

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
2N-66W-24 POLO 10-24HZ PAD
POLO 24-6HZ**

Plan A

Plan: Permit Rev-1

SHL Lat/Long: 40.122759/-104.721510
Survey Program: MWD+IFR

Standard Planning Report

11 September, 2017

Project: WELD-NAD83-UTMFT13N
Site: 2N-66W-24 POLO 10-24HZ PAD
Well: POLO 24-6HZ
Wellbore: Plan A
Design: Permit Rev-1

US ROCKIES WATTENBERG PLANNING

CASING DETAILS

TVD	MD	Size
1500.00	1522.64	9-5/8
7700.00	8213.93	5-1/2

WELL DETAILS: POLO 24-6HZ

GL = 5058'

RKB = 17" @ 5075.00usft (Drilling Rig)

SECTION DETAILS

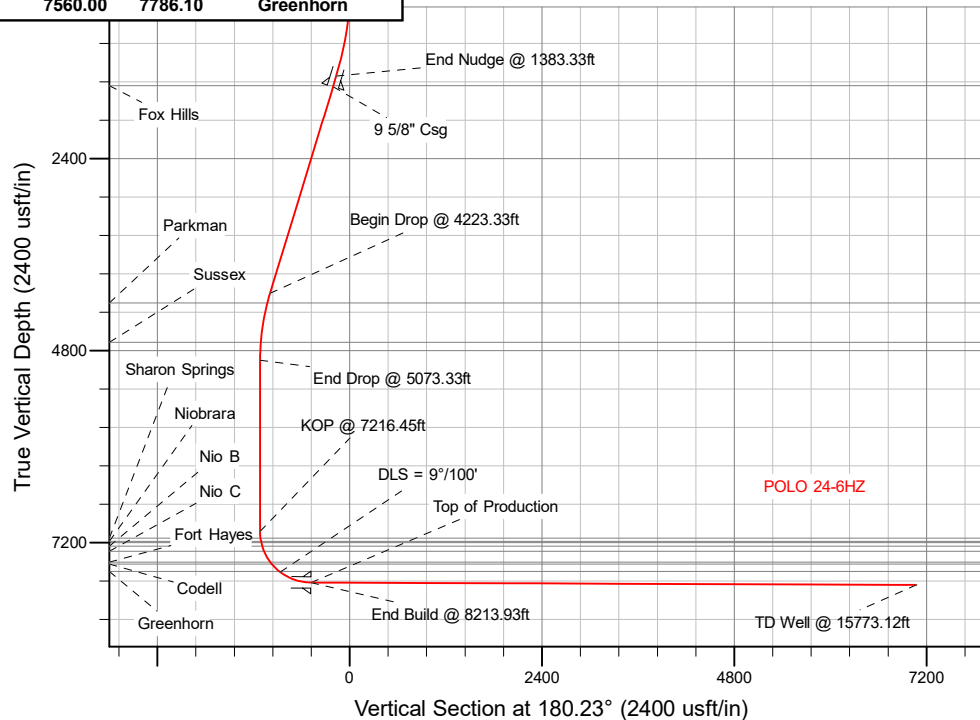
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	1383.33	17.00	355.00	1366.78	166.27	-14.55	1.50	355.00	-166.21	
4	4223.33	17.00	355.00	4082.68	993.44	-86.92	0.00	0.00	-993.09	
5	5073.33	0.00	0.00	4920.27	1118.15	-97.83	2.00	180.00	-1117.74	
6	7216.45	0.00	0.00	7063.39	1118.15	-97.83	0.00	0.00	-1117.74	
7	8213.93	89.77	180.23	7700.00	484.06	-100.35	9.00	180.23	-483.65	
8	15773.12	89.77	180.23	7730.00	-7075.02	-130.43	0.00	0.00	7075.48	POLO 24-6HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

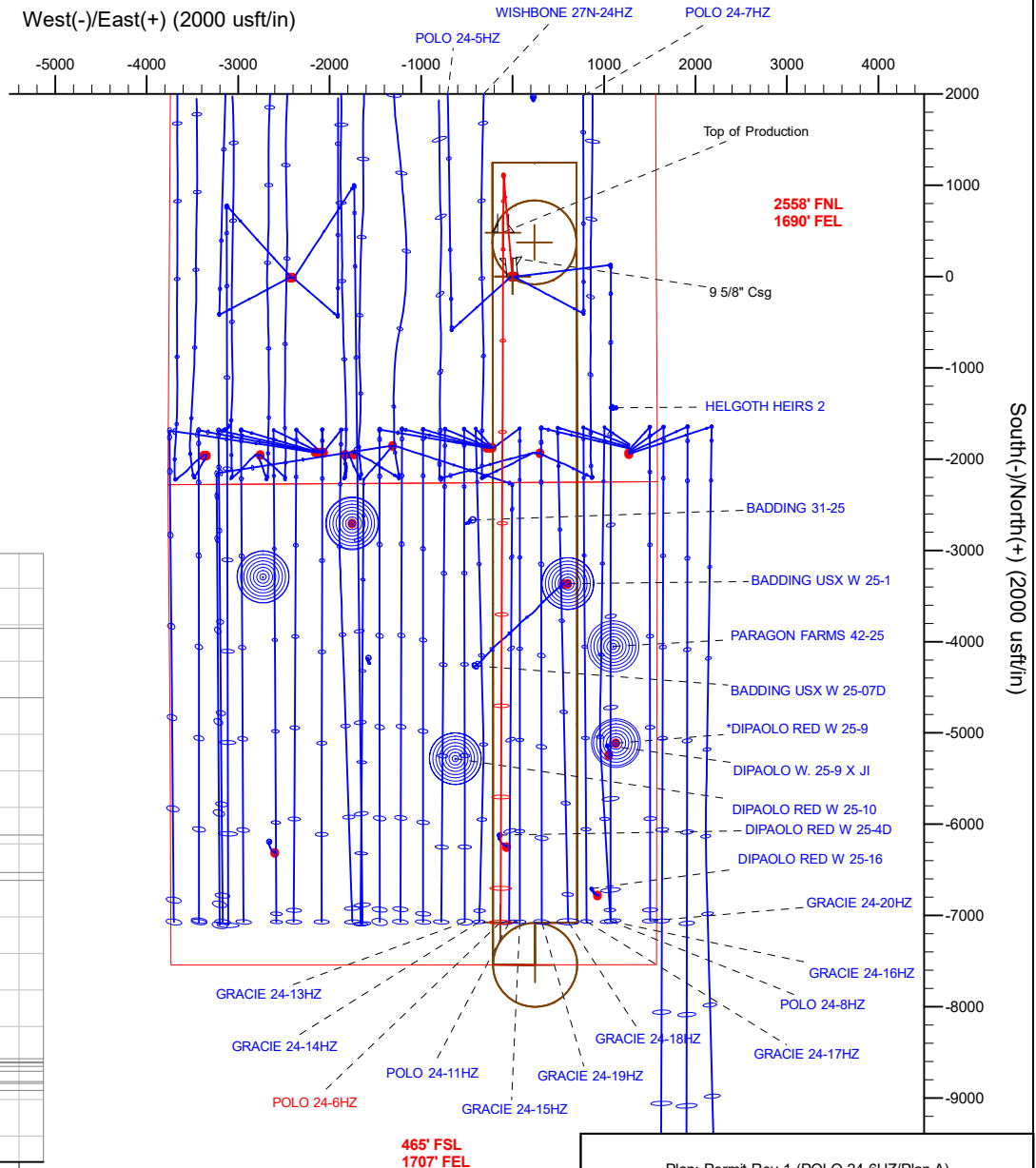
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
POLO 24-6HZ_SHL	0.00	0.00	0.00	40.122759	-104.721510
POLO 24-6HZ_BHL	7730.00	-7075.02	-130.43	40.103330	-104.721976

FORMATION TOP DETAILS

TVDPATH	MDPATH	Formation
1488.00	1510.09	Fox Hills
4205.00	4350.42	Parkman
4693.00	4845.83	Sussex
7144.00	7297.28	Sharon Springs
7184.00	7337.80	Niobrara
7246.00	7401.67	Nio B
7307.00	7466.44	Nio C
7444.00	7624.42	Fort Hayes
7468.00	7654.92	Codell
7560.00	7786.10	Greenhorn



West(-)/East(+) (2000 usft/in)



Plan: Permit Rev-1 (POLO 24-6HZ/Plan A)

Created By: _____ Date: 9/11/2017
Reviewed: _____ Date: _____

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well POLO 24-6HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5075.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5075.00usft (Drilling Rig)
Site:	2N-66W-24 POLO 10-24HZ PAD	North Reference:	True
Well:	POLO 24-6HZ	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	2N-66W-24 POLO 10-24HZ PAD			
Site Position:		Northing:	14,571,557.70 usft	Latitude: 40.122760
From:	Lat/Long	Easting:	1,718,253.17 usft	Longitude: -104.721564
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.18 °

Well	POLO 24-6HZ			
Well Position	+N/-S	-0.36 usft	Northing:	14,571,557.39 usft
	+E/-W	15.10 usft	Easting:	1,718,268.26 usft
Position Uncertainty	3.28 usft	Wellhead Elevation:		Ground Level: 5,058.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/8/2017	7.98	66.62	52,332.53940148

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	180.23

Plan Survey Tool Program		Date	9/9/2017		
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+II Fixed:v2:crustal field declination	
2	1,500.00	15,773.12	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+II Fixed:v2:crustal field declination	

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Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5075.00usft (Drilling Rig)
Site:	2N-66W-24 POLO 10-24HZ PAD	North Reference:	True
Well:	POLO 24-6HZ	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	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,383.33	17.00	355.00	1,366.78	166.27	-14.55	1.50	1.50	0.00	355.00	
4,223.33	17.00	355.00	4,082.68	993.44	-86.92	0.00	0.00	0.00	0.00	
5,073.33	0.00	0.00	4,920.27	1,118.15	-97.83	2.00	-2.00	0.00	180.00	
7,216.45	0.00	0.00	7,063.39	1,118.15	-97.83	0.00	0.00	0.00	0.00	
8,213.93	89.77	180.23	7,700.00	484.06	-100.35	9.00	9.00	-18.02	180.23	
15,773.12	89.77	180.23	7,730.00	-7,075.02	-130.43	0.00	0.00	0.00	0.00	POLO 24-6HZ_BHL

Corporate Planning Report

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Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5075.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5075.00usft (Drilling Rig)
Site:	2N-66W-24 POLO 10-24HZ PAD	North Reference:	True
Well:	POLO 24-6HZ	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
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	355.00	300.00	0.33	-0.03	-0.33	1.50	1.50	0.00
400.00	2.25	355.00	399.96	2.93	-0.26	-2.93	1.50	1.50	0.00
500.00	3.75	355.00	499.82	8.15	-0.71	-8.14	1.50	1.50	0.00
600.00	5.25	355.00	599.51	15.96	-1.40	-15.96	1.50	1.50	0.00
700.00	6.75	355.00	698.96	26.38	-2.31	-26.37	1.50	1.50	0.00
800.00	8.25	355.00	798.10	39.38	-3.45	-39.36	1.50	1.50	0.00
900.00	9.75	355.00	896.87	54.96	-4.81	-54.94	1.50	1.50	0.00
1,000.00	11.25	355.00	995.19	73.12	-6.40	-73.09	1.50	1.50	0.00
1,100.00	12.75	355.00	1,093.00	93.83	-8.21	-93.79	1.50	1.50	0.00
1,200.00	14.25	355.00	1,190.24	117.08	-10.24	-117.04	1.50	1.50	0.00
1,300.00	15.75	355.00	1,286.83	142.86	-12.50	-142.81	1.50	1.50	0.00
1,383.33	17.00	355.00	1,366.78	166.27	-14.55	-166.21	1.50	1.50	0.00
End Nudge @ 1383.33ft									
1,400.00	17.00	355.00	1,382.72	171.12	-14.97	-171.06	0.00	0.00	0.00
1,500.00	17.00	355.00	1,478.35	200.25	-17.52	-200.18	0.00	0.00	0.00
1,510.09	17.00	355.00	1,488.00	203.19	-17.78	-203.12	0.00	0.00	0.00
Fox Hills									
1,522.64	17.00	355.00	1,500.00	206.84	-18.10	-206.77	0.00	0.00	0.00
9 5/8" Csg									
1,600.00	17.00	355.00	1,573.98	229.37	-20.07	-229.29	0.00	0.00	0.00
1,700.00	17.00	355.00	1,669.61	258.50	-22.62	-258.41	0.00	0.00	0.00
1,800.00	17.00	355.00	1,765.24	287.63	-25.16	-287.52	0.00	0.00	0.00
1,900.00	17.00	355.00	1,860.87	316.75	-27.71	-316.64	0.00	0.00	0.00
2,000.00	17.00	355.00	1,956.50	345.88	-30.26	-345.75	0.00	0.00	0.00
2,100.00	17.00	355.00	2,052.13	375.00	-32.81	-374.87	0.00	0.00	0.00
2,200.00	17.00	355.00	2,147.76	404.13	-35.36	-403.98	0.00	0.00	0.00
2,300.00	17.00	355.00	2,243.39	433.26	-37.90	-433.10	0.00	0.00	0.00
2,400.00	17.00	355.00	2,339.02	462.38	-40.45	-462.22	0.00	0.00	0.00
2,500.00	17.00	355.00	2,434.65	491.51	-43.00	-491.33	0.00	0.00	0.00
2,600.00	17.00	355.00	2,530.28	520.63	-45.55	-520.45	0.00	0.00	0.00
2,700.00	17.00	355.00	2,625.91	549.76	-48.10	-549.56	0.00	0.00	0.00
2,800.00	17.00	355.00	2,721.54	578.89	-50.65	-578.68	0.00	0.00	0.00
2,900.00	17.00	355.00	2,817.17	608.01	-53.19	-607.79	0.00	0.00	0.00
3,000.00	17.00	355.00	2,912.80	637.14	-55.74	-636.91	0.00	0.00	0.00
3,100.00	17.00	355.00	3,008.43	666.26	-58.29	-666.02	0.00	0.00	0.00
3,200.00	17.00	355.00	3,104.06	695.39	-60.84	-695.14	0.00	0.00	0.00
3,300.00	17.00	355.00	3,199.70	724.52	-63.39	-724.25	0.00	0.00	0.00
3,400.00	17.00	355.00	3,295.33	753.64	-65.94	-753.37	0.00	0.00	0.00
3,500.00	17.00	355.00	3,390.96	782.77	-68.48	-782.49	0.00	0.00	0.00
3,600.00	17.00	355.00	3,486.59	811.89	-71.03	-811.60	0.00	0.00	0.00
3,700.00	17.00	355.00	3,582.22	841.02	-73.58	-840.72	0.00	0.00	0.00
3,800.00	17.00	355.00	3,677.85	870.14	-76.13	-869.83	0.00	0.00	0.00
3,900.00	17.00	355.00	3,773.48	899.27	-78.68	-898.95	0.00	0.00	0.00
4,000.00	17.00	355.00	3,869.11	928.40	-81.22	-928.06	0.00	0.00	0.00
4,100.00	17.00	355.00	3,964.74	957.52	-83.77	-957.18	0.00	0.00	0.00
4,200.00	17.00	355.00	4,060.37	986.65	-86.32	-986.29	0.00	0.00	0.00
4,223.33	17.00	355.00	4,082.68	993.44	-86.92	-993.09	0.00	0.00	0.00
Begin Drop @ 4223.33ft									
4,300.00	15.47	355.00	4,156.29	1,014.79	-88.78	-1,014.43	2.00	-2.00	0.00

Corporate
Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well POLO 24-6HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5075.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5075.00usft (Drilling Rig)
Site:	2N-66W-24 POLO 10-24HZ PAD	North Reference:	True
Well:	POLO 24-6HZ	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)
4,350.42	14.46	355.00	4,205.00	1,027.76	-89.92	-1,027.39	2.00	-2.00	0.00
Parkman									
4,400.00	13.47	355.00	4,253.12	1,039.68	-90.96	-1,039.31	2.00	-2.00	0.00
4,500.00	11.47	355.00	4,350.75	1,061.18	-92.84	-1,060.80	2.00	-2.00	0.00
4,600.00	9.47	355.00	4,449.08	1,079.28	-94.42	-1,078.89	2.00	-2.00	0.00
4,700.00	7.47	355.00	4,547.99	1,093.95	-95.71	-1,093.55	2.00	-2.00	0.00
4,800.00	5.47	355.00	4,647.35	1,105.17	-96.69	-1,104.77	2.00	-2.00	0.00
4,845.83	4.55	355.00	4,693.00	1,109.15	-97.04	-1,108.75	2.00	-2.00	0.00
Sussex									
4,900.00	3.47	355.00	4,747.04	1,112.92	-97.37	-1,112.52	2.00	-2.00	0.00
5,000.00	1.47	355.00	4,846.94	1,117.21	-97.74	-1,116.81	2.00	-2.00	0.00
5,073.33	0.00	0.00	4,920.27	1,118.15	-97.83	-1,117.74	2.00	-2.00	0.00
End Drop @ 5073.33ft									
5,100.00	0.00	0.00	4,946.93	1,118.15	-97.83	-1,117.74	0.00	0.00	0.00
5,200.00	0.00	0.00	5,046.93	1,118.15	-97.83	-1,117.74	0.00	0.00	0.00
5,300.00	0.00	0.00	5,146.93	1,118.15	-97.83	-1,117.74	0.00	0.00	0.00
5,400.00	0.00	0.00	5,246.93	1,118.15	-97.83	-1,117.74	0.00	0.00	0.00
5,500.00	0.00	0.00	5,346.93	1,118.15	-97.83	-1,117.74	0.00	0.00	0.00
5,600.00	0.00	0.00	5,446.93	1,118.15	-97.83	-1,117.74	0.00	0.00	0.00
5,700.00	0.00	0.00	5,546.93	1,118.15	-97.83	-1,117.74	0.00	0.00	0.00
5,800.00	0.00	0.00	5,646.93	1,118.15	-97.83	-1,117.74	0.00	0.00	0.00
5,900.00	0.00	0.00	5,746.93	1,118.15	-97.83	-1,117.74	0.00	0.00	0.00
6,000.00	0.00	0.00	5,846.93	1,118.15	-97.83	-1,117.74	0.00	0.00	0.00
6,100.00	0.00	0.00	5,946.93	1,118.15	-97.83	-1,117.74	0.00	0.00	0.00
6,200.00	0.00	0.00	6,046.93	1,118.15	-97.83	-1,117.74	0.00	0.00	0.00
6,300.00	0.00	0.00	6,146.93	1,118.15	-97.83	-1,117.74	0.00	0.00	0.00
6,400.00	0.00	0.00	6,246.93	1,118.15	-97.83	-1,117.74	0.00	0.00	0.00
6,500.00	0.00	0.00	6,346.93	1,118.15	-97.83	-1,117.74	0.00	0.00	0.00
6,600.00	0.00	0.00	6,446.93	1,118.15	-97.83	-1,117.74	0.00	0.00	0.00
6,700.00	0.00	0.00	6,546.93	1,118.15	-97.83	-1,117.74	0.00	0.00	0.00
6,800.00	0.00	0.00	6,646.93	1,118.15	-97.83	-1,117.74	0.00	0.00	0.00
6,900.00	0.00	0.00	6,746.93	1,118.15	-97.83	-1,117.74	0.00	0.00	0.00
7,000.00	0.00	0.00	6,846.93	1,118.15	-97.83	-1,117.74	0.00	0.00	0.00
7,100.00	0.00	0.00	6,946.93	1,118.15	-97.83	-1,117.74	0.00	0.00	0.00
7,200.00	0.00	0.00	7,046.93	1,118.15	-97.83	-1,117.74	0.00	0.00	0.00
7,216.45	0.00	0.00	7,063.39	1,118.15	-97.83	-1,117.74	0.00	0.00	0.00
KOP @ 7216.45ft									
7,297.28	7.27	180.23	7,144.00	1,113.02	-97.85	-1,112.62	9.00	9.00	0.00
Sharon Springs									
7,300.00	7.52	180.23	7,146.69	1,112.67	-97.85	-1,112.27	9.00	9.00	0.00
7,337.80	10.92	180.23	7,184.00	1,106.62	-97.87	-1,106.21	9.00	9.00	0.00
Niobrara									
7,400.00	16.52	180.23	7,244.40	1,091.87	-97.93	-1,091.47	9.00	9.00	0.00
7,401.67	16.67	180.23	7,246.00	1,091.39	-97.93	-1,090.99	9.00	9.00	0.00
Nio B									
7,466.44	22.50	180.23	7,307.00	1,069.69	-98.02	-1,069.29	9.00	9.00	0.00
Nio C									
7,500.00	25.52	180.23	7,337.65	1,056.04	-98.07	-1,055.64	9.00	9.00	0.00
7,600.00	34.52	180.23	7,424.15	1,006.06	-98.27	-1,005.66	9.00	9.00	0.00
7,624.42	36.72	180.23	7,444.00	991.84	-98.33	-991.44	9.00	9.00	0.00
Fort Hayes									
7,654.92	39.46	180.23	7,468.00	973.03	-98.40	-972.62	9.00	9.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well POLO 24-6HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5075.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5075.00usft (Drilling Rig)
Site:	2N-66W-24 POLO 10-24HZ PAD	North Reference:	True
Well:	POLO 24-6HZ	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)
Codell									
7,700.00	43.52	180.23	7,501.76	943.17	-98.52	-942.77	9.00	9.00	0.00
7,786.10	51.27	180.23	7,560.00	879.85	-98.77	-879.45	9.00	9.00	0.00
Greenhorn									
7,800.00	52.52	180.23	7,568.58	868.91	-98.82	-868.50	9.00	9.00	0.00
DLS = 9°/100'									
7,900.00	61.52	180.23	7,622.96	785.11	-99.15	-784.71	9.00	9.00	0.00
8,000.00	70.52	180.23	7,663.56	693.84	-99.51	-693.43	9.00	9.00	0.00
8,100.00	79.52	180.23	7,689.38	597.34	-99.90	-596.93	9.00	9.00	0.00
8,200.00	88.52	180.23	7,699.79	497.98	-100.29	-497.58	9.00	9.00	0.00
8,213.93	89.77	180.23	7,700.00	484.05	-100.35	-483.65	9.00	9.00	0.00
End Build @ 8213.93ft - Top of Production									
8,300.00	89.77	180.23	7,700.34	397.99	-100.69	-397.58	0.00	0.00	0.00
8,400.00	89.77	180.23	7,700.74	297.99	-101.09	-297.58	0.00	0.00	0.00
8,500.00	89.77	180.23	7,701.14	197.99	-101.49	-197.58	0.00	0.00	0.00
8,600.00	89.77	180.23	7,701.53	97.99	-101.88	-97.58	0.00	0.00	0.00
8,700.00	89.77	180.23	7,701.93	-2.01	-102.28	2.42	0.00	0.00	0.00
8,800.00	89.77	180.23	7,702.33	-102.01	-102.68	102.42	0.00	0.00	0.00
8,900.00	89.77	180.23	7,702.72	-202.00	-103.08	202.42	0.00	0.00	0.00
9,000.00	89.77	180.23	7,703.12	-302.00	-103.48	302.42	0.00	0.00	0.00
9,100.00	89.77	180.23	7,703.52	-402.00	-103.87	402.42	0.00	0.00	0.00
9,200.00	89.77	180.23	7,703.91	-502.00	-104.27	502.41	0.00	0.00	0.00
9,300.00	89.77	180.23	7,704.31	-602.00	-104.67	602.41	0.00	0.00	0.00
9,400.00	89.77	180.23	7,704.71	-702.00	-105.07	702.41	0.00	0.00	0.00
9,500.00	89.77	180.23	7,705.11	-802.00	-105.47	802.41	0.00	0.00	0.00
9,600.00	89.77	180.23	7,705.50	-901.99	-105.86	902.41	0.00	0.00	0.00
9,700.00	89.77	180.23	7,705.90	-1,001.99	-106.26	1,002.41	0.00	0.00	0.00
9,800.00	89.77	180.23	7,706.30	-1,101.99	-106.66	1,102.41	0.00	0.00	0.00
9,900.00	89.77	180.23	7,706.69	-1,201.99	-107.06	1,202.41	0.00	0.00	0.00
10,000.00	89.77	180.23	7,707.09	-1,301.99	-107.46	1,302.41	0.00	0.00	0.00
10,100.00	89.77	180.23	7,707.49	-1,401.99	-107.85	1,402.41	0.00	0.00	0.00
10,200.00	89.77	180.23	7,707.88	-1,501.98	-108.25	1,502.41	0.00	0.00	0.00
10,300.00	89.77	180.23	7,708.28	-1,601.98	-108.65	1,602.41	0.00	0.00	0.00
10,400.00	89.77	180.23	7,708.68	-1,701.98	-109.05	1,702.41	0.00	0.00	0.00
10,500.00	89.77	180.23	7,709.07	-1,801.98	-109.45	1,802.40	0.00	0.00	0.00
10,600.00	89.77	180.23	7,709.47	-1,901.98	-109.84	1,902.40	0.00	0.00	0.00
10,700.00	89.77	180.23	7,709.87	-2,001.98	-110.24	2,002.40	0.00	0.00	0.00
10,800.00	89.77	180.23	7,710.26	-2,101.97	-110.64	2,102.40	0.00	0.00	0.00
10,900.00	89.77	180.23	7,710.66	-2,201.97	-111.04	2,202.40	0.00	0.00	0.00
11,000.00	89.77	180.23	7,711.06	-2,301.97	-111.44	2,302.40	0.00	0.00	0.00
11,100.00	89.77	180.23	7,711.45	-2,401.97	-111.83	2,402.40	0.00	0.00	0.00
11,200.00	89.77	180.23	7,711.85	-2,501.97	-112.23	2,502.40	0.00	0.00	0.00
11,300.00	89.77	180.23	7,712.25	-2,601.97	-112.63	2,602.40	0.00	0.00	0.00
11,400.00	89.77	180.23	7,712.65	-2,701.97	-113.03	2,702.40	0.00	0.00	0.00
11,500.00	89.77	180.23	7,713.04	-2,801.96	-113.42	2,802.40	0.00	0.00	0.00
11,600.00	89.77	180.23	7,713.44	-2,901.96	-113.82	2,902.40	0.00	0.00	0.00
11,700.00	89.77	180.23	7,713.84	-3,001.96	-114.22	3,002.40	0.00	0.00	0.00
11,800.00	89.77	180.23	7,714.23	-3,101.96	-114.62	3,102.39	0.00	0.00	0.00
11,900.00	89.77	180.23	7,714.63	-3,201.96	-115.02	3,202.39	0.00	0.00	0.00
12,000.00	89.77	180.23	7,715.03	-3,301.96	-115.41	3,302.39	0.00	0.00	0.00
12,100.00	89.77	180.23	7,715.42	-3,401.95	-115.81	3,402.39	0.00	0.00	0.00
12,200.00	89.77	180.23	7,715.82	-3,501.95	-116.21	3,502.39	0.00	0.00	0.00
12,300.00	89.77	180.23	7,716.22	-3,601.95	-116.61	3,602.39	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well POLO 24-6HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5075.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5075.00usft (Drilling Rig)
Site:	2N-66W-24 POLO 10-24HZ PAD	North Reference:	True
Well:	POLO 24-6HZ	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)	
12,400.00	89.77	180.23	7,716.61	-3,701.95	-117.01	3,702.39	0.00	0.00	0.00	
12,500.00	89.77	180.23	7,717.01	-3,801.95	-117.40	3,802.39	0.00	0.00	0.00	
12,600.00	89.77	180.23	7,717.41	-3,901.95	-117.80	3,902.39	0.00	0.00	0.00	
12,700.00	89.77	180.23	7,717.80	-4,001.94	-118.20	4,002.39	0.00	0.00	0.00	
12,800.00	89.77	180.23	7,718.20	-4,101.94	-118.60	4,102.39	0.00	0.00	0.00	
12,900.00	89.77	180.23	7,718.60	-4,201.94	-119.00	4,202.39	0.00	0.00	0.00	
13,000.00	89.77	180.23	7,718.99	-4,301.94	-119.39	4,302.38	0.00	0.00	0.00	
13,100.00	89.77	180.23	7,719.39	-4,401.94	-119.79	4,402.38	0.00	0.00	0.00	
13,200.00	89.77	180.23	7,719.79	-4,501.94	-120.19	4,502.38	0.00	0.00	0.00	
13,300.00	89.77	180.23	7,720.19	-4,601.94	-120.59	4,602.38	0.00	0.00	0.00	
13,400.00	89.77	180.23	7,720.58	-4,701.93	-120.99	4,702.38	0.00	0.00	0.00	
13,500.00	89.77	180.23	7,720.98	-4,801.93	-121.38	4,802.38	0.00	0.00	0.00	
13,600.00	89.77	180.23	7,721.38	-4,901.93	-121.78	4,902.38	0.00	0.00	0.00	
13,700.00	89.77	180.23	7,721.77	-5,001.93	-122.18	5,002.38	0.00	0.00	0.00	
13,800.00	89.77	180.23	7,722.17	-5,101.93	-122.58	5,102.38	0.00	0.00	0.00	
13,900.00	89.77	180.23	7,722.57	-5,201.93	-122.98	5,202.38	0.00	0.00	0.00	
14,000.00	89.77	180.23	7,722.96	-5,301.92	-123.37	5,302.38	0.00	0.00	0.00	
14,100.00	89.77	180.23	7,723.36	-5,401.92	-123.77	5,402.38	0.00	0.00	0.00	
14,200.00	89.77	180.23	7,723.76	-5,501.92	-124.17	5,502.38	0.00	0.00	0.00	
14,300.00	89.77	180.23	7,724.15	-5,601.92	-124.57	5,602.37	0.00	0.00	0.00	
14,400.00	89.77	180.23	7,724.55	-5,701.92	-124.97	5,702.37	0.00	0.00	0.00	
14,500.00	89.77	180.23	7,724.95	-5,801.92	-125.36	5,802.37	0.00	0.00	0.00	
14,600.00	89.77	180.23	7,725.34	-5,901.92	-125.76	5,902.37	0.00	0.00	0.00	
14,700.00	89.77	180.23	7,725.74	-6,001.91	-126.16	6,002.37	0.00	0.00	0.00	
14,800.00	89.77	180.23	7,726.14	-6,101.91	-126.56	6,102.37	0.00	0.00	0.00	
14,900.00	89.77	180.23	7,726.54	-6,201.91	-126.95	6,202.37	0.00	0.00	0.00	
15,000.00	89.77	180.23	7,726.93	-6,301.91	-127.35	6,302.37	0.00	0.00	0.00	
15,100.00	89.77	180.23	7,727.33	-6,401.91	-127.75	6,402.37	0.00	0.00	0.00	
15,200.00	89.77	180.23	7,727.73	-6,501.91	-128.15	6,502.37	0.00	0.00	0.00	
15,300.00	89.77	180.23	7,728.12	-6,601.90	-128.55	6,602.37	0.00	0.00	0.00	
15,400.00	89.77	180.23	7,728.52	-6,701.90	-128.94	6,702.37	0.00	0.00	0.00	
15,500.00	89.77	180.23	7,728.92	-6,801.90	-129.34	6,802.37	0.00	0.00	0.00	
15,600.00	89.77	180.23	7,729.31	-6,901.90	-129.74	6,902.36	0.00	0.00	0.00	
15,700.00	89.77	180.23	7,729.71	-7,001.90	-130.14	7,002.36	0.00	0.00	0.00	
15,773.12	89.77	180.23	7,730.00	-7,075.02	-130.43	7,075.48	0.00	0.00	0.00	
TD Well @ 15773.12ft										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,522.64	1,500.00	9 5/8" Csg	9-5/8	13-1/2	
8,213.93	7,700.00	Top of Production	5-1/2	7-7/8	

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well POLO 24-6HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5075.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5075.00usft (Drilling Rig)
Site:	2N-66W-24 POLO 10-24HZ PAD	North Reference:	True
Well:	POLO 24-6HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,510.09	1,488.00	Fox Hills				
4,350.42	4,205.00	Parkman				
4,845.83	4,693.00	Sussex				
7,297.28	7,144.00	Sharon Springs				
7,337.80	7,184.00	Niobrara				
7,401.67	7,246.00	Nio B				
7,466.44	7,307.00	Nio C				
7,624.42	7,444.00	Fort Hayes				
7,654.92	7,468.00	Codell				
7,786.10	7,560.00	Greenhorn				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
250.00	250.00	0.00	0.00	Begin Nudge @ 250.00ft	
1,383.33	1,366.78	166.27	-14.55	End Nudge @ 1383.33ft	
4,223.33	4,082.68	993.44	-86.92	Begin Drop @ 4223.33ft	
5,073.33	4,920.27	1,118.15	-97.83	End Drop @ 5073.33ft	
7,216.45	7,063.39	1,118.15	-97.83	KOP @ 7216.45ft	
7,800.00	7,568.58	868.91	-98.82	DLS = 9°/100'	
8,213.93	7,700.00	484.05	-100.35	End Build @ 8213.93ft	
15,773.12	7,730.00	-7,075.02	-130.43	TD Well @ 15773.12ft	