

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

1N-65W-09 Robin 2 Pad

ROBIN 9-14HZ

Plan A

Plan: Permit Rev-1

Standard Planning Report

22 March, 2017

Project: WELD-NAD83-UTMFT13N
Site: 1N-65W-09 Robin 2 Pad
Well: ROBIN 9-14HZ
Wellbore: Plan A
Design: Permit Rev-1

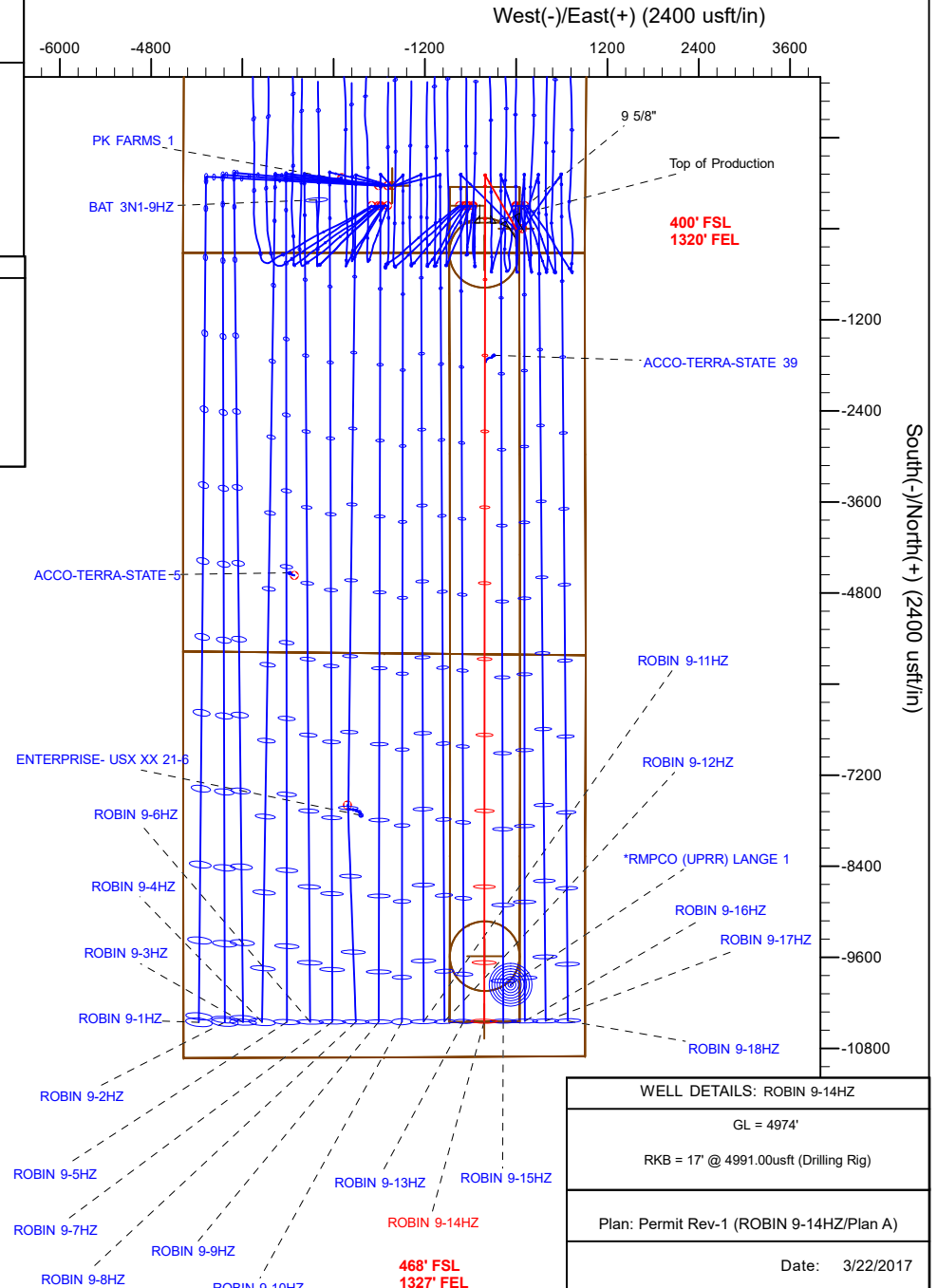
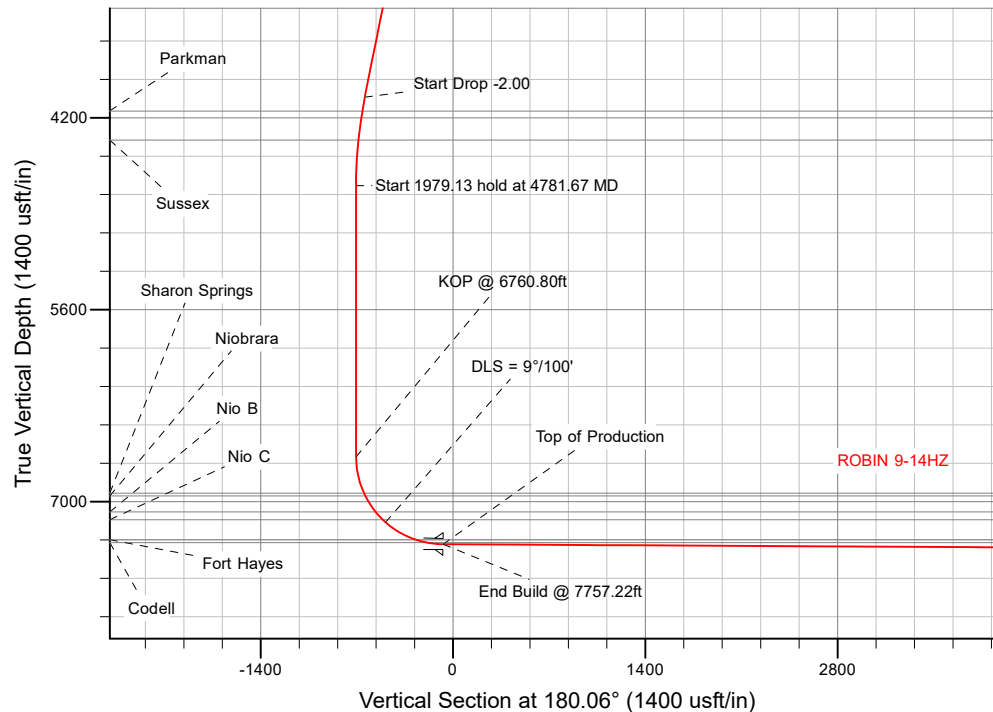
US ROCKIES WATTENBERG PLANNING

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	
3	1266.67	13.00	330.00	1259.25	84.78	-48.95	1.50	330.00	-84.73	
4	4131.67	13.00	330.00	4050.82	642.92	-371.19	0.00	0.00	-642.53	
5	4781.67	0.00	0.00	4695.26	706.51	-407.90	2.00	180.00	-706.08	
6	6760.80	0.00	0.00	6674.39	706.51	-407.90	0.00	0.00	-706.08	
7	7757.22	89.68	180.06	7311.00	73.46	-408.58	9.00	180.06	-73.04	
8	18272.71	89.68	180.06	7370.00	-10441.85	-419.87	0.00	0.00	10442.29	ROBIN 9-14HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
ROBIN 9-14HZ_SHL	0.00	0.00	0.00	40.059612	-104.662830	Point
ROBIN 9-14HZ_BHL	7370.00	-10441.85	-419.87	40.030937	-104.664330	Point



Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well ROBIN 9-14HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4991.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4991.00usft (Drilling Rig)
Site:	1N-65W-09 Robin 2 Pad	North Reference:	True
Well:	ROBIN 9-14HZ	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-65W-09 Robin 2 Pad			
Site Position:		Northing:	14,548,619.34 usft	Latitude: 40.059612
From:	Lat/Long	Easting:	1,734,744.32 usft	Longitude: -104.662884
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.22 °

Well	ROBIN 9-14HZ			
Well Position	+N/-S	-0.03 usft	Northing:	14,548,619.36 usft
	+E/-W	15.00 usft	Easting:	1,734,759.32 usft
Position Uncertainty	3.28 usft	Wellhead Elevation:		Ground Level: 4,974.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/12/2017	8.01	66.59	52,357.79911186

Design	Permit Rev-1			
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	180.06

Plan Survey Tool Program	Date	3/14/2017		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	1,500.00	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:crustal field declinatio
2	1,500.00	18,272.71	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:crustal field declinatio

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Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4991.00usft (Drilling Rig)
Site:	1N-65W-09 Robin 2 Pad	North Reference:	True
Well:	ROBIN 9-14HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

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	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,266.67	13.00	330.00	1,259.25	84.78	-48.95	1.50	1.50	0.00	330.00	
4,131.67	13.00	330.00	4,050.82	642.92	-371.19	0.00	0.00	0.00	0.00	
4,781.67	0.00	0.00	4,695.26	706.51	-407.90	2.00	-2.00	0.00	180.00	
6,760.80	0.00	0.00	6,674.39	706.51	-407.90	0.00	0.00	0.00	0.00	
7,757.22	89.68	180.06	7,311.00	73.46	-408.58	9.00	9.00	-18.06	180.06	
18,272.71	89.68	180.06	7,370.00	-10,441.85	-419.87	0.00	0.00	0.00	0.00	ROBIN 9-14HZ_BHL

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well ROBIN 9-14HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4991.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4991.00usft (Drilling Rig)
Site:	1N-65W-09 Robin 2 Pad	North Reference:	True
Well:	ROBIN 9-14HZ	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
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
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 1.50									
500.00	1.50	330.00	499.99	1.13	-0.65	-1.13	1.50	1.50	0.00
600.00	3.00	330.00	599.91	4.53	-2.62	-4.53	1.50	1.50	0.00
700.00	4.50	330.00	699.69	10.20	-5.89	-10.19	1.50	1.50	0.00
800.00	6.00	330.00	799.27	18.12	-10.46	-18.11	1.50	1.50	0.00
826.89	6.40	330.00	826.00	20.64	-11.91	-20.62	1.50	1.50	0.00
Fox Hills									
900.00	7.50	330.00	898.57	28.30	-16.34	-28.28	1.50	1.50	0.00
1,000.00	9.00	330.00	997.54	40.73	-23.51	-40.70	1.50	1.50	0.00
1,100.00	10.50	330.00	1,096.09	55.39	-31.98	-55.36	1.50	1.50	0.00
1,200.00	12.00	330.00	1,194.16	72.29	-41.74	-72.24	1.50	1.50	0.00
1,266.67	13.00	330.00	1,259.25	84.78	-48.95	-84.73	1.50	1.50	0.00
Start 2865.00 hold at 1266.67 MD									
1,300.00	13.00	330.00	1,291.73	91.28	-52.70	-91.22	0.00	0.00	0.00
1,400.00	13.00	330.00	1,389.17	110.76	-63.95	-110.69	0.00	0.00	0.00
1,500.00	13.00	330.00	1,486.60	130.24	-75.19	-130.16	0.00	0.00	0.00
1,513.75	13.00	330.00	1,500.00	132.92	-76.74	-132.84	0.00	0.00	0.00
9 5/8"									
1,600.00	13.00	330.00	1,584.04	149.72	-86.44	-149.63	0.00	0.00	0.00
1,700.00	13.00	330.00	1,681.48	169.20	-97.69	-169.10	0.00	0.00	0.00
1,800.00	13.00	330.00	1,778.91	188.68	-108.94	-188.57	0.00	0.00	0.00
1,900.00	13.00	330.00	1,876.35	208.16	-120.18	-208.04	0.00	0.00	0.00
2,000.00	13.00	330.00	1,973.79	227.65	-131.43	-227.51	0.00	0.00	0.00
2,100.00	13.00	330.00	2,071.22	247.13	-142.68	-246.98	0.00	0.00	0.00
2,200.00	13.00	330.00	2,168.66	266.61	-153.93	-266.45	0.00	0.00	0.00
2,300.00	13.00	330.00	2,266.10	286.09	-165.17	-285.92	0.00	0.00	0.00
2,400.00	13.00	330.00	2,363.54	305.57	-176.42	-305.39	0.00	0.00	0.00
2,500.00	13.00	330.00	2,460.97	325.05	-187.67	-324.86	0.00	0.00	0.00
2,600.00	13.00	330.00	2,558.41	344.53	-198.92	-344.33	0.00	0.00	0.00
2,700.00	13.00	330.00	2,655.85	364.02	-210.16	-363.80	0.00	0.00	0.00
2,800.00	13.00	330.00	2,753.28	383.50	-221.41	-383.26	0.00	0.00	0.00
2,900.00	13.00	330.00	2,850.72	402.98	-232.66	-402.73	0.00	0.00	0.00
3,000.00	13.00	330.00	2,948.16	422.46	-243.91	-422.20	0.00	0.00	0.00
3,100.00	13.00	330.00	3,045.59	441.94	-255.15	-441.67	0.00	0.00	0.00
3,200.00	13.00	330.00	3,143.03	461.42	-266.40	-461.14	0.00	0.00	0.00
3,300.00	13.00	330.00	3,240.47	480.90	-277.65	-480.61	0.00	0.00	0.00
3,400.00	13.00	330.00	3,337.91	500.38	-288.90	-500.08	0.00	0.00	0.00
3,500.00	13.00	330.00	3,435.34	519.87	-300.14	-519.55	0.00	0.00	0.00
3,600.00	13.00	330.00	3,532.78	539.35	-311.39	-539.02	0.00	0.00	0.00
3,700.00	13.00	330.00	3,630.22	558.83	-322.64	-558.49	0.00	0.00	0.00
3,800.00	13.00	330.00	3,727.65	578.31	-333.89	-577.96	0.00	0.00	0.00
3,900.00	13.00	330.00	3,825.09	597.79	-345.14	-597.43	0.00	0.00	0.00
4,000.00	13.00	330.00	3,922.53	617.27	-356.38	-616.90	0.00	0.00	0.00
4,100.00	13.00	330.00	4,019.97	636.75	-367.63	-636.37	0.00	0.00	0.00
4,131.67	13.00	330.00	4,050.82	642.92	-371.19	-642.53	0.00	0.00	0.00
Start Drop -2.00									
4,200.00	11.63	330.00	4,117.58	655.55	-378.48	-655.15	2.00	-2.00	0.00
4,234.08	10.95	330.00	4,151.00	661.33	-381.82	-660.93	2.00	-2.00	0.00

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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)
Parkman									
4,300.00	9.63	330.00	4,215.86	671.53	-387.71	-671.12	2.00	-2.00	0.00
4,400.00	7.63	330.00	4,314.72	684.53	-395.21	-684.11	2.00	-2.00	0.00
4,447.65	6.68	330.00	4,362.00	689.67	-398.18	-689.25	2.00	-2.00	0.00
Sussex									
4,500.00	5.63	330.00	4,414.04	694.53	-400.99	-694.11	2.00	-2.00	0.00
4,600.00	3.63	330.00	4,513.71	701.52	-405.03	-701.10	2.00	-2.00	0.00
4,700.00	1.63	330.00	4,613.60	705.50	-407.32	-705.08	2.00	-2.00	0.00
4,781.67	0.00	0.00	4,695.26	706.51	-407.90	-706.08	2.00	-2.00	0.00
Start 1979.13 hold at 4781.67 MD									
4,800.00	0.00	0.00	4,713.59	706.51	-407.90	-706.08	0.00	0.00	0.00
4,900.00	0.00	0.00	4,813.59	706.51	-407.90	-706.08	0.00	0.00	0.00
5,000.00	0.00	0.00	4,913.59	706.51	-407.90	-706.08	0.00	0.00	0.00
5,100.00	0.00	0.00	5,013.59	706.51	-407.90	-706.08	0.00	0.00	0.00
5,200.00	0.00	0.00	5,113.59	706.51	-407.90	-706.08	0.00	0.00	0.00
5,300.00	0.00	0.00	5,213.59	706.51	-407.90	-706.08	0.00	0.00	0.00
5,400.00	0.00	0.00	5,313.59	706.51	-407.90	-706.08	0.00	0.00	0.00
5,500.00	0.00	0.00	5,413.59	706.51	-407.90	-706.08	0.00	0.00	0.00
5,600.00	0.00	0.00	5,513.59	706.51	-407.90	-706.08	0.00	0.00	0.00
5,700.00	0.00	0.00	5,613.59	706.51	-407.90	-706.08	0.00	0.00	0.00
5,800.00	0.00	0.00	5,713.59	706.51	-407.90	-706.08	0.00	0.00	0.00
5,900.00	0.00	0.00	5,813.59	706.51	-407.90	-706.08	0.00	0.00	0.00
6,000.00	0.00	0.00	5,913.59	706.51	-407.90	-706.08	0.00	0.00	0.00
6,100.00	0.00	0.00	6,013.59	706.51	-407.90	-706.08	0.00	0.00	0.00
6,200.00	0.00	0.00	6,113.59	706.51	-407.90	-706.08	0.00	0.00	0.00
6,300.00	0.00	0.00	6,213.59	706.51	-407.90	-706.08	0.00	0.00	0.00
6,400.00	0.00	0.00	6,313.59	706.51	-407.90	-706.08	0.00	0.00	0.00
6,500.00	0.00	0.00	6,413.59	706.51	-407.90	-706.08	0.00	0.00	0.00
6,600.00	0.00	0.00	6,513.59	706.51	-407.90	-706.08	0.00	0.00	0.00
6,700.00	0.00	0.00	6,613.59	706.51	-407.90	-706.08	0.00	0.00	0.00
6,760.80	0.00	0.00	6,674.39	706.51	-407.90	-706.08	0.00	0.00	0.00
KOP @ 6760.80ft									
6,800.00	3.53	180.06	6,713.57	705.30	-407.91	-704.88	9.00	9.00	0.00
6,900.00	12.53	180.06	6,812.48	691.35	-407.92	-690.92	9.00	9.00	0.00
7,000.00	21.53	180.06	6,908.00	662.10	-407.95	-661.67	9.00	9.00	0.00
7,033.69	24.56	180.06	6,939.00	648.91	-407.97	-648.48	9.00	9.00	0.00
Sharon Springs									
7,054.74	26.46	180.06	6,958.00	639.85	-407.98	-639.42	9.00	9.00	0.00
Niobrara									
7,100.00	30.53	180.06	6,997.77	618.26	-408.00	-617.83	9.00	9.00	0.00
7,194.10	39.00	180.06	7,075.00	564.66	-408.06	-564.23	9.00	9.00	0.00
Nio B									
7,200.00	39.53	180.06	7,079.57	560.92	-408.06	-560.49	9.00	9.00	0.00
7,272.87	46.09	180.06	7,133.00	511.43	-408.11	-511.01	9.00	9.00	0.00
Nio C									
7,300.00	48.53	180.06	7,151.40	491.49	-408.14	-491.06	9.00	9.00	0.00
DLS = 9°/100'									
7,400.00	57.53	180.06	7,211.48	411.68	-408.22	-411.25	9.00	9.00	0.00
7,500.00	66.53	180.06	7,258.33	323.45	-408.32	-323.03	9.00	9.00	0.00
7,554.90	71.47	180.06	7,278.00	272.22	-408.37	-271.79	9.00	9.00	0.00
Fort Hayes									
7,600.00	75.53	180.06	7,290.81	228.98	-408.42	-228.56	9.00	9.00	0.00

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Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4991.00usft (Drilling Rig)
Site:	1N-65W-09 Robin 2 Pad	North Reference:	True
Well:	ROBIN 9-14HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
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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)
7,642.24	79.33	180.06	7,300.00	187.76	-408.46	-187.33	9.00	9.00	0.00
Codell									
7,700.00	84.53	180.06	7,308.11	130.60	-408.52	-130.17	9.00	9.00	0.00
7,757.22	89.68	180.06	7,311.00	73.47	-408.58	-73.04	9.00	9.00	0.00
End Build @ 7757.22ft - Top of Production									
7,800.00	89.68	180.06	7,311.24	30.69	-408.63	-30.26	0.00	0.00	0.00
7,900.00	89.68	180.06	7,311.80	-69.31	-408.74	69.74	0.00	0.00	0.00
8,000.00	89.68	180.06	7,312.36	-169.31	-408.84	169.74	0.00	0.00	0.00
8,100.00	89.68	180.06	7,312.92	-269.31	-408.95	269.73	0.00	0.00	0.00
8,200.00	89.68	180.06	7,313.48	-369.30	-409.06	369.73	0.00	0.00	0.00
8,300.00	89.68	180.06	7,314.04	-469.30	-409.17	469.73	0.00	0.00	0.00
8,400.00	89.68	180.06	7,314.60	-569.30	-409.27	569.73	0.00	0.00	0.00
8,500.00	89.68	180.06	7,315.16	-669.30	-409.38	669.73	0.00	0.00	0.00
8,600.00	89.68	180.06	7,315.73	-769.30	-409.49	769.73	0.00	0.00	0.00
8,700.00	89.68	180.06	7,316.29	-869.30	-409.60	869.73	0.00	0.00	0.00
8,800.00	89.68	180.06	7,316.85	-969.30	-409.70	969.72	0.00	0.00	0.00
8,900.00	89.68	180.06	7,317.41	-1,069.29	-409.81	1,069.72	0.00	0.00	0.00
9,000.00	89.68	180.06	7,317.97	-1,169.29	-409.92	1,169.72	0.00	0.00	0.00
9,100.00	89.68	180.06	7,318.53	-1,269.29	-410.03	1,269.72	0.00	0.00	0.00
9,200.00	89.68	180.06	7,319.09	-1,369.29	-410.13	1,369.72	0.00	0.00	0.00
9,300.00	89.68	180.06	7,319.65	-1,469.29	-410.24	1,469.72	0.00	0.00	0.00
9,400.00	89.68	180.06	7,320.21	-1,569.29	-410.35	1,569.71	0.00	0.00	0.00
9,500.00	89.68	180.06	7,320.78	-1,669.28	-410.46	1,669.71	0.00	0.00	0.00
9,600.00	89.68	180.06	7,321.34	-1,769.28	-410.56	1,769.71	0.00	0.00	0.00
9,700.00	89.68	180.06	7,321.90	-1,869.28	-410.67	1,869.71	0.00	0.00	0.00
9,800.00	89.68	180.06	7,322.46	-1,969.28	-410.78	1,969.71	0.00	0.00	0.00
9,900.00	89.68	180.06	7,323.02	-2,069.28	-410.88	2,069.71	0.00	0.00	0.00
10,000.00	89.68	180.06	7,323.58	-2,169.28	-410.99	2,169.70	0.00	0.00	0.00
10,100.00	89.68	180.06	7,324.14	-2,269.27	-411.10	2,269.70	0.00	0.00	0.00
10,200.00	89.68	180.06	7,324.70	-2,369.27	-411.21	2,369.70	0.00	0.00	0.00
10,300.00	89.68	180.06	7,325.26	-2,469.27	-411.31	2,469.70	0.00	0.00	0.00
10,400.00	89.68	180.06	7,325.83	-2,569.27	-411.42	2,569.70	0.00	0.00	0.00
10,500.00	89.68	180.06	7,326.39	-2,669.27	-411.53	2,669.70	0.00	0.00	0.00
10,600.00	89.68	180.06	7,326.95	-2,769.27	-411.64	2,769.70	0.00	0.00	0.00
10,700.00	89.68	180.06	7,327.51	-2,869.26	-411.74	2,869.69	0.00	0.00	0.00
10,800.00	89.68	180.06	7,328.07	-2,969.26	-411.85	2,969.69	0.00	0.00	0.00
10,900.00	89.68	180.06	7,328.63	-3,069.26	-411.96	3,069.69	0.00	0.00	0.00
11,000.00	89.68	180.06	7,329.19	-3,169.26	-412.07	3,169.69	0.00	0.00	0.00
11,100.00	89.68	180.06	7,329.75	-3,269.26	-412.17	3,269.69	0.00	0.00	0.00
11,200.00	89.68	180.06	7,330.31	-3,369.26	-412.28	3,369.69	0.00	0.00	0.00
11,300.00	89.68	180.06	7,330.88	-3,469.25	-412.39	3,469.68	0.00	0.00	0.00
11,400.00	89.68	180.06	7,331.44	-3,569.25	-412.49	3,569.68	0.00	0.00	0.00
11,500.00	89.68	180.06	7,332.00	-3,669.25	-412.60	3,669.68	0.00	0.00	0.00
11,600.00	89.68	180.06	7,332.56	-3,769.25	-412.71	3,769.68	0.00	0.00	0.00
11,700.00	89.68	180.06	7,333.12	-3,869.25	-412.82	3,869.68	0.00	0.00	0.00
11,800.00	89.68	180.06	7,333.68	-3,969.25	-412.92	3,969.68	0.00	0.00	0.00
11,900.00	89.68	180.06	7,334.24	-4,069.24	-413.03	4,069.67	0.00	0.00	0.00
12,000.00	89.68	180.06	7,334.80	-4,169.24	-413.14	4,169.67	0.00	0.00	0.00
12,100.00	89.68	180.06	7,335.36	-4,269.24	-413.25	4,269.67	0.00	0.00	0.00
12,200.00	89.68	180.06	7,335.93	-4,369.24	-413.35	4,369.67	0.00	0.00	0.00
12,300.00	89.68	180.06	7,336.49	-4,469.24	-413.46	4,469.67	0.00	0.00	0.00
12,400.00	89.68	180.06	7,337.05	-4,569.24	-413.57	4,569.67	0.00	0.00	0.00
12,500.00	89.68	180.06	7,337.61	-4,669.23	-413.68	4,669.67	0.00	0.00	0.00
12,600.00	89.68	180.06	7,338.17	-4,769.23	-413.78	4,769.66	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well ROBIN 9-14HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4991.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4991.00usft (Drilling Rig)
Site:	1N-65W-09 Robin 2 Pad	North Reference:	True
Well:	ROBIN 9-14HZ	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)
12,700.00	89.68	180.06	7,338.73	-4,869.23	-413.89	4,869.66	0.00	0.00	0.00
12,800.00	89.68	180.06	7,339.29	-4,969.23	-414.00	4,969.66	0.00	0.00	0.00
12,900.00	89.68	180.06	7,339.85	-5,069.23	-414.11	5,069.66	0.00	0.00	0.00
13,000.00	89.68	180.06	7,340.41	-5,169.23	-414.21	5,169.66	0.00	0.00	0.00
13,100.00	89.68	180.06	7,340.98	-5,269.23	-414.32	5,269.66	0.00	0.00	0.00
13,200.00	89.68	180.06	7,341.54	-5,369.22	-414.43	5,369.65	0.00	0.00	0.00
13,300.00	89.68	180.06	7,342.10	-5,469.22	-414.53	5,469.65	0.00	0.00	0.00
13,400.00	89.68	180.06	7,342.66	-5,569.22	-414.64	5,569.65	0.00	0.00	0.00
13,500.00	89.68	180.06	7,343.22	-5,669.22	-414.75	5,669.65	0.00	0.00	0.00
13,600.00	89.68	180.06	7,343.78	-5,769.22	-414.86	5,769.65	0.00	0.00	0.00
13,700.00	89.68	180.06	7,344.34	-5,869.22	-414.96	5,869.65	0.00	0.00	0.00
13,800.00	89.68	180.06	7,344.90	-5,969.21	-415.07	5,969.64	0.00	0.00	0.00
13,900.00	89.68	180.06	7,345.46	-6,069.21	-415.18	6,069.64	0.00	0.00	0.00
14,000.00	89.68	180.06	7,346.03	-6,169.21	-415.29	6,169.64	0.00	0.00	0.00
14,100.00	89.68	180.06	7,346.59	-6,269.21	-415.39	6,269.64	0.00	0.00	0.00
14,200.00	89.68	180.06	7,347.15	-6,369.21	-415.50	6,369.64	0.00	0.00	0.00
14,300.00	89.68	180.06	7,347.71	-6,469.21	-415.61	6,469.64	0.00	0.00	0.00
14,400.00	89.68	180.06	7,348.27	-6,569.20	-415.72	6,569.64	0.00	0.00	0.00
14,500.00	89.68	180.06	7,348.83	-6,669.20	-415.82	6,669.63	0.00	0.00	0.00
14,600.00	89.68	180.06	7,349.39	-6,769.20	-415.93	6,769.63	0.00	0.00	0.00
14,700.00	89.68	180.06	7,349.95	-6,869.20	-416.04	6,869.63	0.00	0.00	0.00
14,800.00	89.68	180.06	7,350.51	-6,969.20	-416.15	6,969.63	0.00	0.00	0.00
14,900.00	89.68	180.06	7,351.08	-7,069.20	-416.25	7,069.63	0.00	0.00	0.00
15,000.00	89.68	180.06	7,351.64	-7,169.19	-416.36	7,169.63	0.00	0.00	0.00
15,100.00	89.68	180.06	7,352.20	-7,269.19	-416.47	7,269.62	0.00	0.00	0.00
15,200.00	89.68	180.06	7,352.76	-7,369.19	-416.57	7,369.62	0.00	0.00	0.00
15,300.00	89.68	180.06	7,353.32	-7,469.19	-416.68	7,469.62	0.00	0.00	0.00
15,400.00	89.68	180.06	7,353.88	-7,569.19	-416.79	7,569.62	0.00	0.00	0.00
15,500.00	89.68	180.06	7,354.44	-7,669.19	-416.90	7,669.62	0.00	0.00	0.00
15,600.00	89.68	180.06	7,355.00	-7,769.18	-417.00	7,769.62	0.00	0.00	0.00
15,700.00	89.68	180.06	7,355.56	-7,869.18	-417.11	7,869.62	0.00	0.00	0.00
15,800.00	89.68	180.06	7,356.13	-7,969.18	-417.22	7,969.61	0.00	0.00	0.00
15,900.00	89.68	180.06	7,356.69	-8,069.18	-417.33	8,069.61	0.00	0.00	0.00
16,000.00	89.68	180.06	7,357.25	-8,169.18	-417.43	8,169.61	0.00	0.00	0.00
16,100.00	89.68	180.06	7,357.81	-8,269.18	-417.54	8,269.61	0.00	0.00	0.00
16,200.00	89.68	180.06	7,358.37	-8,369.17	-417.65	8,369.61	0.00	0.00	0.00
16,300.00	89.68	180.06	7,358.93	-8,469.17	-417.76	8,469.61	0.00	0.00	0.00
16,400.00	89.68	180.06	7,359.49	-8,569.17	-417.86	8,569.60	0.00	0.00	0.00
16,500.00	89.68	180.06	7,360.05	-8,669.17	-417.97	8,669.60	0.00	0.00	0.00
16,600.00	89.68	180.06	7,360.61	-8,769.17	-418.08	8,769.60	0.00	0.00	0.00
16,700.00	89.68	180.06	7,361.18	-8,869.17	-418.19	8,869.60	0.00	0.00	0.00
16,800.00	89.68	180.06	7,361.74	-8,969.16	-418.29	8,969.60	0.00	0.00	0.00
16,900.00	89.68	180.06	7,362.30	-9,069.16	-418.40	9,069.60	0.00	0.00	0.00
17,000.00	89.68	180.06	7,362.86	-9,169.16	-418.51	9,169.59	0.00	0.00	0.00
17,100.00	89.68	180.06	7,363.42	-9,269.16	-418.61	9,269.59	0.00	0.00	0.00
17,200.00	89.68	180.06	7,363.98	-9,369.16	-418.72	9,369.59	0.00	0.00	0.00
17,300.00	89.68	180.06	7,364.54	-9,469.16	-418.83	9,469.59	0.00	0.00	0.00
17,400.00	89.68	180.06	7,365.10	-9,569.15	-418.94	9,569.59	0.00	0.00	0.00
17,500.00	89.68	180.06	7,365.66	-9,669.15	-419.04	9,669.59	0.00	0.00	0.00
17,600.00	89.68	180.06	7,366.23	-9,769.15	-419.15	9,769.59	0.00	0.00	0.00
17,700.00	89.68	180.06	7,366.79	-9,869.15	-419.26	9,869.58	0.00	0.00	0.00
17,800.00	89.68	180.06	7,367.35	-9,969.15	-419.37	9,969.58	0.00	0.00	0.00
17,900.00	89.68	180.06	7,367.91	-10,069.15	-419.47	10,069.58	0.00	0.00	0.00
18,000.00	89.68	180.06	7,368.47	-10,169.15	-419.58	10,169.58	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well ROBIN 9-14HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4991.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4991.00usft (Drilling Rig)
Site:	1N-65W-09 Robin 2 Pad	North Reference:	True
Well:	ROBIN 9-14HZ	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)
18,100.00	89.68	180.06	7,369.03	-10,269.14	-419.69	10,269.58	0.00	0.00	0.00
18,200.00	89.68	180.06	7,369.59	-10,369.14	-419.80	10,369.58	0.00	0.00	0.00
18,272.71	89.68	180.06	7,370.00	-10,441.85	-419.87	10,442.28	0.00	0.00	0.00
TD Well @ 18272.71ft									

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,513.75	1,500.00	9 5/8"	9-5/8	13-1/2
7,757.22	7,311.00	Top of Production	5-1/2	7-7/8

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
826.89	826.00	Fox Hills			
4,234.08	4,151.00	Parkman			
4,447.65	4,362.00	Sussex			
7,033.69	6,939.00	Sharon Springs			
7,054.74	6,958.00	Niobrara			
7,194.10	7,075.00	Nio B			
7,272.87	7,133.00	Nio C			
7,554.90	7,278.00	Fort Hayes			
7,642.24	7,300.00	Codell			

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
400.00	400.00	0.00	0.00	Start Build 1.50
1,266.67	1,259.25	84.78	-48.95	Start 2865.00 hold at 1266.67 MD
4,131.67	4,050.82	642.92	-371.19	Start Drop -2.00
4,781.67	4,695.26	706.51	-407.90	Start 1979.13 hold at 4781.67 MD
6,760.80	6,674.39	706.51	-407.90	KOP @ 6760.80ft
7,300.00	7,151.40	491.49	-408.14	DLS = 9°/100'
7,757.22	7,311.00	73.47	-408.58	End Build @ 7757.22ft
18,272.71	7,370.00	-10,441.85	-419.87	TD Well @ 18272.71ft