	89.66	92.89	7,033.33	-1,824.59	11,401.78	11,505.31	1.50	-0.16	1.49
18,000.00	89.51	94.38	7,034.05	-1,830.93	11,501.57	11,605.29	1.50	-0.16	1.49
18,100.00	89.35	95.88	7,035.05	-1,839.87	11,601.17	11,705.27	1.50	-0.16	1.49
18,200.00	89.19	97.37	7,036.32	-1,851.40	11,700.49	11,805.18	1.50	-0.16	1.49
18,300.00	89.04	98.86	7,037.86	-1,865.52	11,799.47	11,904.93	1.50	-0.16	1.49
18,400.00	88.88	100.35	7,039.68	-1,882.20	11,898.05	12,004.47	1.50	-0.16	1.49
18,500.00	88.73	101.84	7,041.77	-1,901.45	11,996.16	12,103.73	1.50	-0.15	1.49
18,515.84	88.70	102.08	7,042.12	-1,904.73	12,011.65	12,119.42	1.50	-0.15	1.49
End Turn @ 18515.84ft									
18,600.00	88.70	102.08	7,044.03	-1,922.34	12,093.92	12,202.77	0.00	0.00	0.00
18,700.00	88.70	102.08	7,046.30	-1,943.26	12,191.68	12,301.81	0.00	0.00	0.00
18,800.00	88.70	102.08	7,048.56	-1,964.19	12,289.44	12,400.85	0.00	0.00	0.00
18,900.00	88.70	102.08	7,050.83	-1,985.11	12,387.20	12,499.88	0.00	0.00	0.00
19,000.00	88.70	102.08	7,053.09	-2,006.03	12,484.97	12,598.92	0.00	0.00	0.00
19,100.00	88.70	102.08	7,055.36	-2,026.96	12,582.73	12,697.96	0.00	0.00	0.00
19,200.00	88.70	102.08	7,057.62	-2,047.88	12,680.49	12,797.00	0.00	0.00	0.00
19,300.00	88.70	102.08	7,059.89	-2,068.80	12,778.25	12,896.03	0.00	0.00	0.00
19,400.00	88.70	102.08	7,062.15	-2,089.73	12,876.01	12,995.07	0.00	0.00	0.00
19,500.00	88.70	102.08	7,064.42	-2,110.65	12,973.77	13,094.11	0.00	0.00	0.00
19,600.00	88.70	102.08	7,066.68	-2,131.58	13,071.53	13,193.15	0.00	0.00	0.00
19,700.00	88.70	102.08	7,068.95	-2,152.50	13,169.29	13,292.18	0.00	0.00	0.00
19,800.00	88.70	102.08	7,071.21	-2,173.42	13,267.05	13,391.22	0.00	0.00	0.00
19,900.00	88.70	102.08	7,073.48	-2,194.35	13,364.81	13,490.26	0.00	0.00	0.00
20,000.00	88.70	102.08	7,075.75	-2,215.27	13,462.57	13,589.29	0.00	0.00	0.00
20,100.00	88.70	102.08	7,078.01	-2,236.20	13,560.33	13,688.33	0.00	0.00	0.00
20,200.00	88.70	102.08	7,080.28	-2,257.12	13,658.09	13,787.37	0.00	0.00	0.00
20,300.00	88.70	102.08	7,082.54	-2,278.04	13,755.85	13,886.41	0.00	0.00	0.00
20,400.00	88.70	102.08	7,084.81	-2,298.97	13,853.61	13,985.44	0.00	0.00	0.00
20,500.00	88.70	102.08	7,087.07	-2,319.89	13,951.37	14,084.48	0.00	0.00	0.00
20,600.00	88.70	102.08	7,089.34	-2,340.81	14,049.13	14,183.52	0.00	0.00	0.00
20,700.00	88.70	102.08	7,091.60	-2,361.74	14,146.89	14,282.56	0.00	0.00	0.00
20,800.00	88.70	102.08	7,093.87	-2,382.66	14,244.65	14,381.59	0.00	0.00	0.00
20,900.00	88.70	102.08	7,096.13	-2,403.59	14,342.41	14,480.63	0.00	0.00	0.00
21,000.00	88.70	102.08	7,098.40	-2,424.51	14,440.17	14,579.67	0.00	0.00	0.00
21,100.00	88.70	102.08	7,100.66	-2,445.43	14,537.93	14,678.70	0.00	0.00	0.00
21,200.00	88.70	102.08	7,102.93	-2,466.36	14,635.69	14,777.74	0.00	0.00	0.00
21,300.00	88.70	102.08	7,105.19	-2,487.28	14,733.45	14,876.78	0.00	0.00	0.00
21,400.00	88.70	102.08	7,107.46	-2,508.21	14,831.21	14,975.82	0.00	0.00	0.00
21,500.00	88.70	102.08	7,109.73	-2,529.13	14,928.97	15,074.85	0.00	0.00	0.00
21,600.00	88.70	102.08	7,111.99	-2,550.05	15,026.73	15,173.89	0.00	0.00	0.00
21,700.00	88.70	102.08	7,114.26	-2,570.98	15,124.49	15,272.93	0.00	0.00	0.00
21,800.00	88.70	102.08	7,116.52	-2,591.90	15,222.25	15,371.97	0.00	0.00	0.00
21,900.00	88.70	102.08	7,118.79	-2,612.83	15,320.01	15,471.00	0.00	0.00	0.00
22,000.00	88.70	102.08	7,121.05	-2,633.75	15,417.77	15,570.04	0.00	0.00	0.00
22,100.00	88.70	102.08	7,123.32	-2,654.67	15,515.53	15,669.08	0.00	0.00	0.00
22,200.00	88.70	102.08	7,125.58	-2,675.60	15,613.29	15,768.11	0.00	0.00	0.00
22,300.00	88.70	102.08	7,127.85	-2,696.52	15,711.05	15,867.15	0.00	0.00	0.00
22,400.00	88.70	102.08	7,130.11	-2,717.44	15,808.81	15,966.19	0.00	0.00	0.00
22,500.00	88.70	102.08	7,132.38	-2,738.37	15,906.57	16,065.23	0.00	0.00	0.00
22,600.00	88.70	102.08	7,134.64	-2,759.29	16,004.33	16,164.26	0.00	0.00	0.00
22,700.00	88.70	102.08	7,136.91	-2,780.22	16,102.09	16,263.30	0.00	0.00	0.00
22,800.00	88.70	102.08	7,139.17	-2,801.14	16,199.85	16,362.34	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well BERRY FARMS 8-7HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4834.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4834.00usft (RIG)
Site:	3N-67W-08 BERRY FARMS 8-8HZ PAD	North Reference:	True
Well:	BERRY FARMS 8-7HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

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)
22,836.47	88.70	102.08	7,140.00	-2,808.77	16,235.51	16,398.46	0.00	0.00	0.00
TD Well @ 22836.47ft									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,521.76	1,500.00	9 5/8"	9-5/8	13-1/2	
22,836.47	7,140.00	5.5" CSG	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
695.06	694.00	Fox Hills				
2,344.49	2,292.00	Parkman				
3,638.84	3,538.00	Sussex				
7,091.78	6,810.00	Sharon Springs				
7,132.37	6,837.00	Niobrara				
7,282.73	6,922.00	Nio B				
7,437.64	6,982.00	Nio C				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
242.00	242.00	0.00	0.00	Begin Nudge @ 242.00ft	
1,289.33	1,276.26	-136.83	40.45	Hold Tangent @ 1289.33ft	
6,588.65	6,377.62	-1,512.84	447.26	KOP @ 6588.65ft :: DLS = 8°/100'	
7,654.98	7,014.00	-1,692.50	1,157.67	End Build @ 7654.98ft	
17,754.58	7,032.76	-1,820.00	11,256.45	Begin Turn to BHL @ 17754.58ft	
18,515.84	7,042.12	-1,904.73	12,011.65	End Turn @ 18515.84ft	
22,836.47	7,140.00	-2,808.77	16,235.51	TD Well @ 22836.47ft	