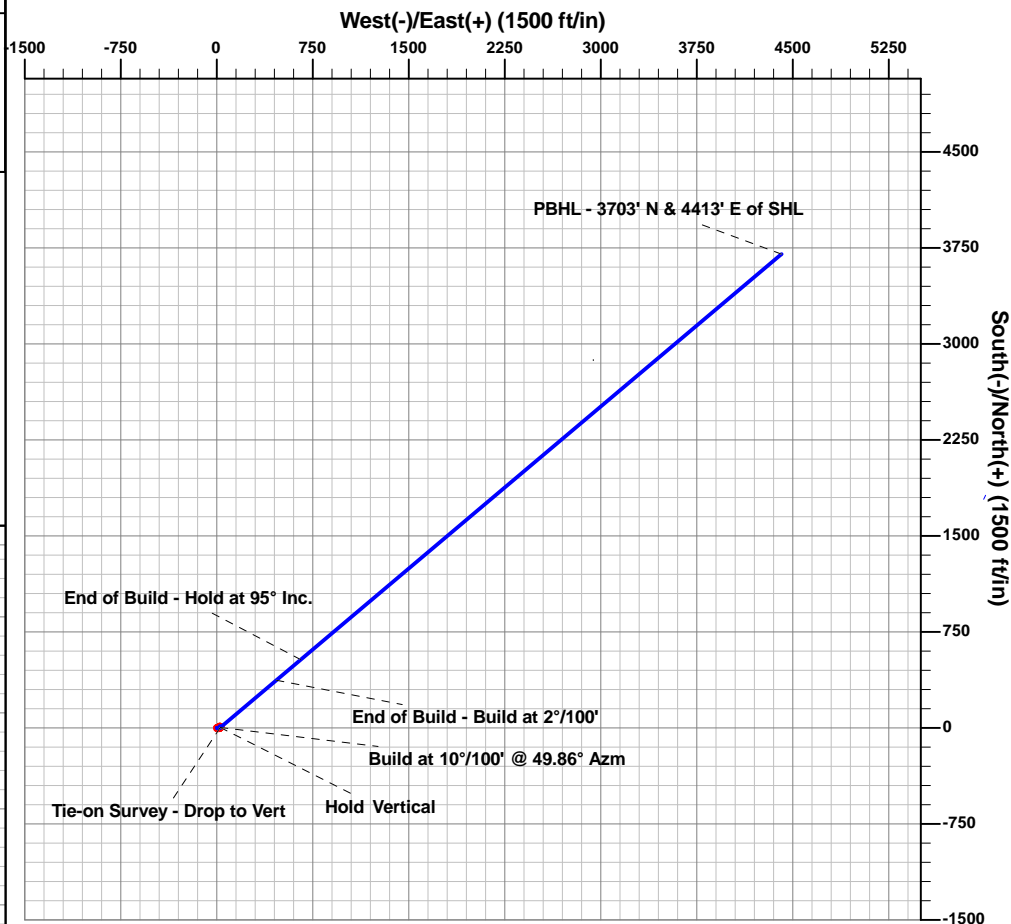
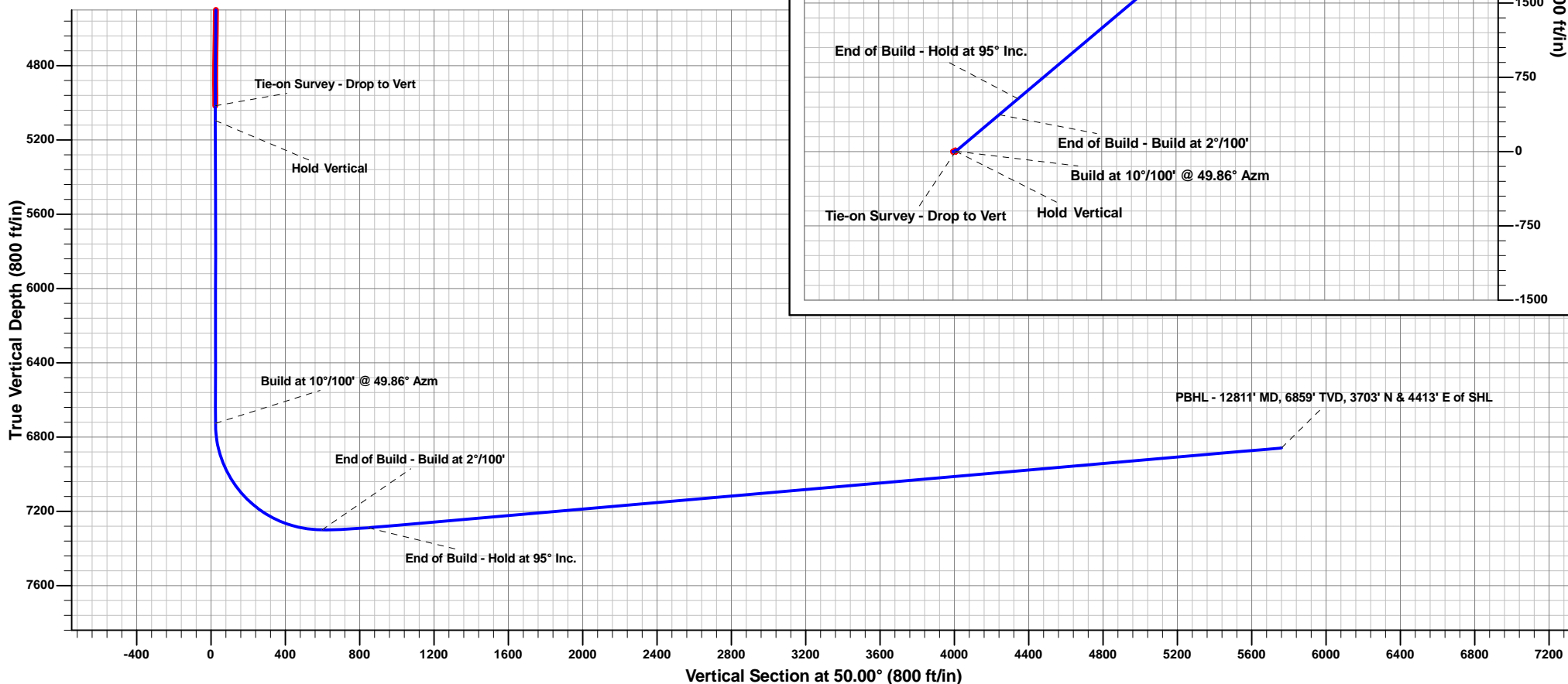
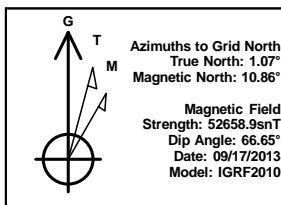


### ANNOTATIONS

MD	TVD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation
5017.00	5016.39	0.80	36.30	4.07	27.35	23.57	0.00	Tie-on Survey - Drop to Vert
5097.00	5096.38	0.00	0.00	4.52	27.68	24.11	0.56	Hold Vertical
6727.66	6727.04	0.00	0.00	4.52	27.68	24.11	0.56	Build at 10°/100' @ 49.86° Azm
7627.66	7300.00	90.00	49.86	373.91	465.67	597.07	573.52	End of Build - Build at 2°/100'
7877.66	7289.10	95.00	49.86	534.88	656.54	846.75	823.20	End of Build - Hold at 95° Inc.
12810.89	6859.14	95.00	49.86	3703.22	4413.33	5761.19	5737.65	PBHL - 12811' MD, 6859' TVD, 3703' N & 4413' E of SHL

### WELL DETAILS: Pirtlaw Partners, LTD. 32-09H

+N/-S	+E/-W	Northing	Ground Level: Easting	6616.20 Latitude	Longitude
0.00	0.00	1427893.26	2540475.01	40.4962072	-107.1523973



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Pirtlaw Partners, LTD. 32-09H
<b>Company:</b>	Quicksilver Resources	<b>TVD Reference:</b>	Well @ 6616.20ft
<b>Project:</b>	Routt County, CO. (NAD83)	<b>MD Reference:</b>	Well @ 6616.20ft
<b>Site:</b>	Pirtlaw Partners, LTD. 32-09H	<b>North Reference:</b>	Grid
<b>Well:</b>	Pirtlaw Partners, LTD. 32-09H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1		

<b>Project</b>	Routt County, CO. (NAD83)		
<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	Pirtlaw Partners, LTD. 32-09H				
Site Position:		Northing:	1,427,893.26 ft	Latitude:	40.4962072
From:	Map	Easting:	2,540,475.01 ft	Longitude:	-107.1523974
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.07 °

Well	Pirtlaw Partners, LTD. 32-09H					
Well Position	+N/-S	0.00 ft	Northing:	1,427,893.26 ft	Latitude:	40.4962072
	+E/-W	0.00 ft	Easting:	2,540,475.01 ft	Longitude:	-107.1523974
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	6,616.20 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 (nT)</b>
	IGRF2010	09/17/13	9.79	66.65	52,659

<b>Design</b>	Plan #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	5,017.00
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	50.00

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
5,017.00	0.80	36.30	5,016.39	4.07	27.35	0.00	0.00	0.00	0.00	
5,097.00	0.00	0.00	5,096.38	4.52	27.68	1.00	-1.00	0.00	180.00	
6,727.66	0.00	0.00	6,727.04	4.52	27.68	0.00	0.00	0.00	0.00	
7,627.66	90.00	49.86	7,300.00	373.91	465.67	10.00	10.00	0.00	49.86	
7,877.66	95.00	49.86	7,289.10	534.88	656.54	2.00	2.00	0.00	0.00	
12,810.89	95.00	49.86	6,859.14	3,703.22	4,413.33	0.00	0.00	0.00	0.00	Pirtlaw Partners, LTD

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Pirtlaw Partners, LTD. 32-09H
<b>Company:</b>	Quicksilver Resources	<b>TVD Reference:</b>	Well @ 6616.20ft
<b>Project:</b>	Routt County, CO. (NAD83)	<b>MD Reference:</b>	Well @ 6616.20ft
<b>Site:</b>	Pirtlaw Partners, LTD. 32-09H	<b>North Reference:</b>	Grid
<b>Well:</b>	Pirtlaw Partners, LTD. 32-09H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,017.00	0.80	36.30	5,016.39	4.07	27.35	23.57	0.00	0.00	0.00
<b>Tie-on Survey - Drop to Vert</b>									
5,097.00	0.00	0.00	5,096.38	4.52	27.68	24.11	1.00	-1.00	0.00
<b>Hold Vertical</b>									
5,100.00	0.00	0.00	5,099.38	4.52	27.68	24.11	0.00	0.00	0.00
5,200.00	0.00	0.00	5,199.38	4.52	27.68	24.11	0.00	0.00	0.00
5,300.00	0.00	0.00	5,299.38	4.52	27.68	24.11	0.00	0.00	0.00
5,400.00	0.00	0.00	5,399.38	4.52	27.68	24.11	0.00	0.00	0.00
5,500.00	0.00	0.00	5,499.38	4.52	27.68	24.11	0.00	0.00	0.00
5,600.00	0.00	0.00	5,599.38	4.52	27.68	24.11	0.00	0.00	0.00
5,700.00	0.00	0.00	5,699.38	4.52	27.68	24.11	0.00	0.00	0.00
5,800.00	0.00	0.00	5,799.38	4.52	27.68	24.11	0.00	0.00	0.00
5,900.00	0.00	0.00	5,899.38	4.52	27.68	24.11	0.00	0.00	0.00
6,000.00	0.00	0.00	5,999.38	4.52	27.68	24.11	0.00	0.00	0.00
6,100.00	0.00	0.00	6,099.38	4.52	27.68	24.11	0.00	0.00	0.00
6,200.00	0.00	0.00	6,199.38	4.52	27.68	24.11	0.00	0.00	0.00
6,300.00	0.00	0.00	6,299.38	4.52	27.68	24.11	0.00	0.00	0.00
6,400.00	0.00	0.00	6,399.38	4.52	27.68	24.11	0.00	0.00	0.00
6,500.00	0.00	0.00	6,499.38	4.52	27.68	24.11	0.00	0.00	0.00
6,600.00	0.00	0.00	6,599.38	4.52	27.68	24.11	0.00	0.00	0.00
6,700.00	0.00	0.00	6,699.38	4.52	27.68	24.11	0.00	0.00	0.00
6,727.66	0.00	0.00	6,727.04	4.52	27.68	24.11	0.00	0.00	0.00
<b>Build at 10°/100' @ 49.86° Azm</b>									
6,800.00	7.23	49.86	6,799.19	7.46	31.17	28.67	10.00	10.00	0.00
6,900.00	17.23	49.86	6,896.80	21.11	47.34	49.84	10.00	10.00	0.00
7,000.00	27.23	49.86	6,989.24	45.47	76.23	87.63	10.00	10.00	0.00
7,100.00	37.23	49.86	7,073.72	79.82	116.96	140.90	10.00	10.00	0.00
7,200.00	47.23	49.86	7,147.67	123.09	168.27	208.03	10.00	10.00	0.00
7,300.00	57.23	49.86	7,208.84	173.99	228.63	286.98	10.00	10.00	0.00
7,400.00	67.23	49.86	7,255.36	230.97	296.18	375.35	10.00	10.00	0.00
7,500.00	77.23	49.86	7,285.84	292.29	368.89	470.46	10.00	10.00	0.00
7,600.00	87.23	49.86	7,299.33	356.08	444.53	569.42	10.00	10.00	0.00
7,627.66	90.00	49.86	7,300.00	373.91	465.67	597.07	10.00	10.00	0.00
<b>End of Build - Build at 2°/100'</b>									
7,700.00	91.45	49.86	7,299.09	420.54	520.96	669.40	2.00	2.00	0.00
7,800.00	93.45	49.86	7,294.82	484.95	597.33	769.30	2.00	2.00	0.00
7,877.66	95.00	49.86	7,289.10	534.88	656.54	846.75	2.00	2.00	0.00
<b>End of Build - Hold at 95° Inc.</b>									
7,900.00	95.00	49.86	7,287.15	549.23	673.55	869.01	0.00	0.00	0.00
8,000.00	95.00	49.86	7,278.44	613.45	749.70	968.62	0.00	0.00	0.00
8,100.00	95.00	49.86	7,269.72	677.68	825.86	1,068.24	0.00	0.00	0.00
8,200.00	95.00	49.86	7,261.01	741.90	902.01	1,167.86	0.00	0.00	0.00
8,300.00	95.00	49.86	7,252.29	806.12	978.16	1,267.48	0.00	0.00	0.00
8,400.00	95.00	49.86	7,243.58	870.35	1,054.31	1,367.10	0.00	0.00	0.00
8,500.00	95.00	49.86	7,234.86	934.57	1,130.47	1,466.72	0.00	0.00	0.00
8,600.00	95.00	49.86	7,226.14	998.80	1,206.62	1,566.34	0.00	0.00	0.00
8,700.00	95.00	49.86	7,217.43	1,063.02	1,282.77	1,665.96	0.00	0.00	0.00
8,800.00	95.00	49.86	7,208.71	1,127.25	1,358.93	1,765.58	0.00	0.00	0.00
8,900.00	95.00	49.86	7,200.00	1,191.47	1,435.08	1,865.20	0.00	0.00	0.00
9,000.00	95.00	49.86	7,191.28	1,255.70	1,511.23	1,964.82	0.00	0.00	0.00
9,100.00	95.00	49.86	7,182.57	1,319.92	1,587.39	2,064.44	0.00	0.00	0.00
9,200.00	95.00	49.86	7,173.85	1,384.14	1,663.54	2,164.05	0.00	0.00	0.00
9,300.00	95.00	49.86	7,165.14	1,448.37	1,739.69	2,263.67	0.00	0.00	0.00
9,400.00	95.00	49.86	7,156.42	1,512.59	1,815.84	2,363.29	0.00	0.00	0.00

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Pirtlaw Partners, LTD. 32-09H
<b>Company:</b>	Quicksilver Resources	<b>TVD Reference:</b>	Well @ 6616.20ft
<b>Project:</b>	Routt County, CO. (NAD83)	<b>MD Reference:</b>	Well @ 6616.20ft
<b>Site:</b>	Pirtlaw Partners, LTD. 32-09H	<b>North Reference:</b>	Grid
<b>Well:</b>	Pirtlaw Partners, LTD. 32-09H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
9,500.00	95.00	49.86	7,147.70	1,576.82	1,892.00	2,462.91	0.00	0.00	0.00	
9,600.00	95.00	49.86	7,138.99	1,641.04	1,968.15	2,562.53	0.00	0.00	0.00	
9,700.00	95.00	49.86	7,130.27	1,705.27	2,044.30	2,662.15	0.00	0.00	0.00	
9,800.00	95.00	49.86	7,121.56	1,769.49	2,120.46	2,761.77	0.00	0.00	0.00	
9,900.00	95.00	49.86	7,112.84	1,833.72	2,196.61	2,861.39	0.00	0.00	0.00	
10,000.00	95.00	49.86	7,104.13	1,897.94	2,272.76	2,961.01	0.00	0.00	0.00	
10,100.00	95.00	49.86	7,095.41	1,962.16	2,348.91	3,060.63	0.00	0.00	0.00	
10,200.00	95.00	49.86	7,086.69	2,026.39	2,425.07	3,160.25	0.00	0.00	0.00	
10,300.00	95.00	49.86	7,077.98	2,090.61	2,501.22	3,259.87	0.00	0.00	0.00	
10,400.00	95.00	49.86	7,069.26	2,154.84	2,577.37	3,359.48	0.00	0.00	0.00	
10,500.00	95.00	49.86	7,060.55	2,219.06	2,653.53	3,459.10	0.00	0.00	0.00	
10,600.00	95.00	49.86	7,051.83	2,283.29	2,729.68	3,558.72	0.00	0.00	0.00	
10,700.00	95.00	49.86	7,043.12	2,347.51	2,805.83	3,658.34	0.00	0.00	0.00	
10,800.00	95.00	49.86	7,034.40	2,411.73	2,881.98	3,757.96	0.00	0.00	0.00	
10,900.00	95.00	49.86	7,025.69	2,475.96	2,958.14	3,857.58	0.00	0.00	0.00	
11,000.00	95.00	49.86	7,016.97	2,540.18	3,034.29	3,957.20	0.00	0.00	0.00	
11,100.00	95.00	49.86	7,008.25	2,604.41	3,110.44	4,056.82	0.00	0.00	0.00	
11,200.00	95.00	49.86	6,999.54	2,668.63	3,186.60	4,156.44	0.00	0.00	0.00	
11,300.00	95.00	49.86	6,990.82	2,732.86	3,262.75	4,256.06	0.00	0.00	0.00	
11,400.00	95.00	49.86	6,982.11	2,797.08	3,338.90	4,355.68	0.00	0.00	0.00	
11,500.00	95.00	49.86	6,973.39	2,861.31	3,415.05	4,455.30	0.00	0.00	0.00	
11,600.00	95.00	49.86	6,964.68	2,925.53	3,491.21	4,554.91	0.00	0.00	0.00	
11,700.00	95.00	49.86	6,955.96	2,989.75	3,567.36	4,654.53	0.00	0.00	0.00	
11,800.00	95.00	49.86	6,947.25	3,053.98	3,643.51	4,754.15	0.00	0.00	0.00	
11,900.00	95.00	49.86	6,938.53	3,118.20	3,719.67	4,853.77	0.00	0.00	0.00	
12,000.00	95.00	49.86	6,929.81	3,182.43	3,795.82	4,953.39	0.00	0.00	0.00	
12,100.00	95.00	49.86	6,921.10	3,246.65	3,871.97	5,053.01	0.00	0.00	0.00	
12,200.00	95.00	49.86	6,912.38	3,310.88	3,948.12	5,152.63	0.00	0.00	0.00	
12,300.00	95.00	49.86	6,903.67	3,375.10	4,024.28	5,252.25	0.00	0.00	0.00	
12,400.00	95.00	49.86	6,894.95	3,439.33	4,100.43	5,351.87	0.00	0.00	0.00	
12,500.00	95.00	49.86	6,886.24	3,503.55	4,176.58	5,451.49	0.00	0.00	0.00	
12,600.00	95.00	49.86	6,877.52	3,567.77	4,252.74	5,551.11	0.00	0.00	0.00	
12,700.00	95.00	49.86	6,868.81	3,632.00	4,328.89	5,650.73	0.00	0.00	0.00	
12,800.00	95.00	49.86	6,860.09	3,696.22	4,405.04	5,750.34	0.00	0.00	0.00	
12,810.89	95.00	49.86	6,859.14	3,703.22	4,413.33	5,761.19	0.00	0.00	0.00	
PBHL - 12811' MD, 6859' TVD, 3703' N & 4413' E of SHL										

Design Targets										
Target Name										
- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)		Latitude	Longitude
- Shape										
Pirtlaw Partners, LTD 32	0.00	360.00	6,859.14	3,703.22	4,413.33	1,431,596.48	2,544,888.34		40.5065953	-107.1367772
- plan misses target center by 0.01ft at 12810.89ft MD (6859.14 TVD, 3703.22 N, 4413.33 E)										
- Point										

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Pirtlaw Partners, LTD. 32-09H
<b>Company:</b>	Quicksilver Resources	<b>TVD Reference:</b>	Well @ 6616.20ft
<b>Project:</b>	Routt County, CO. (NAD83)	<b>MD Reference:</b>	Well @ 6616.20ft
<b>Site:</b>	Pirtlaw Partners, LTD. 32-09H	<b>North Reference:</b>	Grid
<b>Well:</b>	Pirtlaw Partners, LTD. 32-09H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
5,017.00	5,016.39	4.07	27.35	Tie-on Survey - Drop to Vert	
5,097.00	5,096.38	4.52	27.68	Hold Vertical	
6,727.66	6,727.04	4.52	27.68	Build at 10°/100' @ 49.86° Azm	
7,627.66	7,300.00	373.91	465.67	End of Build - Build at 2°/100'	
7,877.66	7,289.10	534.88	656.54	End of Build - Hold at 95° Inc.	
12,810.89	6,859.14	3,703.22	4,413.33	PBHL - 12811' MD, 6859' TVD, 3703' N & 4413' E of SHL	