

# **EXTRACTION OIL & GAS**

**SEC 19 T7N R65W**

**WAAG SOUTH**

**WAAG 20 - Slot WAAG 20**

**Wellbore #1**

**Plan: Plan #1 03Aug14 mab**

## **Standard Planning Report - Geographic**

**11 August, 2014**

# New Tech

## Planning Report - Geographic

<b>Database:</b>	EDM 2003.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well WAAG 20 - Slot WAAG 20
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	WELL @ 4884.0ft (Original Well Elev)
<b>Project:</b>	SEC 19 T7N R65W	<b>MD Reference:</b>	WELL @ 4884.0ft (Original Well Elev)
<b>Site:</b>	WAAG SOUTH	<b>North Reference:</b>	True
<b>Well:</b>	WAAG 20	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 03Aug14 mab		

<b>Project</b>	SEC 19 T7N R65W, Weld County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		WAAG SOUTH			
Site Position:		Northing:	1,445,760.46 ft	Latitude:	40° 33' 15.516 N
From:	Lat/Long	Easting:	3,220,253.02 ft	Longitude:	104° 42' 26.496 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.51 °

Well	WAAG 20 - Slot WAAG 20					
Well Position	+N/-S	0.0 ft	Northing:	1,445,800.88 ft	Latitude:	40° 33' 15.912 N
	+E/-W	0.0 ft	Easting:	3,220,291.56 ft	Longitude:	104° 42' 25.992 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,868.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b>	<b>Dip Angle</b>	<b>Field Strength</b>
			(°)	(°)	(nT)
	IGRF2010	8/3/2014	8.42	67.08	52,887

<b>Design</b>	Plan #1 03Aug14 mab			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	280.57

<b>Plan Sections</b>										
<b>Measured</b>	<b>Inclination</b>	<b>Azimuth</b>	<b>Vertical</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Dogleg</b>	<b>Build</b>	<b>Turn</b>	<b>TFO</b>	<b>Target</b>
<b>Depth</b>	<b>(°)</b>	<b>(°)</b>	<b>Depth</b>	<b>(ft)</b>	<b>(ft)</b>	<b>Rate</b>	<b>Rate</b>	<b>Rate</b>	<b>(°)</b>	
<b>(ft)</b>			<b>(ft)</b>			<b>(°/100ft)</b>	<b>(°/100ft)</b>	<b>(°/100ft)</b>		
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,394.7	9.89	25.37	1,392.2	38.5	18.3	2.00	2.00	0.00	25.37	
6,115.4	9.89	25.37	6,042.8	771.4	365.7	0.00	0.00	0.00	0.00	
6,610.1	0.00	0.00	6,535.0	809.9	384.0	2.00	-2.00	0.00	180.00	
6,640.1	0.00	0.00	6,565.0	809.9	384.0	0.00	0.00	0.00	0.00	
7,540.1	90.00	270.62	7,138.0	816.1	-188.9	10.00	10.00	0.00	270.62	
11,980.7	90.00	270.61	7,138.0	863.9	-4,629.3	0.00	0.00	0.00	0.00	TD / PBHL WAAG SC

# New Tech

## Planning Report - Geographic

<b>Database:</b>	EDM 2003.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well WAAG 20 - Slot WAAG 20
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	WELL @ 4884.0ft (Original Well Elev)
<b>Project:</b>	SEC 19 T7N R65W	<b>MD Reference:</b>	WELL @ 4884.0ft (Original Well Elev)
<b>Site:</b>	WAAG SOUTH	<b>North Reference:</b>	True
<b>Well:</b>	WAAG 20	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 03Aug14 mab		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	1,445,800.88	3,220,291.56	40° 33' 15.912 N	104° 42' 25.992 W
100.0	0.00	0.00	100.0	0.0	0.0	1,445,800.88	3,220,291.56	40° 33' 15.912 N	104° 42' 25.992 W
200.0	0.00	0.00	200.0	0.0	0.0	1,445,800.88	3,220,291.56	40° 33' 15.912 N	104° 42' 25.992 W
300.0	0.00	0.00	300.0	0.0	0.0	1,445,800.88	3,220,291.56	40° 33' 15.912 N	104° 42' 25.992 W
400.0	0.00	0.00	400.0	0.0	0.0	1,445,800.88	3,220,291.56	40° 33' 15.912 N	104° 42' 25.992 W
500.0	0.00	0.00	500.0	0.0	0.0	1,445,800.88	3,220,291.56	40° 33' 15.912 N	104° 42' 25.992 W
600.0	0.00	0.00	600.0	0.0	0.0	1,445,800.88	3,220,291.56	40° 33' 15.912 N	104° 42' 25.992 W
700.0	0.00	0.00	700.0	0.0	0.0	1,445,800.88	3,220,291.56	40° 33' 15.912 N	104° 42' 25.992 W
800.0	0.00	0.00	800.0	0.0	0.0	1,445,800.88	3,220,291.56	40° 33' 15.912 N	104° 42' 25.992 W
850.0	0.00	0.00	850.0	0.0	0.0	1,445,800.88	3,220,291.56	40° 33' 15.912 N	104° 42' 25.992 W
<b>9 5/8"</b>									
900.0	0.00	0.00	900.0	0.0	0.0	1,445,800.88	3,220,291.56	40° 33' 15.912 N	104° 42' 25.992 W
<b>Start Build 2.00</b>									
1,000.0	2.00	25.37	1,000.0	1.6	0.7	1,445,802.46	3,220,292.30	40° 33' 15.928 N	104° 42' 25.982 W
1,100.0	4.00	25.37	1,099.8	6.3	3.0	1,445,807.21	3,220,294.50	40° 33' 15.974 N	104° 42' 25.953 W
1,200.0	6.00	25.37	1,199.5	14.2	6.7	1,445,815.12	3,220,298.16	40° 33' 16.052 N	104° 42' 25.905 W
1,300.0	8.00	25.37	1,298.7	25.2	11.9	1,445,826.18	3,220,303.28	40° 33' 16.161 N	104° 42' 25.837 W
1,394.7	9.89	25.37	1,392.2	38.5	18.3	1,445,839.54	3,220,309.47	40° 33' 16.292 N	104° 42' 25.756 W
<b>Hold 9.89° Inc, 25.37° Az</b>									
1,400.0	9.89	25.37	1,397.5	39.3	18.6	1,445,840.37	3,220,309.85	40° 33' 16.301 N	104° 42' 25.750 W
1,500.0	9.89	25.37	1,496.0	54.8	26.0	1,445,855.96	3,220,317.08	40° 33' 16.454 N	104° 42' 25.655 W
1,600.0	9.89	25.37	1,594.5	70.4	33.4	1,445,871.55	3,220,324.30	40° 33' 16.607 N	104° 42' 25.560 W
1,700.0	9.89	25.37	1,693.0	85.9	40.7	1,445,887.14	3,220,331.52	40° 33' 16.761 N	104° 42' 25.464 W
1,800.0	9.89	25.37	1,791.5	101.4	48.1	1,445,902.73	3,220,338.74	40° 33' 16.914 N	104° 42' 25.369 W
1,900.0	9.89	25.37	1,890.0	116.9	55.4	1,445,918.32	3,220,345.96	40° 33' 17.068 N	104° 42' 25.274 W
2,000.0	9.89	25.37	1,988.5	132.5	62.8	1,445,933.91	3,220,353.19	40° 33' 17.221 N	104° 42' 25.178 W
2,100.0	9.89	25.37	2,087.1	148.0	70.2	1,445,949.50	3,220,360.41	40° 33' 17.374 N	104° 42' 25.083 W
2,200.0	9.89	25.37	2,185.6	163.5	77.5	1,445,965.09	3,220,367.63	40° 33' 17.528 N	104° 42' 24.988 W
2,300.0	9.89	25.37	2,284.1	179.0	84.9	1,445,980.68	3,220,374.85	40° 33' 17.681 N	104° 42' 24.892 W
2,400.0	9.89	25.37	2,382.6	194.6	92.3	1,445,996.27	3,220,382.07	40° 33' 17.835 N	104° 42' 24.797 W
2,500.0	9.89	25.37	2,481.1	210.1	99.6	1,446,011.86	3,220,389.30	40° 33' 17.988 N	104° 42' 24.701 W
2,600.0	9.89	25.37	2,579.6	225.6	107.0	1,446,027.45	3,220,396.52	40° 33' 18.142 N	104° 42' 24.606 W
2,700.0	9.89	25.37	2,678.1	241.1	114.3	1,446,043.04	3,220,403.74	40° 33' 18.295 N	104° 42' 24.511 W
2,800.0	9.89	25.37	2,776.6	256.7	121.7	1,446,058.63	3,220,410.96	40° 33' 18.448 N	104° 42' 24.415 W
2,900.0	9.89	25.37	2,875.2	272.2	129.1	1,446,074.22	3,220,418.18	40° 33' 18.602 N	104° 42' 24.320 W
3,000.0	9.89	25.37	2,973.7	287.7	136.4	1,446,089.81	3,220,425.40	40° 33' 18.755 N	104° 42' 24.225 W
3,100.0	9.89	25.37	3,072.2	303.3	143.8	1,446,105.40	3,220,432.63	40° 33' 18.909 N	104° 42' 24.129 W
3,200.0	9.89	25.37	3,170.7	318.8	151.1	1,446,120.99	3,220,439.85	40° 33' 19.062 N	104° 42' 24.034 W
3,300.0	9.89	25.37	3,269.2	334.3	158.5	1,446,136.58	3,220,447.07	40° 33' 19.215 N	104° 42' 23.938 W
3,400.0	9.89	25.37	3,367.7	349.8	165.9	1,446,152.17	3,220,454.29	40° 33' 19.369 N	104° 42' 23.843 W
3,500.0	9.89	25.37	3,466.2	365.4	173.2	1,446,167.76	3,220,461.51	40° 33' 19.522 N	104° 42' 23.748 W
3,600.0	9.89	25.37	3,564.7	380.9	180.6	1,446,183.36	3,220,468.74	40° 33' 19.676 N	104° 42' 23.652 W
3,645.9	9.89	25.37	3,610.0	388.0	184.0	1,446,190.52	3,220,472.05	40° 33' 19.746 N	104° 42' 23.609 W
<b>PARKMAN</b>									
3,700.0	9.89	25.37	3,663.3	396.4	187.9	1,446,198.95	3,220,475.96	40° 33' 19.829 N	104° 42' 23.557 W
3,800.0	9.89	25.37	3,761.8	411.9	195.3	1,446,214.54	3,220,483.18	40° 33' 19.982 N	104° 42' 23.462 W
3,900.0	9.89	25.37	3,860.3	427.5	202.7	1,446,230.13	3,220,490.40	40° 33' 20.136 N	104° 42' 23.366 W
4,000.0	9.89	25.37	3,958.8	443.0	210.0	1,446,245.72	3,220,497.62	40° 33' 20.289 N	104° 42' 23.271 W
4,100.0	9.89	25.37	4,057.3	458.5	217.4	1,446,261.31	3,220,504.85	40° 33' 20.443 N	104° 42' 23.176 W
4,200.0	9.89	25.37	4,155.8	474.0	224.8	1,446,276.90	3,220,512.07	40° 33' 20.596 N	104° 42' 23.080 W
4,300.0	9.89	25.37	4,254.3	489.6	232.1	1,446,292.49	3,220,519.29	40° 33' 20.750 N	104° 42' 22.985 W
4,383.9	9.89	25.37	4,337.0	502.6	238.3	1,446,305.57	3,220,525.35	40° 33' 20.878 N	104° 42' 22.905 W
<b>SUSSEX</b>									

# New Tech

## Planning Report - Geographic

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<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	WELL @ 4884.0ft (Original Well Elev)
<b>Project:</b>	SEC 19 T7N R65W	<b>MD Reference:</b>	WELL @ 4884.0ft (Original Well Elev)
<b>Site:</b>	WAAG SOUTH	<b>North Reference:</b>	True
<b>Well:</b>	WAAG 20	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 03Aug14 mab		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
4,400.0	9.89	25.37	4,352.9	505.1	239.5	1,446,308.08	3,220,526.51	40° 33' 20.903 N	104° 42' 22.889 W
4,500.0	9.89	25.37	4,451.4	520.6	246.8	1,446,323.67	3,220,533.73	40° 33' 21.056 N	104° 42' 22.794 W
4,600.0	9.89	25.37	4,549.9	536.1	254.2	1,446,339.26	3,220,540.96	40° 33' 21.210 N	104° 42' 22.699 W
4,700.0	9.89	25.37	4,648.4	551.7	261.6	1,446,354.85	3,220,548.18	40° 33' 21.363 N	104° 42' 22.603 W
4,782.8	9.89	25.37	4,730.0	564.5	267.7	1,446,367.77	3,220,554.16	40° 33' 21.490 N	104° 42' 22.524 W
<b>SHANNON</b>									
4,800.0	9.89	25.37	4,746.9	567.2	268.9	1,446,370.44	3,220,555.40	40° 33' 21.517 N	104° 42' 22.508 W
4,900.0	9.89	25.37	4,845.4	582.7	276.3	1,446,386.03	3,220,562.62	40° 33' 21.670 N	104° 42' 22.413 W
5,000.0	9.89	25.37	4,943.9	598.2	283.6	1,446,401.62	3,220,569.84	40° 33' 21.823 N	104° 42' 22.317 W
5,100.0	9.89	25.37	5,042.4	613.8	291.0	1,446,417.21	3,220,577.07	40° 33' 21.977 N	104° 42' 22.222 W
5,200.0	9.89	25.37	5,141.0	629.3	298.4	1,446,432.80	3,220,584.29	40° 33' 22.130 N	104° 42' 22.126 W
5,300.0	9.89	25.37	5,239.5	644.8	305.7	1,446,448.39	3,220,591.51	40° 33' 22.284 N	104° 42' 22.031 W
5,400.0	9.89	25.37	5,338.0	660.3	313.1	1,446,463.98	3,220,598.73	40° 33' 22.437 N	104° 42' 21.936 W
5,500.0	9.89	25.37	5,436.5	675.9	320.4	1,446,479.57	3,220,605.95	40° 33' 22.591 N	104° 42' 21.840 W
5,600.0	9.89	25.37	5,535.0	691.4	327.8	1,446,495.16	3,220,613.17	40° 33' 22.744 N	104° 42' 21.745 W
5,700.0	9.89	25.37	5,633.5	706.9	335.2	1,446,510.75	3,220,620.40	40° 33' 22.897 N	104° 42' 21.650 W
5,800.0	9.89	25.37	5,732.0	722.4	342.5	1,446,526.34	3,220,627.62	40° 33' 23.051 N	104° 42' 21.554 W
5,900.0	9.89	25.37	5,830.5	738.0	349.9	1,446,541.93	3,220,634.84	40° 33' 23.204 N	104° 42' 21.459 W
6,000.0	9.89	25.37	5,929.1	753.5	357.3	1,446,557.53	3,220,642.06	40° 33' 23.358 N	104° 42' 21.364 W
6,100.0	9.89	25.37	6,027.6	769.0	364.6	1,446,573.12	3,220,649.28	40° 33' 23.511 N	104° 42' 21.268 W
6,115.4	9.89	25.37	6,042.8	771.4	365.7	1,446,575.52	3,220,650.40	40° 33' 23.535 N	104° 42' 21.253 W
<b>Start Drop -2.00</b>									
6,200.0	8.20	25.37	6,126.3	783.4	371.4	1,446,587.59	3,220,655.99	40° 33' 23.653 N	104° 42' 21.180 W
6,300.0	6.20	25.37	6,225.5	794.7	376.8	1,446,598.96	3,220,661.26	40° 33' 23.765 N	104° 42' 21.110 W
6,400.0	4.20	25.37	6,325.1	802.9	380.7	1,446,607.19	3,220,665.07	40° 33' 23.846 N	104° 42' 21.060 W
6,500.0	2.20	25.37	6,424.9	808.0	383.1	1,446,612.26	3,220,667.42	40° 33' 23.896 N	104° 42' 21.029 W
6,600.0	0.20	25.37	6,524.9	809.9	384.0	1,446,614.16	3,220,668.30	40° 33' 23.915 N	104° 42' 21.017 W
6,610.1	0.00	0.00	6,535.0	809.9	384.0	1,446,614.18	3,220,668.31	40° 33' 23.915 N	104° 42' 21.017 W
<b>Vertical</b>									
6,640.1	0.00	0.00	6,565.0	809.9	384.0	1,446,614.18	3,220,668.31	40° 33' 23.915 N	104° 42' 21.017 W
<b>KOP 10°/100</b>									
6,700.0	5.99	270.62	6,624.8	809.9	380.9	1,446,614.19	3,220,665.18	40° 33' 23.915 N	104° 42' 21.057 W
6,800.0	15.99	270.62	6,722.8	810.1	361.8	1,446,614.22	3,220,646.14	40° 33' 23.917 N	104° 42' 21.304 W
6,900.0	25.99	270.62	6,816.1	810.5	326.1	1,446,614.29	3,220,610.37	40° 33' 23.921 N	104° 42' 21.768 W
7,000.0	35.99	270.62	6,901.7	811.1	274.6	1,446,614.39	3,220,558.95	40° 33' 23.927 N	104° 42' 22.434 W
7,100.0	45.99	270.62	6,977.1	811.8	209.1	1,446,614.51	3,220,493.44	40° 33' 23.934 N	104° 42' 23.282 W
7,146.5	50.64	270.62	7,008.0	812.2	174.4	1,446,614.57	3,220,458.71	40° 33' 23.938 N	104° 42' 23.732 W
<b>NIOBRARA</b>									
7,200.0	55.99	270.62	7,039.9	812.6	131.5	1,446,614.65	3,220,415.84	40° 33' 23.942 N	104° 42' 24.288 W
7,300.0	65.99	270.62	7,088.4	813.6	44.2	1,446,614.82	3,220,328.50	40° 33' 23.951 N	104° 42' 25.419 W
7,400.0	75.99	270.62	7,120.9	814.6	-50.2	1,446,615.00	3,220,234.07	40° 33' 23.962 N	104° 42' 26.643 W
7,500.0	85.99	270.62	7,136.6	815.7	-148.8	1,446,615.18	3,220,135.43	40° 33' 23.972 N	104° 42' 27.920 W
7,540.1	90.00	270.62	7,138.0	816.1	-188.9	1,446,615.26	3,220,095.35	40° 33' 23.976 N	104° 42' 28.440 W
<b>Landing Pt 90° Inc, 270.62° Az - 7"</b>									
7,600.0	90.00	270.62	7,138.0	816.7	-248.8	1,446,615.37	3,220,035.46	40° 33' 23.983 N	104° 42' 29.216 W
7,700.0	90.00	270.62	7,138.0	817.8	-348.8	1,446,615.56	3,219,935.46	40° 33' 23.993 N	104° 42' 30.511 W
7,800.0	90.00	270.62	7,138.0	818.9	-448.8	1,446,615.75	3,219,835.46	40° 33' 24.004 N	104° 42' 31.807 W
7,900.0	90.00	270.62	7,138.0	820.0	-548.8	1,446,615.93	3,219,735.46	40° 33' 24.015 N	104° 42' 33.102 W
8,000.0	90.00	270.62	7,138.0	821.1	-648.8	1,446,616.12	3,219,635.46	40° 33' 24.025 N	104° 42' 34.398 W
8,100.0	90.00	270.62	7,138.0	822.2	-748.8	1,446,616.31	3,219,535.46	40° 33' 24.036 N	104° 42' 35.693 W
8,200.0	90.00	270.62	7,138.0	823.2	-848.8	1,446,616.50	3,219,435.46	40° 33' 24.047 N	104° 42' 36.989 W
8,300.0	90.00	270.62	7,137.9	824.3	-948.8	1,446,616.69	3,219,335.46	40° 33' 24.057 N	104° 42' 38.284 W
8,400.0	90.00	270.62	7,137.9	825.4	-1,048.8	1,446,616.87	3,219,235.47	40° 33' 24.068 N	104° 42' 39.580 W

# New Tech

## Planning Report - Geographic

<b>Database:</b>	EDM 2003.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well WAAG 20 - Slot WAAG 20
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	WELL @ 4884.0ft (Original Well Elev)
<b>Project:</b>	SEC 19 T7N R65W	<b>MD Reference:</b>	WELL @ 4884.0ft (Original Well Elev)
<b>Site:</b>	WAAG SOUTH	<b>North Reference:</b>	True
<b>Well:</b>	WAAG 20	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 03Aug14 mab		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude	
8,500.0	90.00	270.62	7,137.9	826.5	-1,148.8	1,446,617.06	3,219,135.47	40° 33' 24.079 N	104° 42' 40.875 W	
8,600.0	90.00	270.62	7,137.9	827.6	-1,248.7	1,446,617.25	3,219,035.47	40° 33' 24.089 N	104° 42' 42.171 W	
8,700.0	90.00	270.62	7,137.9	828.7	-1,348.7	1,446,617.44	3,218,935.47	40° 33' 24.100 N	104° 42' 43.466 W	
8,800.0	90.00	270.62	7,137.9	829.7	-1,448.7	1,446,617.63	3,218,835.47	40° 33' 24.111 N	104° 42' 44.762 W	
8,900.0	90.00	270.62	7,137.9	830.8	-1,548.7	1,446,617.81	3,218,735.47	40° 33' 24.121 N	104° 42' 46.057 W	
9,000.0	90.00	270.62	7,137.9	831.9	-1,648.7	1,446,618.00	3,218,635.47	40° 33' 24.132 N	104° 42' 47.353 W	
9,100.0	90.00	270.62	7,137.9	833.0	-1,748.7	1,446,618.19	3,218,535.47	40° 33' 24.143 N	104° 42' 48.648 W	
9,200.0	90.00	270.62	7,137.9	834.1	-1,848.7	1,446,618.38	3,218,435.47	40° 33' 24.153 N	104° 42' 49.944 W	
9,300.0	90.00	270.62	7,137.9	835.1	-1,948.7	1,446,618.57	3,218,335.47	40° 33' 24.164 N	104° 42' 51.239 W	
9,400.0	90.00	270.62	7,137.9	836.2	-2,048.7	1,446,618.75	3,218,235.47	40° 33' 24.174 N	104° 42' 52.535 W	
9,500.0	90.00	270.62	7,137.9	837.3	-2,148.7	1,446,618.94	3,218,135.47	40° 33' 24.185 N	104° 42' 53.830 W	
9,600.0	90.00	270.62	7,137.9	838.4	-2,248.7	1,446,619.13	3,218,035.47	40° 33' 24.196 N	104° 42' 55.126 W	
9,700.0	90.00	270.62	7,137.9	839.5	-2,348.7	1,446,619.32	3,217,935.47	40° 33' 24.206 N	104° 42' 56.421 W	
9,800.0	90.00	270.62	7,137.9	840.6	-2,448.7	1,446,619.51	3,217,835.47	40° 33' 24.217 N	104° 42' 57.717 W	
9,900.0	90.00	270.62	7,137.9	841.6	-2,548.7	1,446,619.70	3,217,735.47	40° 33' 24.227 N	104° 42' 59.012 W	
10,000.0	90.00	270.62	7,137.9	842.7	-2,648.7	1,446,619.88	3,217,635.47	40° 33' 24.238 N	104° 43' 0.308 W	
10,100.0	90.00	270.62	7,137.9	843.8	-2,748.7	1,446,620.07	3,217,535.47	40° 33' 24.249 N	104° 43' 1.603 W	
10,200.0	90.00	270.62	7,137.8	844.9	-2,848.7	1,446,620.26	3,217,435.47	40° 33' 24.259 N	104° 43' 2.899 W	
10,300.0	90.00	270.62	7,137.8	846.0	-2,948.6	1,446,620.45	3,217,335.47	40° 33' 24.270 N	104° 43' 4.194 W	
10,400.0	90.01	270.62	7,137.8	847.0	-3,048.6	1,446,620.64	3,217,235.47	40° 33' 24.280 N	104° 43' 5.490 W	
10,500.0	90.01	270.62	7,137.8	848.1	-3,148.6	1,446,620.82	3,217,135.47	40° 33' 24.291 N	104° 43' 6.785 W	
10,600.0	90.01	270.62	7,137.8	849.2	-3,248.6	1,446,621.01	3,217,035.47	40° 33' 24.301 N	104° 43' 8.081 W	
10,700.0	90.01	270.62	7,137.8	850.3	-3,348.6	1,446,621.20	3,216,935.47	40° 33' 24.312 N	104° 43' 9.376 W	
10,800.0	90.01	270.62	7,137.8	851.4	-3,448.6	1,446,621.39	3,216,835.47	40° 33' 24.323 N	104° 43' 10.672 W	
10,900.0	90.01	270.62	7,137.8	852.5	-3,548.6	1,446,621.58	3,216,735.47	40° 33' 24.333 N	104° 43' 11.967 W	
11,000.0	90.01	270.62	7,137.8	853.5	-3,648.6	1,446,621.76	3,216,635.47	40° 33' 24.344 N	104° 43' 13.263 W	
11,100.0	90.01	270.62	7,137.8	854.6	-3,748.6	1,446,621.95	3,216,535.47	40° 33' 24.354 N	104° 43' 14.558 W	
11,200.0	90.01	270.62	7,137.8	855.7	-3,848.6	1,446,622.14	3,216,435.47	40° 33' 24.365 N	104° 43' 15.854 W	
11,300.0	90.01	270.62	7,137.7	856.8	-3,948.6	1,446,622.33	3,216,335.47	40° 33' 24.375 N	104° 43' 17.149 W	
11,400.0	90.01	270.62	7,137.7	857.9	-4,048.6	1,446,622.52	3,216,235.47	40° 33' 24.386 N	104° 43' 18.445 W	
11,500.0	90.01	270.62	7,137.7	858.9	-4,148.6	1,446,622.70	3,216,135.47	40° 33' 24.396 N	104° 43' 19.740 W	
11,600.0	90.01	270.62	7,137.7	860.0	-4,248.6	1,446,622.89	3,216,035.47	40° 33' 24.407 N	104° 43' 21.036 W	
11,700.0	90.01	270.62	7,137.7	861.1	-4,348.6	1,446,623.08	3,215,935.47	40° 33' 24.417 N	104° 43' 22.331 W	
11,800.0	90.01	270.62	7,137.7	862.2	-4,448.6	1,446,623.27	3,215,835.47	40° 33' 24.428 N	104° 43' 23.627 W	
11,900.0	90.01	270.62	7,137.7	863.3	-4,548.6	1,446,623.46	3,215,735.47	40° 33' 24.438 N	104° 43' 24.923 W	
11,980.7	90.00	270.61	7,138.0	863.9	-4,629.3	1,446,623.31	3,215,654.77	40° 33' 24.444 N	104° 43' 25.968 W	
TD at 11980.7 - TD / PBHL WAAG SOUTH 20										

Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude	
- hit/miss target										
- Shape										
TD / PBHL WAAG SOUTH 20	0.00	0.00	7,138.0	863.9	-4,629.3	1,446,623.31	3,215,654.77	40° 33' 24.444 N	104° 43' 25.968 W	
- plan hits target										
- Point										
LP WAAG SOUTH 20	0.00	0.00	7,138.0	816.1	-188.9	1,446,615.21	3,220,095.32	40° 33' 23.976 N	104° 42' 28.440 W	
- plan hits target										
- Point										

**New Tech**  
Planning Report - Geographic

<b>Database:</b>	EDM 2003.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well WAAG 20 - Slot WAAG 20
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	WELL @ 4884.0ft (Original Well Elev)
<b>Project:</b>	SEC 19 T7N R65W	<b>MD Reference:</b>	WELL @ 4884.0ft (Original Well Elev)
<b>Site:</b>	WAAG SOUTH	<b>North Reference:</b>	True
<b>Well:</b>	WAAG 20	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 03Aug14 mab		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
850.0	850.0	9 5/8"	0	0	
7,540.1	7,138.0	7"	0	0	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3645.90	3610.00	PARKMAN			
4383.90	4337.00	SUSSEX			
4782.80	4730.00	SHANNON			
7146.50	7008.00	NIOBRARA			
	7148.00	NIO B TARGET			
	7292.00	FORT HAYS			
	7325.00	CODELL			

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
900.0	900.0	0.0	0.0	Start Build 2.00	
1,394.7	1,392.2	38.5	18.3	Hold 9.89° Inc, 25.37° Az	
6,115.4	6,042.8	771.4	365.7	Start Drop -2.00	
6,610.1	6,535.0	809.9	384.0	Vertical	
6,640.1	6,565.0	809.9	384.0	KOP 10°/100	
7,540.1	7,138.0	816.1	-188.9	Landing Pt 90° Inc, 270.62° Az	
11,980.7	7,138.0	863.9	-4,629.3	TD at 11980.7	