

US ROCKIES WATTENBERG PLANNING

**LARIMER-NAD83-UTMFT13N
5N-68W-13 FOLLEY 9-13HZ PAD
FOLLEY 13-8HZ**

Plan A

Plan: Permit Rev-4

SHL Lat/Long: 40.398287°/-104.946353°
Survey Program: MWD+IFR+MSA

Standard Planning Report

03 January, 2019

Project: LARIMER-NAD83-UTMFT13N
Site: 5N-68W-13 FOLLEY 9-13HZ PAD
Well: FOLLEY 13-8HZ
Wellbore: Plan A
Design: Permit Rev-4

US ROCKIES WATTENBERG PLANNING

CASING DETAILS

TVD	MD	Size
1500.00	1522.98	9-5/8
6844.00	7412.71	5-1/2

WELL DETAILS: FOLLEY 13-8HZ

GL = 4905.00

RKB = 17' @ 4922.00usft (Drilling Rig)

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	1416.67	17.50	109.45	1398.61	-58.87	166.70	1.50	109.45	-166.97	
4	4216.67	17.50	109.45	4069.02	-339.23	960.63	0.00	0.00	-962.21	
5	5091.67	0.00	0.00	4930.48	-383.38	1085.65	2.00	180.00	-1087.45	
6	6288.99	0.00	0.00	6127.80	-383.38	1085.65	0.00	0.00	-1087.45	
7	7412.71	89.90	270.27	6844.00	-380.00	370.74	8.00	270.27	-372.53	
8	20276.71	89.90	270.27	6867.00	-319.18	-12493.09	0.00	0.00	12491.45	FOLLEY MID 13-8HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
FOLLEY MID 13-8HZ_SHL	0.00	0.00	0.00	40.398287	-104.946353
FOLLEY MID 13-8HZ_BHL	6867.00	-319.18	-12493.09	40.397403	-104.991224

SHL
2118' FSL
450' FEL

HEEL
1745' FSL
75' FEL

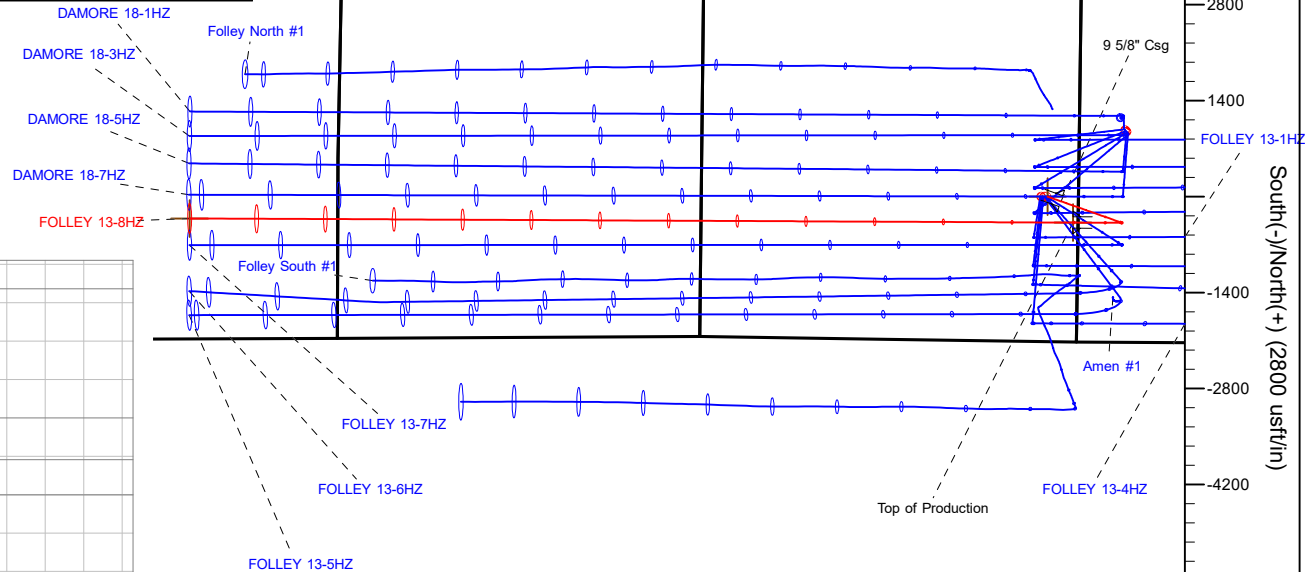
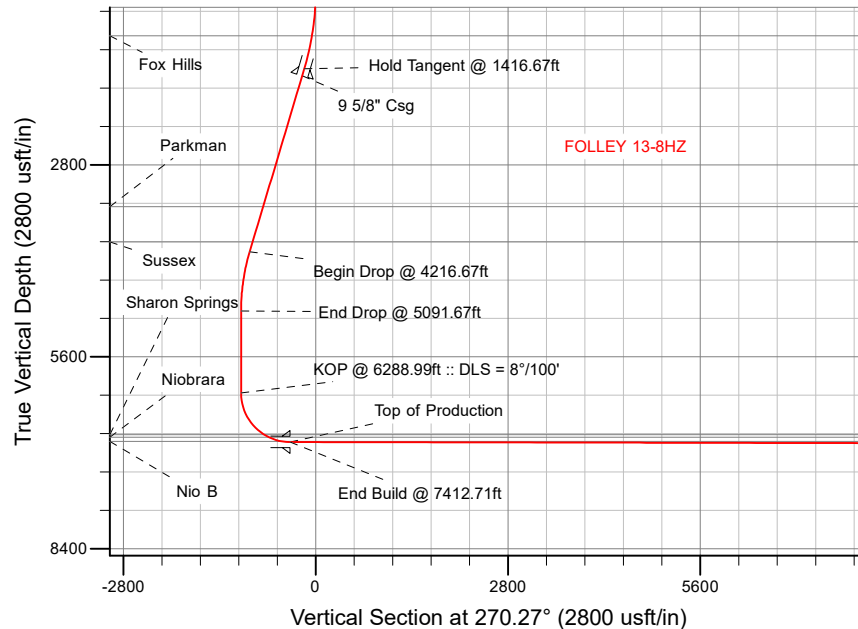
TOE
1760' FSL
2159' FEL

West(-)/East(+) (2800 usft/in)

-11200 -9800 -8400 -7000 -5600 -4200 -2800 -1400 0 1400

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
915.00	918.41	Fox Hills
3411.00	3526.71	Parkman
3922.00	4062.51	Sussex
6736.00	7015.56	Sharon Springs
6772.00	7090.10	Niobrara
6834.00	7294.18	Nio B



Plan: Permit Rev-4 (FOLLEY 13-8HZ/Plan A)

Date: 1/3/2019

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well FOLLEY 13-8HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4922.00usft (Drilling Rig)
Project:	LARIMER-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4922.00usft (Drilling Rig)
Site:	5N-68W-13 FOLLEY 9-13HZ PAD	North Reference:	True
Well:	FOLLEY 13-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-4		

Project	LARIMER-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		5N-68W-13 FOLLEY 9-13HZ PAD			
Site Position:		Northing:	14,671,775.76 usft	Latitude:	40.398288
From:	Lat/Long	Easting:	1,655,352.90 usft	Longitude:	-104.946353
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.03 °

Well		FOLLEY 13-8HZ				
Well Position	+N/-S	0.00 usft	Northing:	14,671,775.76 usft	Latitude:	40.398288
	+E/-W	0.00 usft	Easting:	1,655,352.90 usft	Longitude:	-104.946353
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	4,905.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/14/2018	8.17	66.79	52,220.40096890

Design	Permit Rev-4				
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	270.27	

Plan Survey Tool Program	Date	1/3/2019			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	1,500.00	Permit Rev-4 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:crustal field declinatio	
2	1,500.00	20,276.71	Permit Rev-4 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:Rockies, crustal dec +	

Corporate
Planning Report

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Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4922.00usft (Drilling Rig)
Project:	LARIMER-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4922.00usft (Drilling Rig)
Site:	5N-68W-13 FOLLEY 9-13HZ PAD	North Reference:	True
Well:	FOLLEY 13-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-4		

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	
1,416.67	17.50	109.45	1,398.61	-58.87	166.70	1.50	1.50	0.00	109.45	
4,216.67	17.50	109.45	4,069.02	-339.23	960.63	0.00	0.00	0.00	0.00	
5,091.67	0.00	0.00	4,930.48	-383.38	1,085.65	2.00	-2.00	0.00	180.00	
6,288.99	0.00	0.00	6,127.80	-383.38	1,085.65	0.00	0.00	0.00	0.00	
7,412.71	89.90	270.27	6,844.00	-380.00	370.74	8.00	8.00	-7.99	270.27	
20,276.71	89.90	270.27	6,867.00	-319.18	-12,493.09	0.00	0.00	0.00	0.00	FOLLEY MID 13-8HZ

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well FOLLEY 13-8HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4922.00usft (Drilling Rig)
Project:	LARIMER-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4922.00usft (Drilling Rig)
Site:	5N-68W-13 FOLLEY 9-13HZ PAD	North Reference:	True
Well:	FOLLEY 13-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-4		

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
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 250.00ft									
300.00	0.75	109.45	300.00	-0.11	0.31	-0.31	1.50	1.50	0.00
400.00	2.25	109.45	399.96	-0.98	2.78	-2.78	1.50	1.50	0.00
500.00	3.75	109.45	499.82	-2.72	7.71	-7.72	1.50	1.50	0.00
600.00	5.25	109.45	599.51	-5.34	15.11	-15.13	1.50	1.50	0.00
700.00	6.75	109.45	698.96	-8.82	24.97	-25.01	1.50	1.50	0.00
800.00	8.25	109.45	798.10	-13.16	37.27	-37.33	1.50	1.50	0.00
900.00	9.75	109.45	896.87	-18.37	52.02	-52.11	1.50	1.50	0.00
918.41	10.03	109.45	915.00	-19.42	55.00	-55.09	1.50	1.50	0.00
Fox Hills									
1,000.00	11.25	109.45	995.19	-24.44	69.21	-69.32	1.50	1.50	0.00
1,100.00	12.75	109.45	1,093.00	-31.36	88.81	-88.96	1.50	1.50	0.00
1,200.00	14.25	109.45	1,190.24	-39.14	110.82	-111.01	1.50	1.50	0.00
1,300.00	15.75	109.45	1,286.83	-47.75	135.23	-135.45	1.50	1.50	0.00
1,400.00	17.25	109.45	1,382.71	-57.21	162.01	-162.27	1.50	1.50	0.00
1,416.67	17.50	109.45	1,398.61	-58.87	166.70	-166.97	1.50	1.50	0.00
Hold Tangent @ 1416.67ft									
1,500.00	17.50	109.45	1,478.09	-67.21	190.33	-190.64	0.00	0.00	0.00
1,522.98	17.50	109.45	1,500.00	-69.51	196.84	-197.17	0.00	0.00	0.00
9 5/8" Csg									
1,600.00	17.50	109.45	1,573.46	-77.22	218.68	-219.04	0.00	0.00	0.00
1,700.00	17.50	109.45	1,668.83	-87.24	247.04	-247.45	0.00	0.00	0.00
1,800.00	17.50	109.45	1,764.20	-97.25	275.39	-275.85	0.00	0.00	0.00
1,900.00	17.50	109.45	1,859.57	-107.26	303.75	-304.25	0.00	0.00	0.00
2,000.00	17.50	109.45	1,954.95	-117.28	332.10	-332.65	0.00	0.00	0.00
2,100.00	17.50	109.45	2,050.32	-127.29	360.46	-361.05	0.00	0.00	0.00
2,200.00	17.50	109.45	2,145.69	-137.30	388.81	-389.45	0.00	0.00	0.00
2,300.00	17.50	109.45	2,241.06	-147.32	417.16	-417.85	0.00	0.00	0.00
2,400.00	17.50	109.45	2,336.43	-157.33	445.52	-446.26	0.00	0.00	0.00
2,500.00	17.50	109.45	2,431.80	-167.34	473.87	-474.66	0.00	0.00	0.00
2,600.00	17.50	109.45	2,527.18	-177.36	502.23	-503.06	0.00	0.00	0.00
2,700.00	17.50	109.45	2,622.55	-187.37	530.58	-531.46	0.00	0.00	0.00
2,800.00	17.50	109.45	2,717.92	-197.38	558.94	-559.86	0.00	0.00	0.00
2,900.00	17.50	109.45	2,813.29	-207.39	587.29	-588.26	0.00	0.00	0.00
3,000.00	17.50	109.45	2,908.66	-217.41	615.65	-616.66	0.00	0.00	0.00
3,100.00	17.50	109.45	3,004.04	-227.42	644.00	-645.07	0.00	0.00	0.00
3,200.00	17.50	109.45	3,099.41	-237.43	672.36	-673.47	0.00	0.00	0.00
3,300.00	17.50	109.45	3,194.78	-247.45	700.71	-701.87	0.00	0.00	0.00
3,400.00	17.50	109.45	3,290.15	-257.46	729.06	-730.27	0.00	0.00	0.00
3,500.00	17.50	109.45	3,385.52	-267.47	757.42	-758.67	0.00	0.00	0.00
3,526.71	17.50	109.45	3,411.00	-270.15	764.99	-766.26	0.00	0.00	0.00
Parkman									
3,600.00	17.50	109.45	3,480.89	-277.49	785.77	-787.07	0.00	0.00	0.00
3,700.00	17.50	109.45	3,576.27	-287.50	814.13	-815.47	0.00	0.00	0.00
3,800.00	17.50	109.45	3,671.64	-297.51	842.48	-843.87	0.00	0.00	0.00
3,900.00	17.50	109.45	3,767.01	-307.52	870.84	-872.28	0.00	0.00	0.00
4,000.00	17.50	109.45	3,862.38	-317.54	899.19	-900.68	0.00	0.00	0.00
4,062.51	17.50	109.45	3,922.00	-323.80	916.92	-918.43	0.00	0.00	0.00
Sussex									

Corporate Planning Report

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Project:	LARIMER-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4922.00usft (Drilling Rig)
Site:	5N-68W-13 FOLLEY 9-13HZ PAD	North Reference:	True
Well:	FOLLEY 13-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-4		

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	17.50	109.45	3,957.75	-327.55	927.55	-929.08	0.00	0.00	0.00
4,200.00	17.50	109.45	4,053.12	-337.56	955.90	-957.48	0.00	0.00	0.00
4,216.67	17.50	109.45	4,069.02	-339.23	960.63	-962.21	0.00	0.00	0.00
Begin Drop @ 4216.67ft									
4,300.00	15.83	109.45	4,148.85	-347.19	983.16	-984.79	2.00	-2.00	0.00
4,400.00	13.83	109.45	4,245.51	-355.71	1,007.30	-1,008.97	2.00	-2.00	0.00
4,500.00	11.83	109.45	4,343.01	-363.11	1,028.24	-1,029.94	2.00	-2.00	0.00
4,600.00	9.83	109.45	4,441.22	-369.37	1,045.96	-1,047.69	2.00	-2.00	0.00
4,700.00	7.83	109.45	4,540.03	-374.48	1,060.44	-1,062.20	2.00	-2.00	0.00
4,800.00	5.83	109.45	4,639.31	-378.44	1,071.66	-1,073.43	2.00	-2.00	0.00
4,900.00	3.83	109.45	4,738.95	-381.25	1,079.61	-1,081.39	2.00	-2.00	0.00
5,000.00	1.83	109.45	4,838.83	-382.89	1,084.27	-1,086.06	2.00	-2.00	0.00
5,091.67	0.00	0.00	4,930.48	-383.38	1,085.65	-1,087.45	2.00	-2.00	0.00
End Drop @ 5091.67ft									
5,100.00	0.00	0.00	4,938.81	-383.38	1,085.65	-1,087.45	0.00	0.00	0.00
5,200.00	0.00	0.00	5,038.81	-383.38	1,085.65	-1,087.45	0.00	0.00	0.00
5,300.00	0.00	0.00	5,138.81	-383.38	1,085.65	-1,087.45	0.00	0.00	0.00
5,400.00	0.00	0.00	5,238.81	-383.38	1,085.65	-1,087.45	0.00	0.00	0.00
5,500.00	0.00	0.00	5,338.81	-383.38	1,085.65	-1,087.45	0.00	0.00	0.00
5,600.00	0.00	0.00	5,438.81	-383.38	1,085.65	-1,087.45	0.00	0.00	0.00
5,700.00	0.00	0.00	5,538.81	-383.38	1,085.65	-1,087.45	0.00	0.00	0.00
5,800.00	0.00	0.00	5,638.81	-383.38	1,085.65	-1,087.45	0.00	0.00	0.00
5,900.00	0.00	0.00	5,738.81	-383.38	1,085.65	-1,087.45	0.00	0.00	0.00
6,000.00	0.00	0.00	5,838.81	-383.38	1,085.65	-1,087.45	0.00	0.00	0.00
6,100.00	0.00	0.00	5,938.81	-383.38	1,085.65	-1,087.45	0.00	0.00	0.00
6,200.00	0.00	0.00	6,038.81	-383.38	1,085.65	-1,087.45	0.00	0.00	0.00
6,288.99	0.00	0.00	6,127.80	-383.38	1,085.65	-1,087.45	0.00	0.00	0.00
KOP @ 6288.99ft :: DLS = 8°/100'									
6,300.00	0.88	270.27	6,138.81	-383.38	1,085.57	-1,087.36	8.00	8.00	0.00
6,400.00	8.88	270.27	6,238.37	-383.34	1,077.06	-1,078.86	8.00	8.00	0.00
6,500.00	16.88	270.27	6,335.77	-383.24	1,054.79	-1,056.58	8.00	8.00	0.00
6,600.00	24.88	270.27	6,429.13	-383.07	1,019.18	-1,020.97	8.00	8.00	0.00
6,700.00	32.88	270.27	6,516.62	-382.84	970.92	-972.71	8.00	8.00	0.00
6,800.00	40.88	270.27	6,596.54	-382.56	910.95	-912.75	8.00	8.00	0.00
6,900.00	48.88	270.27	6,667.34	-382.22	840.45	-842.24	8.00	8.00	0.00
7,000.00	56.88	270.27	6,727.64	-381.85	760.77	-762.57	8.00	8.00	0.00
7,015.56	58.13	270.27	6,736.00	-381.79	747.65	-749.44	8.00	8.00	0.00
Sharon Springs									
7,090.10	64.09	270.27	6,772.00	-381.48	682.42	-684.21	8.00	8.00	0.00
Niobrara									
7,100.00	64.88	270.27	6,776.27	-381.43	673.49	-675.28	8.00	8.00	0.00
7,200.00	72.88	270.27	6,812.27	-380.99	580.28	-582.07	8.00	8.00	0.00
7,294.18	80.42	270.27	6,834.00	-380.56	488.71	-490.50	8.00	8.00	0.00
Nio B									
7,300.00	80.88	270.27	6,834.95	-380.53	482.97	-484.76	8.00	8.00	0.00
7,400.00	88.88	270.27	6,843.86	-380.06	383.45	-385.24	8.00	8.00	0.00
7,412.71	89.90	270.27	6,844.00	-380.00	370.74	-372.53	8.00	8.00	0.00
End Build @ 7412.71ft - Top of Production									
7,500.00	89.90	270.27	6,844.15	-379.59	283.45	-285.24	0.00	0.00	0.00
7,600.00	89.90	270.27	6,844.33	-379.12	183.45	-185.24	0.00	0.00	0.00
7,700.00	89.90	270.27	6,844.51	-378.64	83.45	-85.24	0.00	0.00	0.00
7,800.00	89.90	270.27	6,844.69	-378.17	-16.54	14.76	0.00	0.00	0.00
7,900.00	89.90	270.27	6,844.87	-377.70	-116.54	114.76	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well FOLLEY 13-8HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4922.00usft (Drilling Rig)
Project:	LARIMER-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4922.00usft (Drilling Rig)
Site:	5N-68W-13 FOLLEY 9-13HZ PAD	North Reference:	True
Well:	FOLLEY 13-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-4		

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)	
8,000.00	89.90	270.27	6,845.05	-377.23	-216.54	214.76	0.00	0.00	0.00	
8,100.00	89.90	270.27	6,845.23	-376.75	-316.54	314.76	0.00	0.00	0.00	
8,200.00	89.90	270.27	6,845.41	-376.28	-416.54	414.76	0.00	0.00	0.00	
8,300.00	89.90	270.27	6,845.58	-375.81	-516.54	514.76	0.00	0.00	0.00	
8,400.00	89.90	270.27	6,845.76	-375.33	-616.54	614.76	0.00	0.00	0.00	
8,500.00	89.90	270.27	6,845.94	-374.86	-716.53	714.76	0.00	0.00	0.00	
8,600.00	89.90	270.27	6,846.12	-374.39	-816.53	814.76	0.00	0.00	0.00	
8,700.00	89.90	270.27	6,846.30	-373.92	-916.53	914.76	0.00	0.00	0.00	
8,800.00	89.90	270.27	6,846.48	-373.44	-1,016.53	1,014.76	0.00	0.00	0.00	
8,900.00	89.90	270.27	6,846.66	-372.97	-1,116.53	1,114.76	0.00	0.00	0.00	
9,000.00	89.90	270.27	6,846.84	-372.50	-1,216.53	1,214.76	0.00	0.00	0.00	
9,100.00	89.90	270.27	6,847.01	-372.03	-1,316.53	1,314.76	0.00	0.00	0.00	
9,200.00	89.90	270.27	6,847.19	-371.55	-1,416.53	1,414.76	0.00	0.00	0.00	
9,300.00	89.90	270.27	6,847.37	-371.08	-1,516.52	1,514.76	0.00	0.00	0.00	
9,400.00	89.90	270.27	6,847.55	-370.61	-1,616.52	1,614.76	0.00	0.00	0.00	
9,500.00	89.90	270.27	6,847.73	-370.13	-1,716.52	1,714.76	0.00	0.00	0.00	
9,600.00	89.90	270.27	6,847.91	-369.66	-1,816.52	1,814.76	0.00	0.00	0.00	
9,700.00	89.90	270.27	6,848.09	-369.19	-1,916.52	1,914.76	0.00	0.00	0.00	
9,800.00	89.90	270.27	6,848.27	-368.72	-2,016.52	2,014.76	0.00	0.00	0.00	
9,900.00	89.90	270.27	6,848.44	-368.24	-2,116.52	2,114.76	0.00	0.00	0.00	
10,000.00	89.90	270.27	6,848.62	-367.77	-2,216.52	2,214.76	0.00	0.00	0.00	
10,100.00	89.90	270.27	6,848.80	-367.30	-2,316.51	2,314.76	0.00	0.00	0.00	
10,200.00	89.90	270.27	6,848.98	-366.82	-2,416.51	2,414.76	0.00	0.00	0.00	
10,300.00	89.90	270.27	6,849.16	-366.35	-2,516.51	2,514.76	0.00	0.00	0.00	
10,400.00	89.90	270.27	6,849.34	-365.88	-2,616.51	2,614.76	0.00	0.00	0.00	
10,500.00	89.90	270.27	6,849.52	-365.41	-2,716.51	2,714.76	0.00	0.00	0.00	
10,600.00	89.90	270.27	6,849.70	-364.93	-2,816.51	2,814.76	0.00	0.00	0.00	
10,700.00	89.90	270.27	6,849.88	-364.46	-2,916.51	2,914.76	0.00	0.00	0.00	
10,800.00	89.90	270.27	6,850.05	-363.99	-3,016.51	3,014.76	0.00	0.00	0.00	
10,900.00	89.90	270.27	6,850.23	-363.51	-3,116.50	3,114.76	0.00	0.00	0.00	
11,000.00	89.90	270.27	6,850.41	-363.04	-3,216.50	3,214.76	0.00	0.00	0.00	
11,100.00	89.90	270.27	6,850.59	-362.57	-3,316.50	3,314.76	0.00	0.00	0.00	
11,200.00	89.90	270.27	6,850.77	-362.10	-3,416.50	3,414.76	0.00	0.00	0.00	
11,300.00	89.90	270.27	6,850.95	-361.62	-3,516.50	3,514.76	0.00	0.00	0.00	
11,400.00	89.90	270.27	6,851.13	-361.15	-3,616.50	3,614.76	0.00	0.00	0.00	
11,500.00	89.90	270.27	6,851.31	-360.68	-3,716.50	3,714.76	0.00	0.00	0.00	
11,600.00	89.90	270.27	6,851.48	-360.20	-3,816.50	3,814.76	0.00	0.00	0.00	
11,700.00	89.90	270.27	6,851.66	-359.73	-3,916.49	3,914.76	0.00	0.00	0.00	
11,800.00	89.90	270.27	6,851.84	-359.26	-4,016.49	4,014.76	0.00	0.00	0.00	
11,900.00	89.90	270.27	6,852.02	-358.79	-4,116.49	4,114.76	0.00	0.00	0.00	
12,000.00	89.90	270.27	6,852.20	-358.31	-4,216.49	4,214.75	0.00	0.00	0.00	
12,100.00	89.90	270.27	6,852.38	-357.84	-4,316.49	4,314.75	0.00	0.00	0.00	
12,200.00	89.90	270.27	6,852.56	-357.37	-4,416.49	4,414.75	0.00	0.00	0.00	
12,300.00	89.90	270.27	6,852.74	-356.90	-4,516.49	4,514.75	0.00	0.00	0.00	
12,400.00	89.90	270.27	6,852.92	-356.42	-4,616.49	4,614.75	0.00	0.00	0.00	
12,500.00	89.90	270.27	6,853.09	-355.95	-4,716.48	4,714.75	0.00	0.00	0.00	
12,600.00	89.90	270.27	6,853.27	-355.48	-4,816.48	4,814.75	0.00	0.00	0.00	
12,700.00	89.90	270.27	6,853.45	-355.00	-4,916.48	4,914.75	0.00	0.00	0.00	
12,800.00	89.90	270.27	6,853.63	-354.53	-5,016.48	5,014.75	0.00	0.00	0.00	
12,900.00	89.90	270.27	6,853.81	-354.06	-5,116.48	5,114.75	0.00	0.00	0.00	
13,000.00	89.90	270.27	6,853.99	-353.59	-5,216.48	5,214.75	0.00	0.00	0.00	
13,100.00	89.90	270.27	6,854.17	-353.11	-5,316.48	5,314.75	0.00	0.00	0.00	
13,200.00	89.90	270.27	6,854.35	-352.64	-5,416.47	5,414.75	0.00	0.00	0.00	
13,300.00	89.90	270.27	6,854.52	-352.17	-5,516.47	5,514.75	0.00	0.00	0.00	

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well FOLLEY 13-8HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4922.00usft (Drilling Rig)
Project:	LARIMER-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4922.00usft (Drilling Rig)
Site:	5N-68W-13 FOLLEY 9-13HZ PAD	North Reference:	True
Well:	FOLLEY 13-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-4		

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)	
13,400.00	89.90	270.27	6,854.70	-351.69	-5,616.47	5,614.75	0.00	0.00	0.00	
13,500.00	89.90	270.27	6,854.88	-351.22	-5,716.47	5,714.75	0.00	0.00	0.00	
13,600.00	89.90	270.27	6,855.06	-350.75	-5,816.47	5,814.75	0.00	0.00	0.00	
13,700.00	89.90	270.27	6,855.24	-350.28	-5,916.47	5,914.75	0.00	0.00	0.00	
13,800.00	89.90	270.27	6,855.42	-349.80	-6,016.47	6,014.75	0.00	0.00	0.00	
13,900.00	89.90	270.27	6,855.60	-349.33	-6,116.47	6,114.75	0.00	0.00	0.00	
14,000.00	89.90	270.27	6,855.78	-348.86	-6,216.46	6,214.75	0.00	0.00	0.00	
14,100.00	89.90	270.27	6,855.96	-348.38	-6,316.46	6,314.75	0.00	0.00	0.00	
14,200.00	89.90	270.27	6,856.13	-347.91	-6,416.46	6,414.75	0.00	0.00	0.00	
14,300.00	89.90	270.27	6,856.31	-347.44	-6,516.46	6,514.75	0.00	0.00	0.00	
14,400.00	89.90	270.27	6,856.49	-346.97	-6,616.46	6,614.75	0.00	0.00	0.00	
14,500.00	89.90	270.27	6,856.67	-346.49	-6,716.46	6,714.75	0.00	0.00	0.00	
14,600.00	89.90	270.27	6,856.85	-346.02	-6,816.46	6,814.75	0.00	0.00	0.00	
14,700.00	89.90	270.27	6,857.03	-345.55	-6,916.46	6,914.75	0.00	0.00	0.00	
14,800.00	89.90	270.27	6,857.21	-345.07	-7,016.45	7,014.75	0.00	0.00	0.00	
14,900.00	89.90	270.27	6,857.39	-344.60	-7,116.45	7,114.75	0.00	0.00	0.00	
15,000.00	89.90	270.27	6,857.56	-344.13	-7,216.45	7,214.75	0.00	0.00	0.00	
15,100.00	89.90	270.27	6,857.74	-343.66	-7,316.45	7,314.75	0.00	0.00	0.00	
15,200.00	89.90	270.27	6,857.92	-343.18	-7,416.45	7,414.75	0.00	0.00	0.00	
15,300.00	89.90	270.27	6,858.10	-342.71	-7,516.45	7,514.75	0.00	0.00	0.00	
15,400.00	89.90	270.27	6,858.28	-342.24	-7,616.45	7,614.75	0.00	0.00	0.00	
15,500.00	89.90	270.27	6,858.46	-341.76	-7,716.45	7,714.75	0.00	0.00	0.00	
15,600.00	89.90	270.27	6,858.64	-341.29	-7,816.44	7,814.75	0.00	0.00	0.00	
15,700.00	89.90	270.27	6,858.82	-340.82	-7,916.44	7,914.75	0.00	0.00	0.00	
15,800.00	89.90	270.27	6,859.00	-340.35	-8,016.44	8,014.75	0.00	0.00	0.00	
15,900.00	89.90	270.27	6,859.17	-339.87	-8,116.44	8,114.75	0.00	0.00	0.00	
16,000.00	89.90	270.27	6,859.35	-339.40	-8,216.44	8,214.75	0.00	0.00	0.00	
16,100.00	89.90	270.27	6,859.53	-338.93	-8,316.44	8,314.75	0.00	0.00	0.00	
16,200.00	89.90	270.27	6,859.71	-338.46	-8,416.44	8,414.75	0.00	0.00	0.00	
16,300.00	89.90	270.27	6,859.89	-337.98	-8,516.44	8,514.75	0.00	0.00	0.00	
16,400.00	89.90	270.27	6,860.07	-337.51	-8,616.43	8,614.75	0.00	0.00	0.00	
16,500.00	89.90	270.27	6,860.25	-337.04	-8,716.43	8,714.75	0.00	0.00	0.00	
16,600.00	89.90	270.27	6,860.43	-336.56	-8,816.43	8,814.75	0.00	0.00	0.00	
16,700.00	89.90	270.27	6,860.60	-336.09	-8,916.43	8,914.75	0.00	0.00	0.00	
16,800.00	89.90	270.27	6,860.78	-335.62	-9,016.43	9,014.75	0.00	0.00	0.00	
16,900.00	89.90	270.27	6,860.96	-335.15	-9,116.43	9,114.75	0.00	0.00	0.00	
17,000.00	89.90	270.27	6,861.14	-334.67	-9,216.43	9,214.75	0.00	0.00	0.00	
17,100.00	89.90	270.27	6,861.32	-334.20	-9,316.43	9,314.75	0.00	0.00	0.00	
17,200.00	89.90	270.27	6,861.50	-333.73	-9,416.42	9,414.75	0.00	0.00	0.00	
17,300.00	89.90	270.27	6,861.68	-333.25	-9,516.42	9,514.75	0.00	0.00	0.00	
17,400.00	89.90	270.27	6,861.86	-332.78	-9,616.42	9,614.75	0.00	0.00	0.00	
17,500.00	89.90	270.27	6,862.03	-332.31	-9,716.42	9,714.75	0.00	0.00	0.00	
17,600.00	89.90	270.27	6,862.21	-331.84	-9,816.42	9,814.75	0.00	0.00	0.00	
17,700.00	89.90	270.27	6,862.39	-331.36	-9,916.42	9,914.75	0.00	0.00	0.00	
17,800.00	89.90	270.27	6,862.57	-330.89	-10,016.42	10,014.75	0.00	0.00	0.00	
17,900.00	89.90	270.27	6,862.75	-330.42	-10,116.41	10,114.75	0.00	0.00	0.00	
18,000.00	89.90	270.27	6,862.93	-329.94	-10,216.41	10,214.75	0.00	0.00	0.00	
18,100.00	89.90	270.27	6,863.11	-329.47	-10,316.41	10,314.75	0.00	0.00	0.00	
18,200.00	89.90	270.27	6,863.29	-329.00	-10,416.41	10,414.75	0.00	0.00	0.00	
18,300.00	89.90	270.27	6,863.47	-328.53	-10,516.41	10,514.74	0.00	0.00	0.00	
18,400.00	89.90	270.27	6,863.64	-328.05	-10,616.41	10,614.74	0.00	0.00	0.00	
18,500.00	89.90	270.27	6,863.82	-327.58	-10,716.41	10,714.74	0.00	0.00	0.00	
18,600.00	89.90	270.27	6,864.00	-327.11	-10,816.41	10,814.74	0.00	0.00	0.00	
18,700.00	89.90	270.27	6,864.18	-326.63	-10,916.40	10,914.74	0.00	0.00	0.00	

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well FOLLEY 13-8HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4922.00usft (Drilling Rig)
Project:	LARIMER-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4922.00usft (Drilling Rig)
Site:	5N-68W-13 FOLLEY 9-13HZ PAD	North Reference:	True
Well:	FOLLEY 13-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-4		

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)
18,800.00	89.90	270.27	6,864.36	-326.16	-11,016.40	11,014.74	0.00	0.00	0.00
18,900.00	89.90	270.27	6,864.54	-325.69	-11,116.40	11,114.74	0.00	0.00	0.00
19,000.00	89.90	270.27	6,864.72	-325.22	-11,216.40	11,214.74	0.00	0.00	0.00
19,100.00	89.90	270.27	6,864.90	-324.74	-11,316.40	11,314.74	0.00	0.00	0.00
19,200.00	89.90	270.27	6,865.07	-324.27	-11,416.40	11,414.74	0.00	0.00	0.00
19,300.00	89.90	270.27	6,865.25	-323.80	-11,516.40	11,514.74	0.00	0.00	0.00
19,400.00	89.90	270.27	6,865.43	-323.33	-11,616.40	11,614.74	0.00	0.00	0.00
19,500.00	89.90	270.27	6,865.61	-322.85	-11,716.39	11,714.74	0.00	0.00	0.00
19,600.00	89.90	270.27	6,865.79	-322.38	-11,816.39	11,814.74	0.00	0.00	0.00
19,700.00	89.90	270.27	6,865.97	-321.91	-11,916.39	11,914.74	0.00	0.00	0.00
19,800.00	89.90	270.27	6,866.15	-321.43	-12,016.39	12,014.74	0.00	0.00	0.00
19,900.00	89.90	270.27	6,866.33	-320.96	-12,116.39	12,114.74	0.00	0.00	0.00
20,000.00	89.90	270.27	6,866.51	-320.49	-12,216.39	12,214.74	0.00	0.00	0.00
20,100.00	89.90	270.27	6,866.68	-320.02	-12,316.39	12,314.74	0.00	0.00	0.00
20,200.00	89.90	270.27	6,866.86	-319.54	-12,416.39	12,414.74	0.00	0.00	0.00
20,276.71	89.90	270.27	6,867.00	-319.18	-12,493.09	12,491.45	0.00	0.00	0.00
TD Well @ 20276.71ft									

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,522.98	1,500.00	9 5/8" Csg	9-5/8	13-1/2
7,412.71	6,844.00	Top of Production	5-1/2	7-7/8

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
918.41	915.00	Fox Hills			
3,526.71	3,411.00	Parkman			
4,062.51	3,922.00	Sussex			
7,015.56	6,736.00	Sharon Springs			
7,090.10	6,772.00	Niobrara			
7,294.18	6,834.00	Nio B			

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
1,416.67	1,398.61	-58.87	166.70	Hold Tangent @ 1416.67ft
4,216.67	4,069.02	-339.23	960.63	Begin Drop @ 4216.67ft
5,091.67	4,930.48	-383.38	1,085.65	End Drop @ 5091.67ft
6,288.99	6,127.80	-383.38	1,085.65	KOP @ 6288.99ft :: DLS = 8"/100'
7,412.71	6,844.00	-380.00	370.74	End Build @ 7412.71ft
20,276.71	6,867.00	-319.18	-12,493.09	TD Well @ 20276.71ft