

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
2N-65W-13 Swartz 16-13HZ Pad
SWARTZ 1N-25HZ**

Plan B

Plan: Permit Rev-1

Standard Planning Report

08 December, 2016

Project: WELD-NAD83-UTMFT13N
Site: 2N-65W-13 Swartz 16-13HZ Pad
Well: SWARTZ 1N-25HZ
Wellbore: Plan B
Design: Permit Rev-1

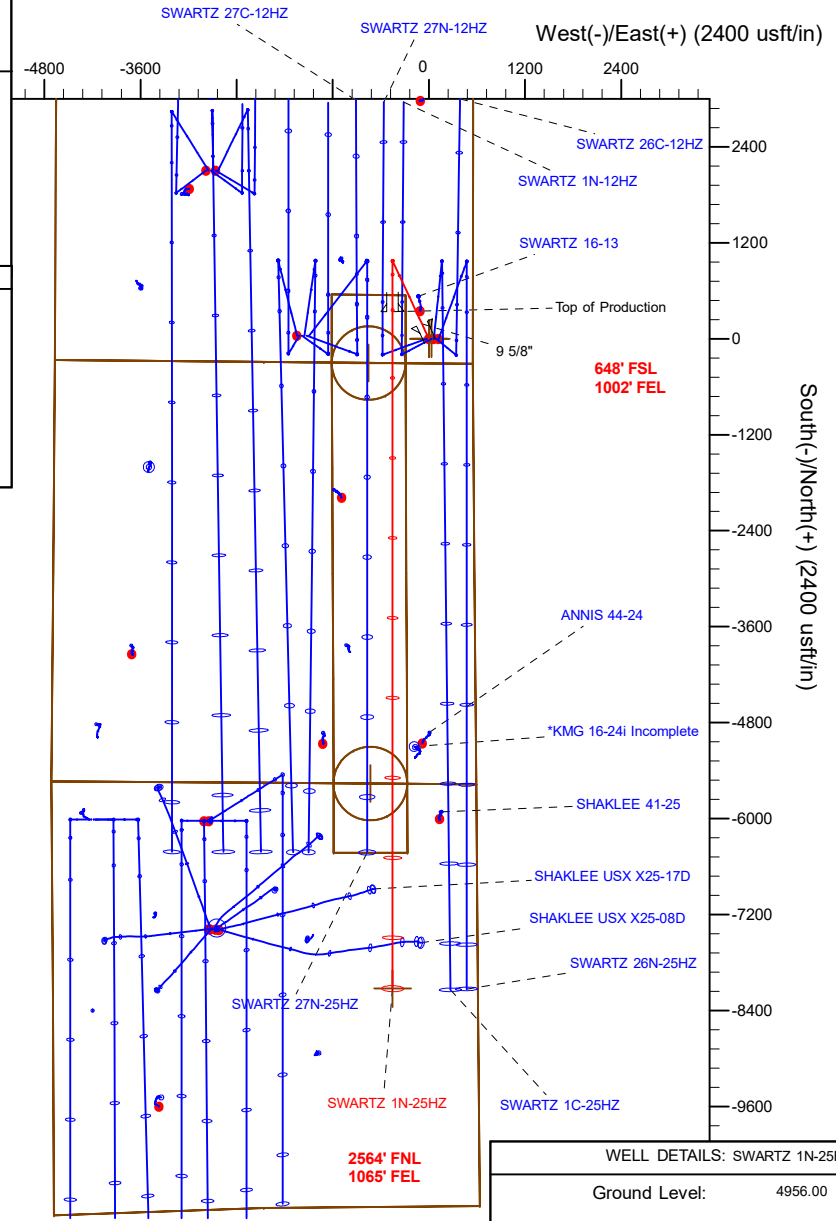
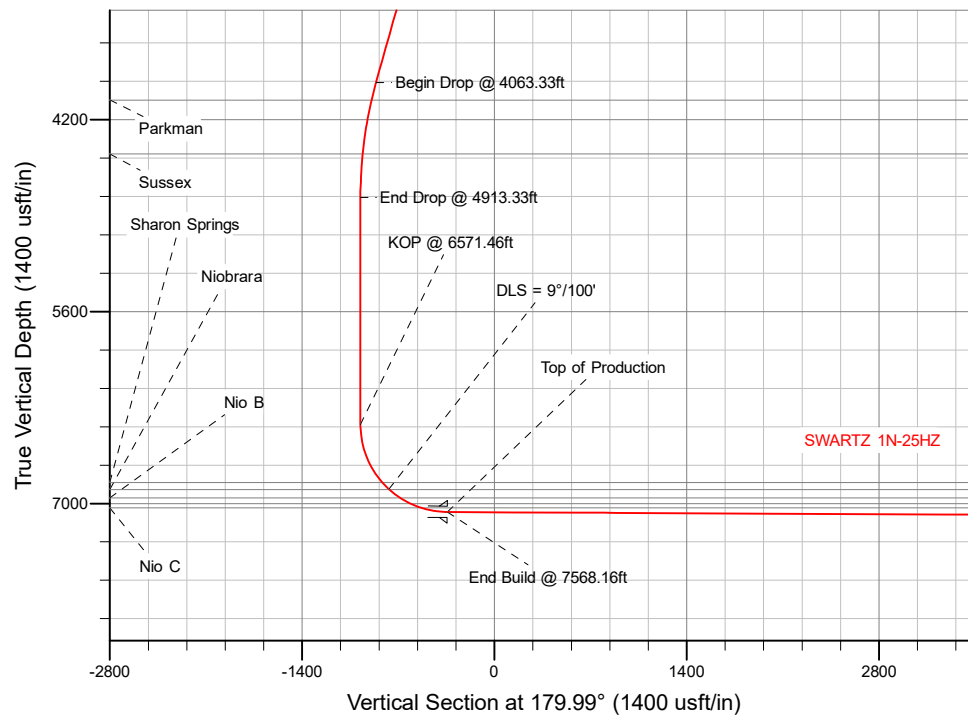
US ROCKIES WATTENBERG PLANNING

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	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	1383.33	17.00	335.00	1366.78	151.27	-70.54	1.50	335.00	-151.28	
4	4063.33	17.00	335.00	3929.67	861.41	-401.68	0.00	0.00	-861.48	
5	4913.33	0.00	0.00	4767.26	974.86	-454.58	2.00	180.00	-974.94	
6	6571.46	0.00	0.00	6425.39	974.86	-454.58	0.00	0.00	-974.94	
7	7568.16	89.70	179.99	7062.00	341.55	-454.47	9.00	179.99	-341.63	
8	16035.49	89.70	179.99	7106.00	-8125.67	-452.92	0.00	0.00	8125.59	SWARTZ 1N-25HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
SWARTZ 1N-25HZ_SHL	0.00	0.00	0.00	40.131977	-104.604903	Point
SWARTZ 1N-25HZ_BHL	7106.00	-8125.67	-452.92	40.109663	-104.606523	Point



WELL DETAILS: SWARTZ 1N-25HZ

Ground Level: 4956.00

RKB = 17' @ 4973.00usft (D Rig)

Plan: Permit Rev-1 (SWARTZ 1N-25HZ/Plan B)

Created By: _____ Date: 12/08/2016
Reviewed: _____ Date: _____

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SWARTZ 1N-25HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4973.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4973.00usft (D Rig)
Site:	2N-65W-13 Swartz 16-13HZ Pad	North Reference:	True
Well:	SWARTZ 1N-25HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
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-65W-13 Swartz 16-13HZ Pad			
Site Position:		Northing:	14,575,037.83 usft	Latitude:	40.131978
From:	Lat/Long	Easting:	1,750,820.88 usft	Longitude:	-104.605010
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.25 °

Well	SWARTZ 1N-25HZ					
Well Position	+N/-S	-0.36 usft	Northing:	14,575,037.60 usft	Latitude:	40.131977
	+E/-W	29.91 usft	Easting:	1,750,850.79 usft	Longitude:	-104.604903
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,956.00 usft

Wellbore	Plan B				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/29/2015	8.20	66.72	52,572.22398117

Design	Permit Rev-1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	179.99

Plan Survey Tool Program	Date	12/8/2016		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	1,500.00	Permit Rev-1 (Plan B)	APC_ISCWSA REV 2 MWD+II Fixed:v2:crustal field declination
2	1,500.00	16,035.49	Permit Rev-1 (Plan B)	APC_ISCWSA REV 2 MWD+II Fixed:v2:crustal field declination

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SWARTZ 1N-25HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4973.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4973.00usft (D Rig)
Site:	2N-65W-13 Swartz 16-13HZ Pad	North Reference:	True
Well:	SWARTZ 1N-25HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
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	335.00	1,366.78	151.27	-70.54	1.50	1.50	0.00	335.00	
4,063.33	17.00	335.00	3,929.67	861.41	-401.68	0.00	0.00	0.00	0.00	
4,913.33	0.00	0.00	4,767.26	974.86	-454.58	2.00	-2.00	0.00	180.00	
6,571.46	0.00	0.00	6,425.39	974.86	-454.58	0.00	0.00	0.00	0.00	
7,568.16	89.70	179.99	7,062.00	341.55	-454.47	9.00	9.00	18.06	179.99	
16,035.49	89.70	179.99	7,106.00	-8,125.67	-452.92	0.00	0.00	0.00	0.00	SWARTZ 1N-25HZ_B

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SWARTZ 1N-25HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4973.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4973.00usft (D Rig)
Site:	2N-65W-13 Swartz 16-13HZ Pad	North Reference:	True
Well:	SWARTZ 1N-25HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
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	335.00	300.00	0.30	-0.14	-0.30	1.50	1.50	0.00
400.00	2.25	335.00	399.96	2.67	-1.24	-2.67	1.50	1.50	0.00
500.00	3.75	335.00	499.82	7.41	-3.46	-7.41	1.50	1.50	0.00
600.00	5.25	335.00	599.51	14.52	-6.77	-14.52	1.50	1.50	0.00
700.00	6.75	335.00	698.96	24.00	-11.19	-24.00	1.50	1.50	0.00
800.00	8.25	335.00	798.10	35.83	-16.71	-35.83	1.50	1.50	0.00
900.00	9.75	335.00	896.87	50.00	-23.32	-50.01	1.50	1.50	0.00
1,000.00	11.25	335.00	995.19	66.52	-31.02	-66.52	1.50	1.50	0.00
1,100.00	12.75	335.00	1,093.00	85.36	-39.80	-85.37	1.50	1.50	0.00
1,200.00	14.25	335.00	1,190.24	106.52	-49.67	-106.53	1.50	1.50	0.00
1,300.00	15.75	335.00	1,286.83	129.97	-60.61	-129.98	1.50	1.50	0.00
1,383.33	17.00	335.00	1,366.77	151.27	-70.54	-151.28	1.50	1.50	0.00
End Nudge @ 1383.33ft									
1,388.79	17.00	335.00	1,372.00	152.71	-71.21	-152.73	0.00	0.00	0.00
Fox Hills Mkr									
1,400.00	17.00	335.00	1,382.72	155.68	-72.60	-155.69	0.00	0.00	0.00
1,500.00	17.00	335.00	1,478.35	182.18	-84.95	-182.19	0.00	0.00	0.00
1,522.64	17.00	335.00	1,500.00	188.18	-87.75	-188.20	0.00	0.00	0.00
9 5/8"									
1,600.00	17.00	335.00	1,573.98	208.68	-97.31	-208.70	0.00	0.00	0.00
1,700.00	17.00	335.00	1,669.61	235.18	-109.66	-235.20	0.00	0.00	0.00
1,800.00	17.00	335.00	1,765.24	261.67	-122.02	-261.70	0.00	0.00	0.00
1,900.00	17.00	335.00	1,860.87	288.17	-134.38	-288.20	0.00	0.00	0.00
2,000.00	17.00	335.00	1,956.50	314.67	-146.73	-314.70	0.00	0.00	0.00
2,100.00	17.00	335.00	2,052.13	341.17	-159.09	-341.20	0.00	0.00	0.00
2,200.00	17.00	335.00	2,147.76	367.67	-171.45	-367.70	0.00	0.00	0.00
2,300.00	17.00	335.00	2,243.39	394.16	-183.80	-394.20	0.00	0.00	0.00
2,400.00	17.00	335.00	2,339.02	420.66	-196.16	-420.70	0.00	0.00	0.00
2,500.00	17.00	335.00	2,434.65	447.16	-208.51	-447.20	0.00	0.00	0.00
2,600.00	17.00	335.00	2,530.28	473.66	-220.87	-473.70	0.00	0.00	0.00
2,700.00	17.00	335.00	2,625.91	500.15	-233.23	-500.20	0.00	0.00	0.00
2,800.00	17.00	335.00	2,721.54	526.65	-245.58	-526.70	0.00	0.00	0.00
2,900.00	17.00	335.00	2,817.17	553.15	-257.94	-553.20	0.00	0.00	0.00
3,000.00	17.00	335.00	2,912.80	579.65	-270.29	-579.70	0.00	0.00	0.00
3,100.00	17.00	335.00	3,008.43	606.15	-282.65	-606.20	0.00	0.00	0.00
3,200.00	17.00	335.00	3,104.06	632.64	-295.01	-632.70	0.00	0.00	0.00
3,300.00	17.00	335.00	3,199.70	659.14	-307.36	-659.20	0.00	0.00	0.00
3,400.00	17.00	335.00	3,295.33	685.64	-319.72	-685.70	0.00	0.00	0.00
3,500.00	17.00	335.00	3,390.96	712.14	-332.08	-712.20	0.00	0.00	0.00
3,600.00	17.00	335.00	3,486.59	738.64	-344.43	-738.70	0.00	0.00	0.00
3,700.00	17.00	335.00	3,582.22	765.13	-356.79	-765.20	0.00	0.00	0.00
3,800.00	17.00	335.00	3,677.85	791.63	-369.14	-791.70	0.00	0.00	0.00
3,900.00	17.00	335.00	3,773.48	818.13	-381.50	-818.20	0.00	0.00	0.00
4,000.00	17.00	335.00	3,869.11	844.63	-393.86	-844.70	0.00	0.00	0.00
4,063.33	17.00	335.00	3,929.67	861.41	-401.68	-861.48	0.00	0.00	0.00
Begin Drop @ 4063.33ft									
4,100.00	16.27	335.00	3,964.81	870.92	-406.12	-870.99	2.00	-2.00	0.00
4,196.62	14.33	335.00	4,058.00	894.03	-416.89	-894.10	2.00	-2.00	0.00

Corporate
Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SWARTZ 1N-25HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4973.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4973.00usft (D Rig)
Site:	2N-65W-13 Swartz 16-13HZ Pad	North Reference:	True
Well:	SWARTZ 1N-25HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
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									
4,200.00	14.27	335.00	4,061.27	894.78	-417.24	-894.86	2.00	-2.00	0.00
4,300.00	12.27	335.00	4,158.60	915.58	-426.94	-915.66	2.00	-2.00	0.00
4,400.00	10.27	335.00	4,256.67	933.29	-435.20	-933.36	2.00	-2.00	0.00
4,500.00	8.27	335.00	4,355.36	947.88	-442.00	-947.96	2.00	-2.00	0.00
4,594.42	6.38	335.00	4,449.00	958.79	-447.09	-958.87	2.00	-2.00	0.00
Sussex									
4,600.00	6.27	335.00	4,454.55	959.34	-447.35	-959.42	2.00	-2.00	0.00
4,700.00	4.27	335.00	4,554.12	967.66	-451.23	-967.74	2.00	-2.00	0.00
4,800.00	2.27	335.00	4,653.95	972.83	-453.64	-972.91	2.00	-2.00	0.00
4,900.00	0.27	335.00	4,753.92	974.83	-454.57	-974.91	2.00	-2.00	0.00
4,913.33	0.00	335.00	4,767.25	974.86	-454.58	-974.94	2.00	-2.00	0.00
End Drop @ 4913.33ft									
5,000.00	0.00	0.00	4,853.92	974.86	-454.58	-974.94	0.00	0.00	0.00
5,100.00	0.00	0.00	4,953.92	974.86	-454.58	-974.94	0.00	0.00	0.00
5,200.00	0.00	0.00	5,053.92	974.86	-454.58	-974.94	0.00	0.00	0.00
5,300.00	0.00	0.00	5,153.92	974.86	-454.58	-974.94	0.00	0.00	0.00
5,400.00	0.00	0.00	5,253.92	974.86	-454.58	-974.94	0.00	0.00	0.00
5,500.00	0.00	0.00	5,353.92	974.86	-454.58	-974.94	0.00	0.00	0.00
5,600.00	0.00	0.00	5,453.92	974.86	-454.58	-974.94	0.00	0.00	0.00
5,700.00	0.00	0.00	5,553.92	974.86	-454.58	-974.94	0.00	0.00	0.00
5,800.00	0.00	0.00	5,653.92	974.86	-454.58	-974.94	0.00	0.00	0.00
5,900.00	0.00	0.00	5,753.92	974.86	-454.58	-974.94	0.00	0.00	0.00
6,000.00	0.00	0.00	5,853.92	974.86	-454.58	-974.94	0.00	0.00	0.00
6,100.00	0.00	0.00	5,953.92	974.86	-454.58	-974.94	0.00	0.00	0.00
6,200.00	0.00	0.00	6,053.92	974.86	-454.58	-974.94	0.00	0.00	0.00
6,300.00	0.00	0.00	6,153.92	974.86	-454.58	-974.94	0.00	0.00	0.00
6,400.00	0.00	0.00	6,253.92	974.86	-454.58	-974.94	0.00	0.00	0.00
6,500.00	0.00	0.00	6,353.92	974.86	-454.58	-974.94	0.00	0.00	0.00
6,571.46	0.00	0.00	6,425.38	974.86	-454.58	-974.94	0.00	0.00	0.00
KOP @ 6571.46ft									
6,600.00	2.57	179.99	6,453.91	974.22	-454.58	-974.30	9.00	9.00	0.00
6,700.00	11.57	179.99	6,553.05	961.93	-454.58	-962.01	9.00	9.00	0.00
6,800.00	20.57	179.99	6,649.05	934.28	-454.58	-934.36	9.00	9.00	0.00
6,900.00	29.57	179.99	6,739.53	891.95	-454.57	-892.03	9.00	9.00	0.00
7,000.00	38.57	179.99	6,822.29	835.99	-454.56	-836.07	9.00	9.00	0.00
7,032.27	41.47	179.99	6,847.00	815.24	-454.55	-815.32	9.00	9.00	0.00
Sharon Springs									
7,100.00	47.57	179.99	6,895.27	767.77	-454.55	-767.85	9.00	9.00	0.00
DLS = 9°/100'									
7,105.56	48.07	179.99	6,899.00	763.65	-454.55	-763.73	9.00	9.00	0.00
Niobrara									
7,200.00	56.57	179.99	6,956.67	688.98	-454.53	-689.06	9.00	9.00	0.00
7,206.08	57.12	179.99	6,960.00	683.89	-454.53	-683.97	9.00	9.00	0.00
Nio B									
7,300.00	65.57	179.99	7,005.00	601.55	-454.52	-601.63	9.00	9.00	0.00
7,375.22	72.34	179.99	7,032.00	531.39	-454.50	-531.47	9.00	9.00	0.00
Nio C									
7,400.00	74.57	179.99	7,039.06	507.64	-454.50	-507.72	9.00	9.00	0.00
7,500.00	83.57	179.99	7,058.00	409.55	-454.48	-409.63	9.00	9.00	0.00
7,568.16	89.70	179.99	7,062.00	341.54	-454.47	-341.62	9.00	9.00	0.00
End Build @ 7568.16ft - Top of Production									

Corporate
Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SWARTZ 1N-25HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4973.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4973.00usft (D Rig)
Site:	2N-65W-13 Swartz 16-13HZ Pad	North Reference:	True
Well:	SWARTZ 1N-25HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
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)
7,600.00	89.70	179.99	7,062.16	309.70	-454.46	-309.78	0.00	0.00	0.00
7,700.00	89.70	179.99	7,062.68	209.70	-454.44	-209.78	0.00	0.00	0.00
7,800.00	89.70	179.99	7,063.20	109.71	-454.43	-109.78	0.00	0.00	0.00
7,900.00	89.70	179.99	7,063.72	9.71	-454.41	-9.79	0.00	0.00	0.00
8,000.00	89.70	179.99	7,064.24	-90.29	-454.39	90.21	0.00	0.00	0.00
8,100.00	89.70	179.99	7,064.76	-190.29	-454.37	190.21	0.00	0.00	0.00
8,200.00	89.70	179.99	7,065.28	-290.29	-454.35	290.21	0.00	0.00	0.00
8,300.00	89.70	179.99	7,065.80	-390.29	-454.33	390.21	0.00	0.00	0.00
8,400.00	89.70	179.99	7,066.32	-490.29	-454.32	490.21	0.00	0.00	0.00
8,500.00	89.70	179.99	7,066.84	-590.29	-454.30	590.21	0.00	0.00	0.00
8,600.00	89.70	179.99	7,067.36	-690.28	-454.28	690.20	0.00	0.00	0.00
8,700.00	89.70	179.99	7,067.88	-790.28	-454.26	790.20	0.00	0.00	0.00
8,800.00	89.70	179.99	7,068.40	-890.28	-454.24	890.20	0.00	0.00	0.00
8,900.00	89.70	179.99	7,068.92	-990.28	-454.22	990.20	0.00	0.00	0.00
9,000.00	89.70	179.99	7,069.44	-1,090.28	-454.21	1,090.20	0.00	0.00	0.00
9,100.00	89.70	179.99	7,069.96	-1,190.28	-454.19	1,190.20	0.00	0.00	0.00
9,200.00	89.70	179.99	7,070.48	-1,290.28	-454.17	1,290.20	0.00	0.00	0.00
9,300.00	89.70	179.99	7,071.00	-1,390.27	-454.15	1,390.20	0.00	0.00	0.00
9,400.00	89.70	179.99	7,071.52	-1,490.27	-454.13	1,490.19	0.00	0.00	0.00
9,500.00	89.70	179.99	7,072.04	-1,590.27	-454.11	1,590.19	0.00	0.00	0.00
9,600.00	89.70	179.99	7,072.56	-1,690.27	-454.10	1,690.19	0.00	0.00	0.00
9,700.00	89.70	179.99	7,073.08	-1,790.27	-454.08	1,790.19	0.00	0.00	0.00
9,800.00	89.70	179.99	7,073.60	-1,890.27	-454.06	1,890.19	0.00	0.00	0.00
9,900.00	89.70	179.99	7,074.12	-1,990.27	-454.04	1,990.19	0.00	0.00	0.00
10,000.00	89.70	179.99	7,074.64	-2,090.27	-454.02	2,090.19	0.00	0.00	0.00
10,100.00	89.70	179.99	7,075.16	-2,190.26	-454.00	2,190.18	0.00	0.00	0.00
10,200.00	89.70	179.99	7,075.68	-2,290.26	-453.99	2,290.18	0.00	0.00	0.00
10,300.00	89.70	179.99	7,076.20	-2,390.26	-453.97	2,390.18	0.00	0.00	0.00
10,400.00	89.70	179.99	7,076.71	-2,490.26	-453.95	2,490.18	0.00	0.00	0.00
10,500.00	89.70	179.99	7,077.23	-2,590.26	-453.93	2,590.18	0.00	0.00	0.00
10,600.00	89.70	179.99	7,077.75	-2,690.26	-453.91	2,690.18	0.00	0.00	0.00
10,700.00	89.70	179.99	7,078.27	-2,790.26	-453.89	2,790.18	0.00	0.00	0.00
10,800.00	89.70	179.99	7,078.79	-2,890.25	-453.88	2,890.18	0.00	0.00	0.00
10,900.00	89.70	179.99	7,079.31	-2,990.25	-453.86	2,990.17	0.00	0.00	0.00
11,000.00	89.70	179.99	7,079.83	-3,090.25	-453.84	3,090.17	0.00	0.00	0.00
11,100.00	89.70	179.99	7,080.35	-3,190.25	-453.82	3,190.17	0.00	0.00	0.00
11,200.00	89.70	179.99	7,080.87	-3,290.25	-453.80	3,290.17	0.00	0.00	0.00
11,300.00	89.70	179.99	7,081.39	-3,390.25	-453.78	3,390.17	0.00	0.00	0.00
11,400.00	89.70	179.99	7,081.91	-3,490.25	-453.77	3,490.17	0.00	0.00	0.00
11,500.00	89.70	179.99	7,082.43	-3,590.24	-453.75	3,590.17	0.00	0.00	0.00
11,600.00	89.70	179.99	7,082.95	-3,690.24	-453.73	3,690.16	0.00	0.00	0.00
11,700.00	89.70	179.99	7,083.47	-3,790.24	-453.71	3,790.16	0.00	0.00	0.00
11,800.00	89.70	179.99	7,083.99	-3,890.24	-453.69	3,890.16	0.00	0.00	0.00
11,900.00	89.70	179.99	7,084.51	-3,990.24	-453.67	3,990.16	0.00	0.00	0.00
12,000.00	89.70	179.99	7,085.03	-4,090.24	-453.66	4,090.16	0.00	0.00	0.00
12,100.00	89.70	179.99	7,085.55	-4,190.24	-453.64	4,190.16	0.00	0.00	0.00
12,200.00	89.70	179.99	7,086.07	-4,290.24	-453.62	4,290.16	0.00	0.00	0.00
12,300.00	89.70	179.99	7,086.59	-4,390.23	-453.60	4,390.15	0.00	0.00	0.00
12,400.00	89.70	179.99	7,087.11	-4,490.23	-453.58	4,490.15	0.00	0.00	0.00
12,500.00	89.70	179.99	7,087.63	-4,590.23	-453.56	4,590.15	0.00	0.00	0.00
12,600.00	89.70	179.99	7,088.15	-4,690.23	-453.55	4,690.15	0.00	0.00	0.00
12,700.00	89.70	179.99	7,088.67	-4,790.23	-453.53	4,790.15	0.00	0.00	0.00
12,800.00	89.70	179.99	7,089.19	-4,890.23	-453.51	4,890.15	0.00	0.00	0.00
12,900.00	89.70	179.99	7,089.71	-4,990.23	-453.49	4,990.15	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SWARTZ 1N-25HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4973.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4973.00usft (D Rig)
Site:	2N-65W-13 Swartz 16-13HZ Pad	North Reference:	True
Well:	SWARTZ 1N-25HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
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)
13,000.00	89.70	179.99	7,090.23	-5,090.22	-453.47	5,090.15	0.00	0.00	0.00
13,100.00	89.70	179.99	7,090.75	-5,190.22	-453.45	5,190.14	0.00	0.00	0.00
13,200.00	89.70	179.99	7,091.27	-5,290.22	-453.44	5,290.14	0.00	0.00	0.00
13,300.00	89.70	179.99	7,091.78	-5,390.22	-453.42	5,390.14	0.00	0.00	0.00
13,400.00	89.70	179.99	7,092.30	-5,490.22	-453.40	5,490.14	0.00	0.00	0.00
13,500.00	89.70	179.99	7,092.82	-5,590.22	-453.38	5,590.14	0.00	0.00	0.00
13,600.00	89.70	179.99	7,093.34	-5,690.22	-453.36	5,690.14	0.00	0.00	0.00
13,700.00	89.70	179.99	7,093.86	-5,790.22	-453.34	5,790.14	0.00	0.00	0.00
13,800.00	89.70	179.99	7,094.38	-5,890.21	-453.33	5,890.13	0.00	0.00	0.00
13,900.00	89.70	179.99	7,094.90	-5,990.21	-453.31	5,990.13	0.00	0.00	0.00
14,000.00	89.70	179.99	7,095.42	-6,090.21	-453.29	6,090.13	0.00	0.00	0.00
14,100.00	89.70	179.99	7,095.94	-6,190.21	-453.27	6,190.13	0.00	0.00	0.00
14,200.00	89.70	179.99	7,096.46	-6,290.21	-453.25	6,290.13	0.00	0.00	0.00
14,300.00	89.70	179.99	7,096.98	-6,390.21	-453.23	6,390.13	0.00	0.00	0.00
14,400.00	89.70	179.99	7,097.50	-6,490.21	-453.22	6,490.13	0.00	0.00	0.00
14,500.00	89.70	179.99	7,098.02	-6,590.20	-453.20	6,590.13	0.00	0.00	0.00
14,600.00	89.70	179.99	7,098.54	-6,690.20	-453.18	6,690.12	0.00	0.00	0.00
14,700.00	89.70	179.99	7,099.06	-6,790.20	-453.16	6,790.12	0.00	0.00	0.00
14,800.00	89.70	179.99	7,099.58	-6,890.20	-453.14	6,890.12	0.00	0.00	0.00
14,900.00	89.70	179.99	7,100.10	-6,990.20	-453.12	6,990.12	0.00	0.00	0.00
15,000.00	89.70	179.99	7,100.62	-7,090.20	-453.11	7,090.12	0.00	0.00	0.00
15,100.00	89.70	179.99	7,101.14	-7,190.20	-453.09	7,190.12	0.00	0.00	0.00
15,200.00	89.70	179.99	7,101.66	-7,290.19	-453.07	7,290.12	0.00	0.00	0.00
15,300.00	89.70	179.99	7,102.18	-7,390.19	-453.05	7,390.11	0.00	0.00	0.00
15,400.00	89.70	179.99	7,102.70	-7,490.19	-453.03	7,490.11	0.00	0.00	0.00
15,500.00	89.70	179.99	7,103.22	-7,590.19	-453.01	7,590.11	0.00	0.00	0.00
15,600.00	89.70	179.99	7,103.74	-7,690.19	-453.00	7,690.11	0.00	0.00	0.00
15,700.00	89.70	179.99	7,104.26	-7,790.19	-452.98	7,790.11	0.00	0.00	0.00
15,800.00	89.70	179.99	7,104.78	-7,890.19	-452.96	7,890.11	0.00	0.00	0.00
15,900.00	89.70	179.99	7,105.30	-7,990.19	-452.94	7,990.11	0.00	0.00	0.00
16,000.00	89.70	179.99	7,105.82	-8,090.18	-452.92	8,090.10	0.00	0.00	0.00
16,035.49	89.70	179.99	7,106.00	-8,125.67	-452.92	8,125.59	0.00	0.00	0.00
TD Well @ 16035.49ft									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,522.64	1,500.00	9 5/8"	9-5/8	13-1/2	
7,568.16	7,062.00	Top of Production	5-1/2	7-7/8	

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SWARTZ 1N-25HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4973.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4973.00usft (D Rig)
Site:	2N-65W-13 Swartz 16-13HZ Pad	North Reference:	True
Well:	SWARTZ 1N-25HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
Design:	Permit Rev-1		

Formations						
	Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
	1,388.79	1,372.00	Fox Hills Mkr			
	4,196.62	4,058.00	Parkman			
	4,594.42	4,449.00	Sussex			
	7,032.27	6,847.00	Sharon Springs			
	7,105.56	6,899.00	Niobrara			
	7,206.08	6,960.00	Nio B			
	7,375.22	7,032.00	Nio C			