

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N  
1N-66-13 VERDE 3-13HZ PAD  
VERDE 13-9HZ**

**Plan A**

**Plan: Permit Rev-1**

## **Standard Planning Report**

**02 June, 2017**



Azimuths to True North  
Magnetic North: 8.01°

Magnetic Field  
Strength: 52325.4snT  
Dip Angle: 66.57°  
Date: 6/1/2017  
Model: IGRF2010

SITE: 1N-66-13 VERDE 3-13HZ PAD

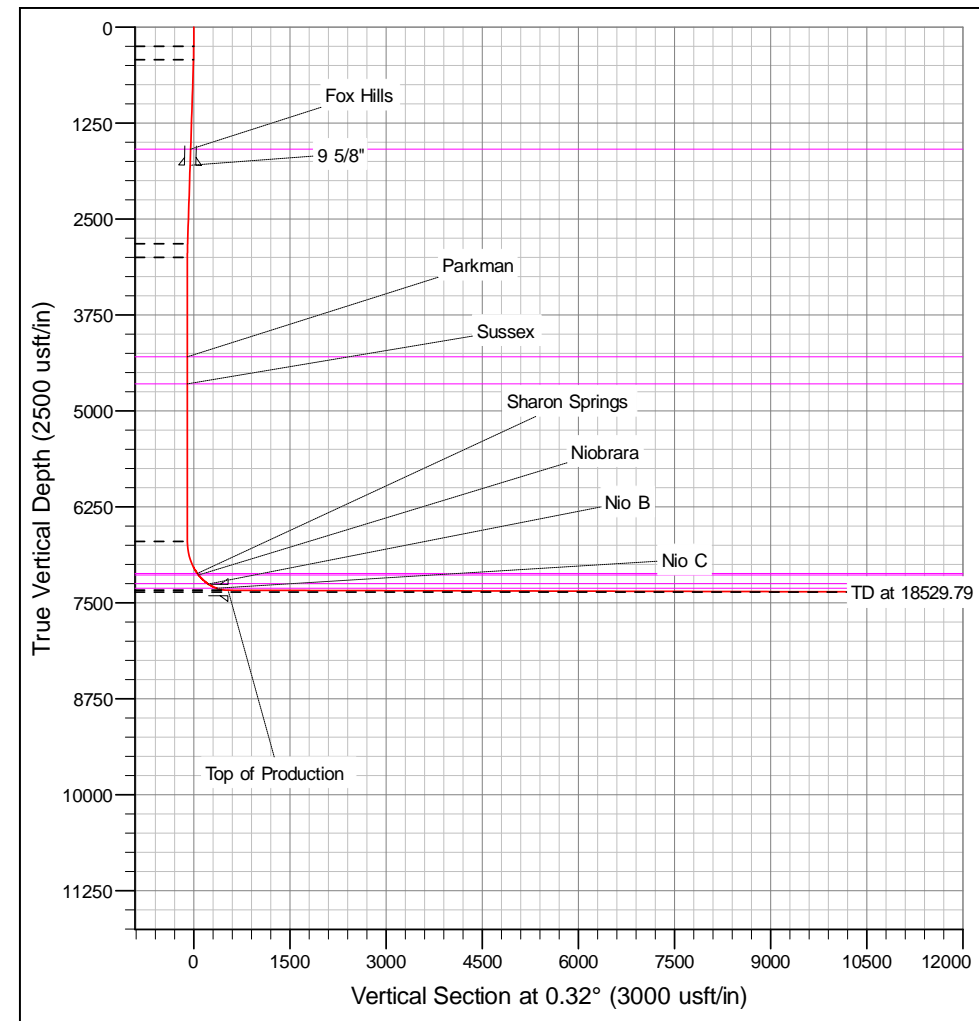
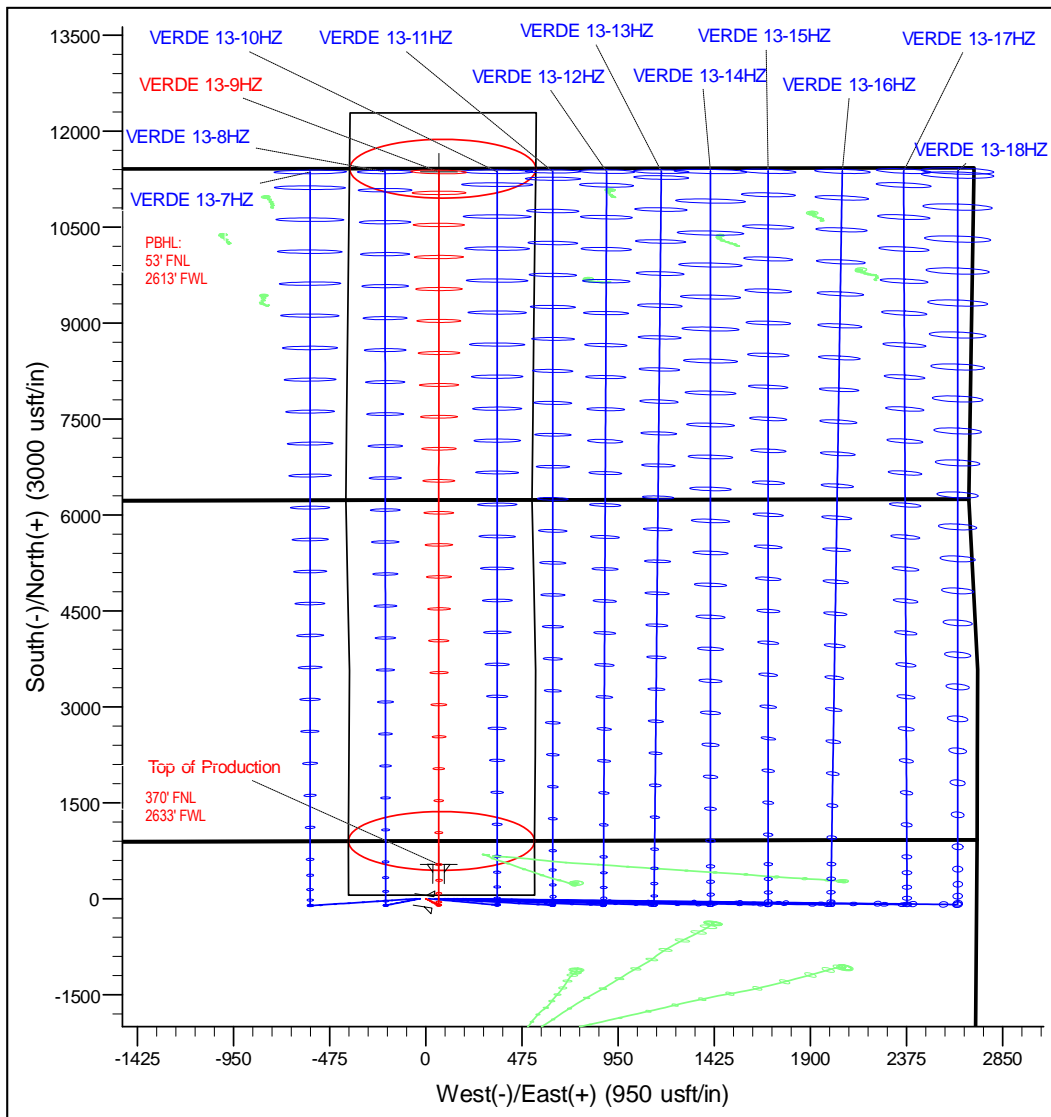
Well: VERDE 13-9HZ  
Wellbore: Plan A  
Design: Permit Rev-1

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1591.00	1592.29	Fox Hills
4295.00	4297.65	Parkman
4648.00	4650.65	Sussex
7118.00	7158.42	Sharon Springs
7139.00	7186.79	Niobrara
7256.00	7378.04	Nio B
7312.00	7523.19	Nio C

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
VERDE 13-9HZ PBHL	7360.00	11363.35	63.90	14558633.00	1717194.00	40.087276	-104.725496

WELL DETAILS: VERDE 13-9HZ					
GL: 5071.00		RKB @ 5088.00usft (D Rig)			
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14547269.51	1717165.11	40.056071	-104.725724

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	Vsect		
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		
425.14	2.63	147.54	425.08	-3.39	2.15	1.50	-3.38		
2827.51	2.63	147.54	2824.92	-96.30	61.25	0.00	-95.96		
3002.65	0.00	0.00	3000.00	-99.69	63.40	1.50	-99.33		
6703.35	0.00	0.00	6700.70	-99.69	63.40	0.00	-99.33		
7702.02	89.88	0.00	7337.32	535.60	63.43	9.00	535.94		
18529.79	89.88	0.00	7360.00	11363.35	63.90	0.00	1363.53		



# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well VERDE 13-9HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Site:</b>	1N-66-13 VERDE 3-13HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	VERDE 13-9HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

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

Site						1N-66-13 VERDE 3-13HZ PAD							
Site Position:						Northing:		14,547,269.73 usft		Latitude:		40.056072	
From:		Lat/Long				Easting:		1,717,120.05 usft		Longitude:		-104.725885	
Position Uncertainty:			3.28 usft			Slot Radius:		13-3/16 "		Grid Convergence:		0.18 °	

Well	VERDE 13-9HZ					
Well Position	+N/-S	-0.36 usft	Northing:	14,547,269.50 usft	Latitude:	40.056071
	+E/-W	45.05 usft	Easting:	1,717,165.11 usft	Longitude:	-104.725724
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	5,071.00 usft

<b>Wellbore</b>	Plan A				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	6/1/2017	8.01	66.57	52,325.44854128

<b>Design</b>	Permit Rev-1				
<b>Audit Notes:</b>					
<b>Version:</b>		<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	0.32	

<b>Plan Survey Tool Program</b>	<b>Date</b>	6/2/2017			
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.00	1,801.51	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWI Fixed:v2:standard declination	
2	1,801.51	18,529.79	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWI Fixed:v2:Rockies, crustal dex	

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well VERDE 13-9HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Site:</b>	1N-66-13 VERDE 3-13HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	VERDE 13-9HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	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	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
425.14	2.63	147.54	425.08	-3.39	2.15	1.50	1.50	0.00	147.54	
2,827.51	2.63	147.54	2,824.92	-96.30	61.25	0.00	0.00	0.00	0.00	
3,002.65	0.00	0.00	3,000.00	-99.69	63.40	1.50	-1.50	0.00	180.00	
6,703.35	0.00	0.00	6,700.70	-99.69	63.40	0.00	0.00	0.00	0.00	
7,702.02	89.88	0.00	7,337.32	535.60	63.43	9.00	9.00	0.00	0.00	
18,529.80	89.88	0.00	7,360.00	11,363.35	63.90	0.00	0.00	0.00	0.00	VERDE 13-9HZ_PE

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<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well VERDE 13-9HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Site:</b>	1N-66-13 VERDE 3-13HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	VERDE 13-9HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	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
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.75	147.54	300.00	-0.28	0.18	-0.28	1.50	1.50	0.00
400.00	2.25	147.54	399.96	-2.48	1.58	-2.48	1.50	1.50	0.00
425.14	2.63	147.54	425.08	-3.39	2.15	-3.38	1.50	1.50	0.00
500.00	2.63	147.54	499.86	-6.28	4.00	-6.26	0.00	0.00	0.00
600.00	2.63	147.54	599.75	-10.15	6.46	-10.11	0.00	0.00	0.00
700.00	2.63	147.54	699.65	-14.02	8.92	-13.97	0.00	0.00	0.00
800.00	2.63	147.54	799.54	-17.89	11.37	-17.82	0.00	0.00	0.00
900.00	2.63	147.54	899.44	-21.75	13.83	-21.68	0.00	0.00	0.00
1,000.00	2.63	147.54	999.33	-25.62	16.29	-25.53	0.00	0.00	0.00
1,100.00	2.63	147.54	1,099.23	-29.49	18.75	-29.38	0.00	0.00	0.00
1,200.00	2.63	147.54	1,199.12	-33.36	21.21	-33.24	0.00	0.00	0.00
1,300.00	2.63	147.54	1,299.02	-37.22	23.67	-37.09	0.00	0.00	0.00
1,400.00	2.63	147.54	1,398.91	-41.09	26.13	-40.94	0.00	0.00	0.00
1,500.00	2.63	147.54	1,498.81	-44.96	28.59	-44.80	0.00	0.00	0.00
1,592.29	2.63	147.54	1,591.00	-48.53	30.86	-48.35	0.00	0.00	0.00
<b>Fox Hills</b>									
1,600.00	2.63	147.54	1,598.70	-48.83	31.05	-48.65	0.00	0.00	0.00
1,700.00	2.63	147.54	1,698.60	-52.69	33.51	-52.51	0.00	0.00	0.00
1,800.00	2.63	147.54	1,798.49	-56.56	35.97	-56.36	0.00	0.00	0.00
1,801.51	2.63	147.54	1,800.00	-56.62	36.01	-56.42	0.00	0.00	0.00
<b>9 5/8"</b>									
1,900.00	2.63	147.54	1,898.39	-60.43	38.43	-60.21	0.00	0.00	0.00
2,000.00	2.63	147.54	1,998.28	-64.30	40.89	-64.07	0.00	0.00	0.00
2,100.00	2.63	147.54	2,098.18	-68.17	43.35	-67.92	0.00	0.00	0.00
2,200.00	2.63	147.54	2,198.07	-72.03	45.81	-71.77	0.00	0.00	0.00
2,300.00	2.63	147.54	2,297.97	-75.90	48.27	-75.63	0.00	0.00	0.00
2,400.00	2.63	147.54	2,397.86	-79.77	50.73	-79.48	0.00	0.00	0.00
2,500.00	2.63	147.54	2,497.76	-83.64	53.19	-83.34	0.00	0.00	0.00
2,600.00	2.63	147.54	2,597.65	-87.50	55.65	-87.19	0.00	0.00	0.00
2,700.00	2.63	147.54	2,697.55	-91.37	58.11	-91.04	0.00	0.00	0.00
2,800.00	2.63	147.54	2,797.44	-95.24	60.57	-94.90	0.00	0.00	0.00
2,827.51	2.63	147.54	2,824.92	-96.30	61.25	-95.96	0.00	0.00	0.00
2,900.00	1.54	147.54	2,897.36	-98.53	62.66	-98.17	1.50	-1.50	0.00
3,000.00	0.04	147.54	2,997.35	-99.69	63.40	-99.33	1.50	-1.50	0.00
3,002.65	0.00	0.00	3,000.00	-99.69	63.40	-99.33	1.50	-1.50	0.00
3,100.00	0.00	0.00	3,097.35	-99.69	63.40	-99.33	0.00	0.00	0.00
3,200.00	0.00	0.00	3,197.35	-99.69	63.40	-99.33	0.00	0.00	0.00
3,300.00	0.00	0.00	3,297.35	-99.69	63.40	-99.33	0.00	0.00	0.00
3,400.00	0.00	0.00	3,397.35	-99.69	63.40	-99.33	0.00	0.00	0.00
3,500.00	0.00	0.00	3,497.35	-99.69	63.40	-99.33	0.00	0.00	0.00
3,600.00	0.00	0.00	3,597.35	-99.69	63.40	-99.33	0.00	0.00	0.00
3,700.00	0.00	0.00	3,697.35	-99.69	63.40	-99.33	0.00	0.00	0.00
3,800.00	0.00	0.00	3,797.35	-99.69	63.40	-99.33	0.00	0.00	0.00
3,900.00	0.00	0.00	3,897.35	-99.69	63.40	-99.33	0.00	0.00	0.00
4,000.00	0.00	0.00	3,997.35	-99.69	63.40	-99.33	0.00	0.00	0.00
4,100.00	0.00	0.00	4,097.35	-99.69	63.40	-99.33	0.00	0.00	0.00
4,200.00	0.00	0.00	4,197.35	-99.69	63.40	-99.33	0.00	0.00	0.00
4,297.65	0.00	0.00	4,295.00	-99.69	63.40	-99.33	0.00	0.00	0.00
<b>Parkman</b>									

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well VERDE 13-9HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Site:</b>	1N-66-13 VERDE 3-13HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	VERDE 13-9HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	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)
4,300.00	0.00	0.00	4,297.35	-99.69	63.40	-99.33	0.00	0.00	0.00
4,400.00	0.00	0.00	4,397.35	-99.69	63.40	-99.33	0.00	0.00	0.00
4,500.00	0.00	0.00	4,497.35	-99.69	63.40	-99.33	0.00	0.00	0.00
4,600.00	0.00	0.00	4,597.35	-99.69	63.40	-99.33	0.00	0.00	0.00
4,650.65	0.00	0.00	4,648.00	-99.69	63.40	-99.33	0.00	0.00	0.00
<b>Sussex</b>									
4,700.00	0.00	0.00	4,697.35	-99.69	63.40	-99.33	0.00	0.00	0.00
4,800.00	0.00	0.00	4,797.35	-99.69	63.40	-99.33	0.00	0.00	0.00
4,900.00	0.00	0.00	4,897.35	-99.69	63.40	-99.33	0.00	0.00	0.00
5,000.00	0.00	0.00	4,997.35	-99.69	63.40	-99.33	0.00	0.00	0.00
5,100.00	0.00	0.00	5,097.35	-99.69	63.40	-99.33	0.00	0.00	0.00
5,200.00	0.00	0.00	5,197.35	-99.69	63.40	-99.33	0.00	0.00	0.00
5,300.00	0.00	0.00	5,297.35	-99.69	63.40	-99.33	0.00	0.00	0.00
5,400.00	0.00	0.00	5,397.35	-99.69	63.40	-99.33	0.00	0.00	0.00
5,500.00	0.00	0.00	5,497.35	-99.69	63.40	-99.33	0.00	0.00	0.00
5,600.00	0.00	0.00	5,597.35	-99.69	63.40	-99.33	0.00	0.00	0.00
5,700.00	0.00	0.00	5,697.35	-99.69	63.40	-99.33	0.00	0.00	0.00
5,800.00	0.00	0.00	5,797.35	-99.69	63.40	-99.33	0.00	0.00	0.00
5,900.00	0.00	0.00	5,897.35	-99.69	63.40	-99.33	0.00	0.00	0.00
6,000.00	0.00	0.00	5,997.35	-99.69	63.40	-99.33	0.00	0.00	0.00
6,100.00	0.00	0.00	6,097.35	-99.69	63.40	-99.33	0.00	0.00	0.00
6,200.00	0.00	0.00	6,197.35	-99.69	63.40	-99.33	0.00	0.00	0.00
6,300.00	0.00	0.00	6,297.35	-99.69	63.40	-99.33	0.00	0.00	0.00
6,400.00	0.00	0.00	6,397.35	-99.69	63.40	-99.33	0.00	0.00	0.00
6,500.00	0.00	0.00	6,497.35	-99.69	63.40	-99.33	0.00	0.00	0.00
6,600.00	0.00	0.00	6,597.35	-99.69	63.40	-99.33	0.00	0.00	0.00
6,700.00	0.00	0.00	6,697.35	-99.69	63.40	-99.33	0.00	0.00	0.00
6,703.35	0.00	0.00	6,700.70	-99.69	63.40	-99.33	0.00	0.00	0.00
6,800.00	8.70	0.00	6,796.98	-92.37	63.40	-92.01	9.00	9.00	0.00
6,900.00	17.70	0.00	6,894.24	-69.56	63.40	-69.20	9.00	9.00	0.00
7,000.00	26.70	0.00	6,986.63	-31.82	63.40	-31.46	9.00	9.00	0.00
7,100.00	35.70	0.00	7,072.18	19.93	63.41	20.29	9.00	9.00	0.00
7,158.42	40.96	0.00	7,118.00	56.15	63.41	56.51	9.00	9.00	0.00
<b>Sharon Springs</b>									
7,186.79	43.51	0.00	7,139.00	75.21	63.41	75.57	9.00	9.00	0.00
<b>Niobrara</b>									
7,200.00	44.70	0.00	7,148.49	84.41	63.41	84.76	9.00	9.00	0.00
7,300.00	53.70	0.00	7,213.76	160.03	63.41	160.38	9.00	9.00	0.00
7,378.04	60.72	0.00	7,256.00	225.59	63.41	225.95	9.00	9.00	0.00
<b>Nio B</b>									
7,400.00	62.70	0.00	7,266.41	244.93	63.42	245.28	9.00	9.00	0.00
7,500.00	71.70	0.00	7,305.12	337.02	63.42	337.37	9.00	9.00	0.00
7,523.19	73.79	0.00	7,312.00	359.16	63.42	359.51	9.00	9.00	0.00
<b>Nio C</b>									
7,600.00	80.70	0.00	7,328.95	434.03	63.42	434.38	9.00	9.00	0.00
7,700.00	89.70	0.00	7,337.32	533.58	63.43	533.93	9.00	9.00	0.00
7,702.02	89.88	0.00	7,337.32	535.60	63.43	535.95	8.99	8.99	0.00
<b>Top of Production - VERDE 13-9HZ_PHL</b>									
7,800.00	89.88	0.00	7,337.53	633.58	63.43	633.92	0.00	0.00	0.00
7,900.00	89.88	0.00	7,337.74	733.58	63.44	733.92	0.00	0.00	0.00
8,000.00	89.88	0.00	7,337.95	833.58	63.44	833.92	0.00	0.00	0.00
8,100.00	89.88	0.00	7,338.16	933.58	63.45	933.92	0.00	0.00	0.00
8,200.00	89.88	0.00	7,338.37	1,033.58	63.45	1,033.92	0.00	0.00	0.00

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<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well VERDE 13-9HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Site:</b>	1N-66-13 VERDE 3-13HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	VERDE 13-9HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	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)
8,300.00	89.88	0.00	7,338.57	1,133.58	63.45	1,133.92	0.00	0.00	0.00
8,400.00	89.88	0.00	7,338.78	1,233.58	63.46	1,233.91	0.00	0.00	0.00
8,500.00	89.88	0.00	7,338.99	1,333.58	63.46	1,333.91	0.00	0.00	0.00
8,600.00	89.88	0.00	7,339.20	1,433.58	63.47	1,433.91	0.00	0.00	0.00
8,700.00	89.88	0.00	7,339.41	1,533.58	63.47	1,533.91	0.00	0.00	0.00
8,800.00	89.88	0.00	7,339.62	1,633.58	63.48	1,633.91	0.00	0.00	0.00
8,900.00	89.88	0.00	7,339.83	1,733.58	63.48	1,733.91	0.00	0.00	0.00
9,000.00	89.88	0.00	7,340.04	1,833.58	63.48	1,833.90	0.00	0.00	0.00
9,100.00	89.88	0.00	7,340.25	1,933.58	63.49	1,933.90	0.00	0.00	0.00
9,200.00	89.88	0.00	7,340.46	2,033.57	63.49	2,033.90	0.00	0.00	0.00
9,300.00	89.88	0.00	7,340.67	2,133.57	63.50	2,133.90	0.00	0.00	0.00
9,400.00	89.88	0.00	7,340.88	2,233.57	63.50	2,233.90	0.00	0.00	0.00
9,500.00	89.88	0.00	7,341.09	2,333.57	63.51	2,333.89	0.00	0.00	0.00
9,600.00	89.88	0.00	7,341.30	2,433.57	63.51	2,433.89	0.00	0.00	0.00
9,700.00	89.88	0.00	7,341.51	2,533.57	63.51	2,533.89	0.00	0.00	0.00
9,800.00	89.88	0.00	7,341.72	2,633.57	63.52	2,633.89	0.00	0.00	0.00
9,900.00	89.88	0.00	7,341.93	2,733.57	63.52	2,733.89	0.00	0.00	0.00
10,000.00	89.88	0.00	7,342.14	2,833.57	63.53	2,833.89	0.00	0.00	0.00
10,100.00	89.88	0.00	7,342.34	2,933.57	63.53	2,933.88	0.00	0.00	0.00
10,200.00	89.88	0.00	7,342.55	3,033.57	63.54	3,033.88	0.00	0.00	0.00
10,300.00	89.88	0.00	7,342.76	3,133.57	63.54	3,133.88	0.00	0.00	0.00
10,400.00	89.88	0.00	7,342.97	3,233.57	63.55	3,233.88	0.00	0.00	0.00
10,500.00	89.88	0.00	7,343.18	3,333.57	63.55	3,333.88	0.00	0.00	0.00
10,600.00	89.88	0.00	7,343.39	3,433.57	63.55	3,433.87	0.00	0.00	0.00
10,700.00	89.88	0.00	7,343.60	3,533.57	63.56	3,533.87	0.00	0.00	0.00
10,800.00	89.88	0.00	7,343.81	3,633.57	63.56	3,633.87	0.00	0.00	0.00
10,900.00	89.88	0.00	7,344.02	3,733.57	63.57	3,733.87	0.00	0.00	0.00
11,000.00	89.88	0.00	7,344.23	3,833.57	63.57	3,833.87	0.00	0.00	0.00
11,100.00	89.88	0.00	7,344.44	3,933.57	63.58	3,933.87	0.00	0.00	0.00
11,200.00	89.88	0.00	7,344.65	4,033.57	63.58	4,033.86	0.00	0.00	0.00
11,300.00	89.88	0.00	7,344.86	4,133.57	63.58	4,133.86	0.00	0.00	0.00
11,400.00	89.88	0.00	7,345.07	4,233.57	63.59	4,233.86	0.00	0.00	0.00
11,500.00	89.88	0.00	7,345.28	4,333.57	63.59	4,333.86	0.00	0.00	0.00
11,600.00	89.88	0.00	7,345.49	4,433.57	63.60	4,433.86	0.00	0.00	0.00
11,700.00	89.88	0.00	7,345.70	4,533.57	63.60	4,533.86	0.00	0.00	0.00
11,800.00	89.88	0.00	7,345.91	4,633.57	63.61	4,633.85	0.00	0.00	0.00
11,900.00	89.88	0.00	7,346.11	4,733.57	63.61	4,733.85	0.00	0.00	0.00
12,000.00	89.88	0.00	7,346.32	4,833.57	63.62	4,833.85	0.00	0.00	0.00
12,100.00	89.88	0.00	7,346.53	4,933.57	63.62	4,933.85	0.00	0.00	0.00
12,200.00	89.88	0.00	7,346.74	5,033.57	63.62	5,033.85	0.00	0.00	0.00
12,300.00	89.88	0.00	7,346.95	5,133.57	63.63	5,133.84	0.00	0.00	0.00
12,400.00	89.88	0.00	7,347.16	5,233.57	63.63	5,233.84	0.00	0.00	0.00
12,500.00	89.88	0.00	7,347.37	5,333.57	63.64	5,333.84	0.00	0.00	0.00
12,600.00	89.88	0.00	7,347.58	5,433.57	63.64	5,433.84	0.00	0.00	0.00
12,700.00	89.88	0.00	7,347.79	5,533.57	63.65	5,533.84	0.00	0.00	0.00
12,800.00	89.88	0.00	7,348.00	5,633.57	63.65	5,633.84	0.00	0.00	0.00
12,900.00	89.88	0.00	7,348.21	5,733.57	63.65	5,733.83	0.00	0.00	0.00
13,000.00	89.88	0.00	7,348.42	5,833.57	63.66	5,833.83	0.00	0.00	0.00
13,100.00	89.88	0.00	7,348.63	5,933.57	63.66	5,933.83	0.00	0.00	0.00
13,200.00	89.88	0.00	7,348.84	6,033.57	63.67	6,033.83	0.00	0.00	0.00
13,300.00	89.88	0.00	7,349.05	6,133.57	63.67	6,133.83	0.00	0.00	0.00
13,400.00	89.88	0.00	7,349.26	6,233.57	63.68	6,233.83	0.00	0.00	0.00
13,500.00	89.88	0.00	7,349.47	6,333.57	63.68	6,333.82	0.00	0.00	0.00
13,600.00	89.88	0.00	7,349.68	6,433.57	63.69	6,433.82	0.00	0.00	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well VERDE 13-9HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Site:</b>	1N-66-13 VERDE 3-13HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	VERDE 13-9HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	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)
13,700.00	89.88	0.00	7,349.88	6,533.57	63.69	6,533.82	0.00	0.00	0.00
13,800.00	89.88	0.00	7,350.09	6,633.56	63.69	6,633.82	0.00	0.00	0.00
13,900.00	89.88	0.00	7,350.30	6,733.56	63.70	6,733.82	0.00	0.00	0.00
14,000.00	89.88	0.00	7,350.51	6,833.56	63.70	6,833.81	0.00	0.00	0.00
14,100.00	89.88	0.00	7,350.72	6,933.56	63.71	6,933.81	0.00	0.00	0.00
14,200.00	89.88	0.00	7,350.93	7,033.56	63.71	7,033.81	0.00	0.00	0.00
14,300.00	89.88	0.00	7,351.14	7,133.56	63.72	7,133.81	0.00	0.00	0.00
14,400.00	89.88	0.00	7,351.35	7,233.56	63.72	7,233.81	0.00	0.00	0.00
14,500.00	89.88	0.00	7,351.56	7,333.56	63.72	7,333.81	0.00	0.00	0.00
14,600.00	89.88	0.00	7,351.77	7,433.56	63.73	7,433.80	0.00	0.00	0.00
14,700.00	89.88	0.00	7,351.98	7,533.56	63.73	7,533.80	0.00	0.00	0.00
14,800.00	89.88	0.00	7,352.19	7,633.56	63.74	7,633.80	0.00	0.00	0.00
14,900.00	89.88	0.00	7,352.40	7,733.56	63.74	7,733.80	0.00	0.00	0.00
15,000.00	89.88	0.00	7,352.61	7,833.56	63.75	7,833.80	0.00	0.00	0.00
15,100.00	89.88	0.00	7,352.82	7,933.56	63.75	7,933.80	0.00	0.00	0.00
15,200.00	89.88	0.00	7,353.03	8,033.56	63.76	8,033.79	0.00	0.00	0.00
15,300.00	89.88	0.00	7,353.24	8,133.56	63.76	8,133.79	0.00	0.00	0.00
15,400.00	89.88	0.00	7,353.45	8,233.56	63.76	8,233.79	0.00	0.00	0.00
15,500.00	89.88	0.00	7,353.65	8,333.56	63.77	8,333.79	0.00	0.00	0.00
15,600.00	89.88	0.00	7,353.86	8,433.56	63.77	8,433.79	0.00	0.00	0.00
15,700.00	89.88	0.00	7,354.07	8,533.56	63.78	8,533.78	0.00	0.00	0.00
15,800.00	89.88	0.00	7,354.28	8,633.56	63.78	8,633.78	0.00	0.00	0.00
15,900.00	89.88	0.00	7,354.49	8,733.56	63.79	8,733.78	0.00	0.00	0.00
16,000.00	89.88	0.00	7,354.70	8,833.56	63.79	8,833.78	0.00	0.00	0.00
16,100.00	89.88	0.00	7,354.91	8,933.56	63.79	8,933.78	0.00	0.00	0.00
16,200.00	89.88	0.00	7,355.12	9,033.56	63.80	9,033.78	0.00	0.00	0.00
16,300.00	89.88	0.00	7,355.33	9,133.56	63.80	9,133.77	0.00	0.00	0.00
16,400.00	89.88	0.00	7,355.54	9,233.56	63.81	9,233.77	0.00	0.00	0.00
16,500.00	89.88	0.00	7,355.75	9,333.56	63.81	9,333.77	0.00	0.00	0.00
16,600.00	89.88	0.00	7,355.96	9,433.56	63.82	9,433.77	0.00	0.00	0.00
16,700.00	89.88	0.00	7,356.17	9,533.56	63.82	9,533.77	0.00	0.00	0.00
16,800.00	89.88	0.00	7,356.38	9,633.56	63.82	9,633.77	0.00	0.00	0.00
16,900.00	89.88	0.00	7,356.59	9,733.56	63.83	9,733.76	0.00	0.00	0.00
17,000.00	89.88	0.00	7,356.80	9,833.56	63.83	9,833.76	0.00	0.00	0.00
17,100.00	89.88	0.00	7,357.01	9,933.56	63.84	9,933.76	0.00	0.00	0.00
17,200.00	89.88	0.00	7,357.22	10,033.56	63.84	10,033.76	0.00	0.00	0.00
17,300.00	89.88	0.00	7,357.42	10,133.56	63.85	10,133.76	0.00	0.00	0.00
17,400.00	89.88	0.00	7,357.63	10,233.56	63.85	10,233.75	0.00	0.00	0.00
17,500.00	89.88	0.00	7,357.84	10,333.56	63.86	10,333.75	0.00	0.00	0.00
17,600.00	89.88	0.00	7,358.05	10,433.56	63.86	10,433.75	0.00	0.00	0.00
17,700.00	89.88	0.00	7,358.26	10,533.56	63.86	10,533.75	0.00	0.00	0.00
17,800.00	89.88	0.00	7,358.47	10,633.56	63.87	10,633.75	0.00	0.00	0.00
17,900.00	89.88	0.00	7,358.68	10,733.56	63.87	10,733.75	0.00	0.00	0.00
18,000.00	89.88	0.00	7,358.89	10,833.56	63.88	10,833.74	0.00	0.00	0.00
18,100.00	89.88	0.00	7,359.10	10,933.56	63.88	10,933.74	0.00	0.00	0.00
18,200.00	89.88	0.00	7,359.31	11,033.56	63.89	11,033.74	0.00	0.00	0.00
18,300.00	89.88	0.00	7,359.52	11,133.56	63.89	11,133.74	0.00	0.00	0.00
18,400.00	89.88	0.00	7,359.73	11,233.55	63.89	11,233.74	0.00	0.00	0.00
18,500.00	89.88	0.00	7,359.94	11,333.55	63.90	11,333.73	0.00	0.00	0.00
18,529.80	89.88	0.00	7,360.00	11,363.35	63.90	11,363.53	0.00	0.00	0.00
VERDE 13-9HZ_PBHL									



# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well VERDE 13-9HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Site:</b>	1N-66-13 VERDE 3-13HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	VERDE 13-9HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
VERDE 13-9HZ_PHL	0.00	0.00	7,337.32	535.60	63.43	14,547,805.29	1,717,226.88	40.057542	-104.725498
- plan hits target center									
- Point									
VERDE 13-9HZ_PBHI	0.00	0.00	7,360.00	11,363.35	63.90	14,558,633.00	1,717,194.00	40.087276	-104.725496
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,801.51	1,800.00	9 5/8"	9-5/8	13-1/2	
7,702.02	7,337.32	Top of Production	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,592.29	1,591.00	Fox Hills				
4,297.65	4,295.00	Parkman				
4,650.65	4,648.00	Sussex				
7,158.42	7,118.00	Sharon Springs				
7,186.79	7,139.00	Niobrara				
7,378.04	7,256.00	Nio B				
7,523.19	7,312.00	Nio C				