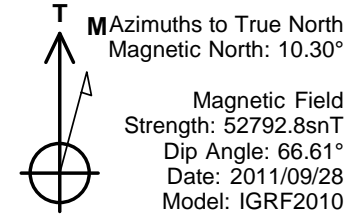




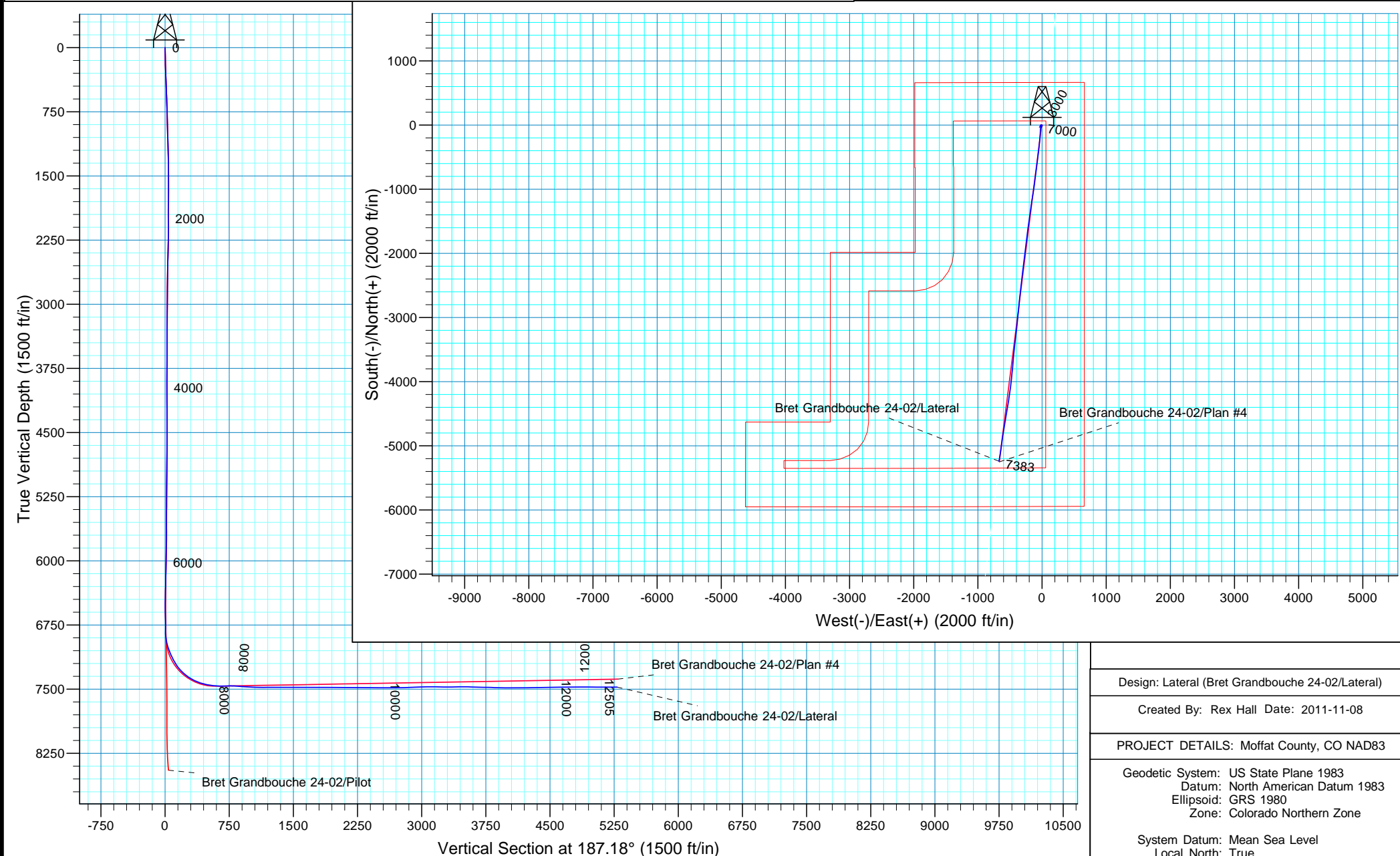
Project: Moffat County, CO NAD83
Site: Bret Grandbouche
Well: Bret Grandbouche 24-02
Wellbore: Lateral
Design: Lateral

Quicksilver Resources, Inc.



WELL DETAILS: Bret Grandbouche 24-02

+N/-S	+E/-W	GL 6634' & KB 16' @ 6650.00ft (DHS 6)	6634.00
0.00	0.00	Northing	Easting
		1430462.27	2391175.8240° 29' 39.800 N
			107° 41' 21.380 W



Design: Lateral (Bret Grandbouche 24-02/Lateral)

Created By: Rex Hall Date: 2011-11-08

PROJECT DETAILS: Moffat County, CO NAD83

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone

System Datum: Mean Sea Level
Local North: True

Quicksilver Resources, Inc.

Moffat County, CO NAD83

Bret Grandbouche

Bret Grandbouche 24-02

Pilot

Design: Pilot

Standard Survey Report

08 November, 2011

Scientific Drilling International

Survey Report

Company:	Quicksilver Resources, Inc.	Local Co-ordinate Reference:	Well Bret Grandbouche 24-02
Project:	Moffat County, CO NAD83	TVD Reference:	GL 6634' & KB 16' @ 6650.00ft (DHS 6)
Site:	Bret Grandbouche	MD Reference:	GL 6634' & KB 16' @ 6650.00ft (DHS 6)
Well:	Bret Grandbouche 24-02	North Reference:	True
Wellbore:	Pilot	Survey Calculation Method:	Minimum Curvature
Design:	Pilot	Database:	Rockies Compass Server

Project	Moffat County, CO NAD83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	Bret Grandbouche				
Site Position:		Northing:	1,430,462.28 usft	Latitude:	40° 29' 39.800 N
From:	Lat/Long	Easting:	2,391,175.82 usft	Longitude:	107° 41' 21.380 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.41 °

Well	Bret Grandbouche 24-02, 664' FSL 1983' FWL Sec 2 T6N R92W					
Well Position	+N/-S	0.00 ft	Northing:	1,430,462.27 usft	Latitude:	40° 29' 39.800 N
	+E/-W	0.00 ft	Easting:	2,391,175.82 usft	Longitude:	107° 41' 21.380 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	6,634.00 ft

Wellbore	Pilot				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2011/09/28	10.30	66.61	52,793

Design	Pilot				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	228.57	

Survey Program	Date	2011/10/08			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
200.00	1,070.00	Survey #1 - Surface Gyro Surveys (Pilot)	NS-GYRO-MS	North sensing gyrocompassing m/s	
1,227.00	8,450.00	Survey #2 - Intermediate SDI MWD Survey	MWD SDI	MWD - Standard ver 1.0.1	

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)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	1.76	181.38	199.97	-3.07	-0.07	2.09	0.88	0.88	0.00	
First Surface Gyro Survey										
400.00	2.36	184.99	399.84	-10.24	-0.51	7.16	0.31	0.30	1.81	
600.00	1.93	180.92	599.70	-17.71	-0.92	12.41	0.23	-0.22	-2.04	
800.00	1.52	204.77	799.61	-23.49	-2.08	17.10	0.41	-0.21	11.93	
1,000.00	2.09	224.64	999.51	-28.49	-5.76	23.17	0.42	0.29	9.94	
1,070.00	2.31	226.37	1,069.46	-30.37	-7.68	25.85	0.33	0.31	2.47	
Last Surface Gyro Survey										

Scientific Drilling International

Survey Report

Company:	Quicksilver Resources, Inc.	Local Co-ordinate Reference:	Well Bret Grandbouche 24-02
Project:	Moffat County, CO NAD83	TVD Reference:	GL 6634' & KB 16' @ 6650.00ft (DHS 6)
Site:	Bret Grandbouche	MD Reference:	GL 6634' & KB 16' @ 6650.00ft (DHS 6)
Well:	Bret Grandbouche 24-02	North Reference:	True
Wellbore:	Pilot	Survey Calculation Method:	Minimum Curvature
Design:	Pilot	Database:	Rockies Compass Server

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)	
1,227.00	2.56	220.66	1,226.32	-35.22	-12.25	32.49	0.22	0.16	-3.64	
First SDI Pilot Hole MWD Survey										
1,322.00	0.95	211.90	1,321.27	-37.50	-14.05	35.34	1.71	-1.69	-9.22	
1,416.00	0.93	58.36	1,415.27	-37.76	-13.81	35.34	1.95	-0.02	-163.34	
1,511.00	0.36	68.59	1,510.26	-37.24	-12.88	34.30	0.61	-0.60	10.77	
1,605.00	0.05	331.24	1,604.26	-37.10	-12.62	34.01	0.39	-0.33	-103.56	
1,699.00	0.29	306.21	1,698.26	-36.92	-12.83	34.05	0.26	0.26	-26.63	
1,794.00	0.43	289.71	1,793.26	-36.66	-13.36	34.28	0.18	0.15	-17.37	
1,888.00	0.87	285.65	1,887.25	-36.35	-14.38	34.83	0.47	0.47	-4.32	
1,982.00	0.30	144.02	1,981.25	-36.36	-14.93	35.25	1.19	-0.61	-150.67	
2,076.00	0.75	212.99	2,075.24	-37.07	-15.12	35.86	0.75	0.48	73.37	
2,171.00	1.16	353.86	2,170.24	-36.64	-15.56	35.91	1.90	0.43	148.28	
2,265.00	0.81	329.30	2,264.22	-35.12	-16.00	35.23	0.58	-0.37	-26.13	
2,358.00	1.66	28.97	2,357.20	-33.38	-15.68	33.84	1.54	0.91	64.16	
2,453.00	1.56	22.09	2,452.17	-30.97	-14.53	31.39	0.23	-0.11	-7.24	
2,547.00	1.48	341.49	2,546.14	-28.64	-14.43	29.77	1.12	-0.09	-43.19	
2,642.00	1.32	332.08	2,641.11	-26.51	-15.33	29.04	0.29	-0.17	-9.91	
2,735.00	0.76	350.43	2,734.09	-24.95	-15.94	28.46	0.69	-0.60	19.73	
2,829.00	0.20	349.71	2,828.09	-24.18	-16.07	28.05	0.60	-0.60	-0.77	
2,924.00	0.50	318.63	2,923.09	-23.70	-16.38	27.96	0.36	0.32	-32.72	
3,018.00	0.76	294.02	3,017.08	-23.14	-17.22	28.22	0.39	0.28	-26.18	
3,111.00	0.74	24.16	3,110.08	-22.34	-17.53	27.93	1.14	-0.02	96.92	
3,206.00	0.69	12.48	3,205.07	-21.22	-17.16	26.91	0.16	-0.05	-12.29	
3,300.00	0.79	317.79	3,299.06	-20.19	-17.47	26.46	0.73	0.11	-58.18	
3,394.00	0.10	36.14	3,393.06	-19.64	-17.86	26.39	0.83	-0.73	83.35	
3,489.00	0.34	286.10	3,488.06	-19.50	-18.08	26.46	0.41	0.25	-115.83	
3,583.00	0.57	275.59	3,582.06	-19.38	-18.81	26.93	0.26	0.24	-11.18	
3,677.00	0.78	272.13	3,676.05	-19.31	-19.92	27.71	0.23	0.22	-3.68	
3,771.00	0.82	71.59	3,770.05	-19.07	-19.92	27.55	1.67	0.04	169.64	
3,866.00	0.38	63.25	3,865.04	-18.71	-18.99	26.62	0.47	-0.46	-8.78	
3,960.00	0.10	346.24	3,959.04	-18.49	-18.73	26.28	0.39	-0.30	-81.93	
4,054.00	0.50	291.44	4,053.04	-18.26	-19.14	26.43	0.48	0.43	-58.30	
4,148.00	1.54	115.92	4,147.03	-18.67	-18.38	26.13	2.17	1.11	-186.72	
4,242.00	0.86	125.28	4,241.01	-19.63	-16.67	25.48	0.75	-0.72	9.96	
4,336.00	0.32	156.26	4,335.00	-20.27	-15.99	25.40	0.65	-0.57	32.96	
4,430.00	0.29	231.87	4,429.00	-20.66	-16.07	25.72	0.40	-0.03	80.44	
4,525.00	0.75	270.46	4,524.00	-20.80	-16.88	26.42	0.58	0.48	40.62	
4,619.00	0.49	50.25	4,618.00	-20.54	-17.19	26.48	1.24	-0.28	148.71	
4,713.00	0.38	353.64	4,711.99	-19.98	-16.91	25.90	0.45	-0.12	-60.22	
4,808.00	0.71	326.70	4,806.99	-19.17	-17.27	25.63	0.43	0.35	-28.36	
4,902.00	1.30	73.11	4,900.98	-18.37	-16.57	24.58	1.75	0.63	113.20	
4,996.00	0.81	53.65	4,994.96	-17.67	-15.01	22.95	0.64	-0.52	-20.70	
5,091.00	0.60	355.86	5,089.96	-16.78	-14.51	21.98	0.74	-0.22	-60.83	
5,185.00	1.02	316.85	5,183.95	-15.67	-15.12	21.71	0.71	0.45	-41.50	

Scientific Drilling International

Survey Report

Company:	Quicksilver Resources, Inc.	Local Co-ordinate Reference:	Well Bret Grandbouche 24-02
Project:	Moffat County, CO NAD83	TVD Reference:	GL 6634' & KB 16' @ 6650.00ft (DHS 6)
Site:	Bret Grandbouche	MD Reference:	GL 6634' & KB 16' @ 6650.00ft (DHS 6)
Well:	Bret Grandbouche 24-02	North Reference:	True
Wellbore:	Pilot	Survey Calculation Method:	Minimum Curvature
Design:	Pilot	Database:	Rockies Compass Server

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)
5,280.00	0.36	341.44	5,278.94	-14.77	-15.79	21.62	0.75	-0.69	25.88
5,374.00	0.78	10.52	5,372.94	-13.87	-15.77	21.00	0.53	0.45	30.94
5,468.00	0.96	305.17	5,466.93	-12.78	-16.29	20.68	1.01	0.19	-69.52
5,563.00	0.64	179.71	5,561.92	-12.86	-16.94	21.21	1.50	-0.34	-132.06
5,657.00	1.05	236.24	5,655.91	-13.86	-17.66	22.41	0.93	0.44	60.14
5,751.00	1.22	343.67	5,749.90	-13.38	-18.65	22.84	1.95	0.18	114.29
5,845.00	2.36	297.49	5,843.86	-11.52	-20.65	23.11	1.86	1.21	-49.13
5,940.00	2.49	314.23	5,938.78	-9.18	-23.87	23.97	0.76	0.14	17.62
6,034.00	1.05	14.43	6,032.74	-6.92	-25.11	23.41	2.31	-1.53	64.04
6,128.00	1.98	69.58	6,126.71	-5.52	-23.38	21.18	1.73	0.99	58.67
6,222.00	1.39	61.24	6,220.67	-4.41	-20.86	18.55	0.68	-0.63	-8.87
6,316.00	2.03	53.78	6,314.62	-2.87	-18.51	15.78	0.72	0.68	-7.94
6,357.00	2.19	57.72	6,355.60	-2.03	-17.27	14.29	0.53	0.39	9.61
6,513.00	1.27	94.42	6,511.53	-0.57	-13.02	10.14	0.89	-0.59	23.53
6,607.00	2.07	133.65	6,605.49	-1.82	-10.75	9.27	1.44	0.85	41.73
6,701.00	1.74	143.67	6,699.44	-4.14	-8.68	9.25	0.50	-0.35	10.66
6,795.00	1.22	175.19	6,793.41	-6.29	-7.75	9.97	1.01	-0.55	33.53
6,889.00	1.19	190.38	6,887.39	-8.25	-7.84	11.34	0.34	-0.03	16.16
6,983.00	1.31	208.59	6,981.36	-10.15	-8.53	13.11	0.44	0.13	19.37
7,077.00	1.35	208.69	7,075.34	-12.06	-9.58	15.16	0.04	0.04	0.11
7,171.00	1.10	205.72	7,169.32	-13.85	-10.50	17.04	0.27	-0.27	-3.16
7,265.00	0.80	212.37	7,263.30	-15.22	-11.24	18.50	0.34	-0.32	7.07
7,359.00	0.99	220.36	7,357.29	-16.39	-12.12	19.93	0.24	0.20	8.50
7,453.00	0.84	253.70	7,451.28	-17.20	-13.31	21.36	0.58	-0.16	35.47
7,547.00	0.93	244.65	7,545.27	-17.72	-14.66	22.72	0.18	0.10	-9.63
7,641.00	1.04	220.77	7,639.26	-18.69	-15.91	24.30	0.45	0.12	-25.40
7,735.00	0.98	300.21	7,733.25	-18.94	-17.16	25.39	1.37	-0.06	84.51
7,829.00	2.19	289.83	7,827.21	-17.92	-19.54	26.51	1.32	1.29	-11.04
7,923.00	1.98	270.61	7,921.15	-17.29	-22.86	28.58	0.77	-0.22	-20.45
8,017.00	1.63	261.86	8,015.10	-17.47	-25.80	30.90	0.47	-0.37	-9.31
8,111.00	1.83	250.17	8,109.06	-18.17	-28.54	33.42	0.43	0.21	-12.44
8,205.00	2.69	216.15	8,202.99	-20.46	-31.25	36.97	1.66	0.91	-36.19
8,299.00	3.69	211.23	8,296.84	-24.82	-34.12	42.01	1.10	1.06	-5.23
8,413.00	4.33	204.73	8,410.56	-31.87	-37.82	49.45	0.69	0.56	-5.70
Last SDI Pilot Hole MWD Survey									
8,450.00	4.33	204.73	8,447.46	-34.41	-38.99	52.00	0.00	0.00	0.00
Projection To Pilot Hole TD									

Scientific Drilling International

Survey Report

Company:	Quicksilver Resources, Inc.	Local Co-ordinate Reference:	Well Bret Grandbouche 24-02
Project:	Moffat County, CO NAD83	TVD Reference:	GL 6634' & KB 16' @ 6650.00ft (DHS 6)
Site:	Bret Grandbouche	MD Reference:	GL 6634' & KB 16' @ 6650.00ft (DHS 6)
Well:	Bret Grandbouche 24-02	North Reference:	True
Wellbore:	Pilot	Survey Calculation Method:	Minimum Curvature
Design:	Pilot	Database:	Rockies Compass Server

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.00	199.97	-3.07	-0.07	First Surface Gyro Survey
1,070.00	1,069.46	-30.37	-7.68	Last Surface Gyro Survey
1,227.00	1,226.32	-35.22	-12.25	First SDI Pilot Hole MWD Survey
8,413.00	8,410.56	-31.87	-37.82	Last SDI Pilot Hole MWD Survey
8,450.00	8,447.46	-34.41	-38.99	Projection To Pilot Hole TD

Checked By: _____ Approved By: _____ Date: _____

Quicksilver Resources, Inc.

Moffat County, CO NAD83

Bret Grandbouche

Bret Grandbouche 24-02

Lateral

Design: Lateral

Standard Survey Report

08 November, 2011

Scientific Drilling International

Survey Report

Company:	Quicksilver Resources, Inc.	Local Co-ordinate Reference:	Well Bret Grandbouche 24-02
Project:	Moffat County, CO NAD83	TVD Reference:	GL 6634' & KB 16' @ 6650.00ft (DHS 6)
Site:	Bret Grandbouche	MD Reference:	GL 6634' & KB 16' @ 6650.00ft (DHS 6)
Well:	Bret Grandbouche 24-02	North Reference:	True
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Lateral	Database:	Rockies Compass Server

Project	Moffat County, CO NAD83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Bret Grandbouche			
Site Position:		Northing:	1,430,462.28 usft	Latitude:	40° 29' 39.800 N
From:	Lat/Long	Easting:	2,391,175.82 usft	Longitude:	107° 41' 21.380 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.41 °

Well	Bret Grandbouche 24-02, 664' FSL 1983' FWL Sec 2 T6N R92W					
Well Position	+N-S	0.00 ft	Northing:	1,430,462.27 usft	Latitude:	40° 29' 39.800 N
	+E-W	0.00 ft	Easting:	2,391,175.82 usft	Longitude:	107° 41' 21.380 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	6,634.00 ft

Wellbore	Lateral				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2011/09/28	10.30	66.61	52,793

Design	Lateral				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	6,357.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	187.18	

Survey Program	Date	2011/10/24			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
200.00	1,070.00	Survey #1 - Surface Gyro Surveys (Pilot)	NS-GYRO-MS	North sensing gyrocompassing m/s	
1,227.00	6,357.00	Survey #2 - Intermediate SDI MWD Survey	MWD SDI	MWD - Standard ver 1.0.1	
6,442.00	12,480.00	Survey #1 - Lateral Survey (Lateral)	MWD SDI	MWD - Standard ver 1.0.1	

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)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	1.76	181.38	199.97	-3.07	-0.07	3.06	0.88	0.88	0.00	
400.00	2.36	184.99	399.84	-10.24	-0.51	10.23	0.31	0.30	1.81	
600.00	1.93	180.92	599.70	-17.71	-0.92	17.69	0.23	-0.22	-2.04	
800.00	1.52	204.77	799.61	-23.49	-2.08	23.57	0.41	-0.21	11.93	
1,000.00	2.09	224.64	999.51	-28.49	-5.76	28.99	0.42	0.29	9.94	
1,070.00	2.31	226.37	1,069.46	-30.37	-7.68	31.10	0.33	0.31	2.47	
1,227.00	2.56	220.66	1,226.32	-35.22	-12.25	36.47	0.22	0.16	-3.64	
1,322.00	0.95	211.90	1,321.27	-37.50	-14.05	38.96	1.71	-1.69	-9.22	

Scientific Drilling International

Survey Report

Company:	Quicksilver Resources, Inc.	Local Co-ordinate Reference:	Well Bret Grandbouche 24-02
Project:	Moffat County, CO NAD83	TVD Reference:	GL 6634' & KB 16' @ 6650.00ft (DHS 6)
Site:	Bret Grandbouche	MD Reference:	GL 6634' & KB 16' @ 6650.00ft (DHS 6)
Well:	Bret Grandbouche 24-02	North Reference:	True
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Lateral	Database:	Rockies Compass Server

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)	
1,416.00	0.93	58.36	1,415.27	-37.76	-13.81	39.19	1.95	-0.02	-163.34	
1,511.00	0.36	68.59	1,510.26	-37.24	-12.88	38.56	0.61	-0.60	10.77	
1,605.00	0.05	331.24	1,604.26	-37.10	-12.62	38.39	0.39	-0.33	-103.56	
1,699.00	0.29	306.21	1,698.26	-36.92	-12.83	38.24	0.26	0.26	-26.63	
1,794.00	0.43	289.71	1,793.26	-36.66	-13.36	38.04	0.18	0.15	-17.37	
1,888.00	0.87	285.65	1,887.25	-36.35	-14.38	37.86	0.47	0.47	-4.32	
1,982.00	0.30	144.02	1,981.25	-36.36	-14.93	37.94	1.19	-0.61	-150.67	
2,076.00	0.75	212.99	2,075.24	-37.07	-15.12	38.67	0.75	0.48	73.37	
2,171.00	1.16	353.86	2,170.24	-36.64	-15.56	38.29	1.90	0.43	148.28	
2,265.00	0.81	329.30	2,264.22	-35.12	-16.00	36.84	0.58	-0.37	-26.13	
2,358.00	1.66	28.97	2,357.20	-33.38	-15.68	35.07	1.54	0.91	64.16	
2,453.00	1.56	22.09	2,452.17	-30.97	-14.53	32.55	0.23	-0.11	-7.24	
2,547.00	1.48	341.49	2,546.14	-28.64	-14.43	30.22	1.12	-0.09	-43.19	
2,642.00	1.32	332.08	2,641.11	-26.51	-15.33	28.22	0.29	-0.17	-9.91	
2,735.00	0.76	350.43	2,734.09	-24.95	-15.94	26.75	0.69	-0.60	19.73	
2,829.00	0.20	349.71	2,828.09	-24.18	-16.07	25.99	0.60	-0.60	-0.77	
2,924.00	0.50	318.63	2,923.09	-23.70	-16.38	25.56	0.36	0.32	-32.72	
3,018.00	0.76	294.02	3,017.08	-23.14	-17.22	25.11	0.39	0.28	-26.18	
3,111.00	0.74	24.16	3,110.08	-22.34	-17.53	24.36	1.14	-0.02	96.92	
3,206.00	0.69	12.48	3,205.07	-21.22	-17.16	23.20	0.16	-0.05	-12.29	
3,300.00	0.79	317.79	3,299.06	-20.19	-17.47	22.22	0.73	0.11	-58.18	
3,394.00	0.10	36.14	3,393.06	-19.64	-17.86	21.72	0.83	-0.73	83.35	
3,489.00	0.34	286.10	3,488.06	-19.50	-18.08	21.61	0.41	0.25	-115.83	
3,583.00	0.57	275.59	3,582.06	-19.38	-18.81	21.58	0.26	0.24	-11.18	
3,677.00	0.78	272.13	3,676.05	-19.31	-19.92	21.64	0.23	0.22	-3.68	
3,771.00	0.82	71.59	3,770.05	-19.07	-19.92	21.41	1.67	0.04	169.64	
3,866.00	0.38	63.25	3,865.04	-18.71	-18.99	20.94	0.47	-0.46	-8.78	
3,960.00	0.10	346.24	3,959.04	-18.49	-18.73	20.69	0.39	-0.30	-81.93	
4,054.00	0.50	291.44	4,053.04	-18.26	-19.14	20.51	0.48	0.43	-58.30	
4,148.00	1.54	115.92	4,147.03	-18.67	-18.38	20.82	2.17	1.11	-186.72	
4,242.00	0.86	125.28	4,241.01	-19.63	-16.67	21.56	0.75	-0.72	9.96	
4,336.00	0.32	156.26	4,335.00	-20.27	-15.99	22.11	0.65	-0.57	32.96	
4,430.00	0.29	231.87	4,429.00	-20.66	-16.07	22.51	0.40	-0.03	80.44	
4,525.00	0.75	270.46	4,524.00	-20.80	-16.88	22.75	0.58	0.48	40.62	
4,619.00	0.49	50.25	4,618.00	-20.54	-17.19	22.53	1.24	-0.28	148.71	
4,713.00	0.38	353.64	4,711.99	-19.98	-16.91	21.93	0.45	-0.12	-60.22	
4,808.00	0.71	326.70	4,806.99	-19.17	-17.27	21.18	0.43	0.35	-28.36	
4,902.00	1.30	73.11	4,900.98	-18.37	-16.57	20.30	1.75	0.63	113.20	
4,996.00	0.81	53.65	4,994.96	-17.67	-15.01	19.41	0.64	-0.52	-20.70	
5,091.00	0.60	355.86	5,089.96	-16.78	-14.51	18.46	0.74	-0.22	-60.83	
5,185.00	1.02	316.85	5,183.95	-15.67	-15.12	17.44	0.71	0.45	-41.50	
5,280.00	0.36	341.44	5,278.94	-14.77	-15.79	16.63	0.75	-0.69	25.88	
5,374.00	0.78	10.52	5,372.94	-13.87	-15.77	15.73	0.53	0.45	30.94	

Scientific Drilling International

Survey Report

Company:	Quicksilver Resources, Inc.	Local Co-ordinate Reference:	Well Bret Grandbouche 24-02
Project:	Moffat County, CO NAD83	TVD Reference:	GL 6634' & KB 16' @ 6650.00ft (DHS 6)
Site:	Bret Grandbouche	MD Reference:	GL 6634' & KB 16' @ 6650.00ft (DHS 6)
Well:	Bret Grandbouche 24-02	North Reference:	True
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Lateral	Database:	Rockies Compass Server

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)	
5,468.00	0.96	305.17	5,466.93	-12.78	-16.29	14.72	1.01	0.19	-69.52	
5,563.00	0.64	179.71	5,561.92	-12.86	-16.94	14.87	1.50	-0.34	-132.06	
5,657.00	1.05	236.24	5,655.91	-13.86	-17.66	15.96	0.93	0.44	60.14	
5,751.00	1.22	343.67	5,749.90	-13.38	-18.65	15.60	1.95	0.18	114.29	
5,845.00	2.36	297.49	5,843.86	-11.52	-20.65	14.01	1.86	1.21	-49.13	
5,940.00	2.49	314.23	5,938.78	-9.18	-23.87	12.09	0.76	0.14	17.62	
6,034.00	1.05	14.43	6,032.74	-6.92	-25.11	10.01	2.31	-1.53	64.04	
6,128.00	1.98	69.58	6,126.71	-5.52	-23.38	8.40	1.73	0.99	58.67	
6,222.00	1.39	61.24	6,220.67	-4.41	-20.86	6.98	0.68	-0.63	-8.87	
6,316.00	2.03	53.78	6,314.62	-2.87	-18.51	5.17	0.72	0.68	-7.94	
6,357.00	2.19	57.72	6,355.60	-2.03	-17.27	4.17	0.53	0.39	9.61	
6,442.00	1.66	48.30	6,440.55	-0.34	-14.97	2.21	0.72	-0.62	-11.08	
First Lateral MWD Survey										
6,558.00	2.08	119.97	6,556.50	-0.27	-11.89	1.76	1.91	0.36	61.78	
6,573.00	2.08	123.83	6,571.49	-0.56	-11.43	1.99	0.93	0.00	25.73	
6,602.00	2.24	132.44	6,600.47	-1.24	-10.58	2.55	1.25	0.55	29.69	
6,634.00	1.99	133.33	6,632.45	-2.04	-9.71	3.24	0.79	-0.78	2.78	
6,665.00	1.74	139.62	6,663.43	-2.77	-9.01	3.87	1.04	-0.81	20.29	
6,728.00	1.56	148.70	6,726.40	-4.23	-7.95	5.19	0.50	-0.29	14.41	
6,760.00	1.02	264.18	6,758.40	-4.63	-8.01	5.60	6.88	-1.69	360.88	
6,791.00	3.87	300.83	6,789.37	-4.12	-9.18	5.24	10.04	9.19	118.23	
6,822.00	3.91	296.79	6,820.30	-3.11	-11.02	4.46	0.89	0.13	-13.03	
6,854.00	5.38	248.79	6,852.20	-3.16	-13.40	4.81	12.52	4.59	-150.00	
6,885.00	7.43	218.91	6,883.02	-5.25	-16.01	7.21	12.41	6.61	-96.39	
6,917.00	10.02	213.02	6,914.64	-9.19	-18.83	11.47	8.55	8.09	-18.41	
6,948.00	11.69	201.26	6,945.09	-14.38	-21.44	16.95	8.92	5.39	-37.94	
6,980.00	14.17	190.06	6,976.28	-21.26	-23.30	24.01	10.98	7.75	-35.00	
7,011.00	17.34	183.03	7,006.12	-29.61	-24.20	32.41	11.92	10.23	-22.68	
7,042.00	20.64	181.19	7,035.43	-39.69	-24.56	42.45	10.82	10.65	-5.94	
7,074.00	22.54	182.63	7,065.18	-51.46	-24.96	54.18	6.16	5.94	4.50	
7,105.00	23.36	182.07	7,093.73	-63.54	-25.45	66.22	2.74	2.65	-1.81	
7,137.00	24.69	182.14	7,122.95	-76.56	-25.93	79.20	4.16	4.16	0.22	
7,168.00	27.33	182.50	7,150.81	-90.14	-26.49	92.74	8.53	8.52	1.16	
7,200.00	29.92	183.51	7,178.90	-105.44	-27.29	108.03	8.23	8.09	3.16	
7,231.00	32.81	184.34	7,205.37	-121.54	-28.40	124.14	9.43	9.32	2.68	
7,262.00	35.89	184.20	7,230.96	-138.98	-29.71	141.60	9.94	9.94	-0.45	
7,294.00	39.04	183.01	7,256.35	-158.40	-30.92	161.03	10.10	9.84	-3.72	
7,325.00	42.56	182.40	7,279.82	-178.63	-31.87	181.22	11.43	11.35	-1.97	
7,357.00	46.31	182.72	7,302.66	-201.01	-32.88	203.54	11.74	11.72	1.00	
7,388.00	50.10	184.18	7,323.32	-224.07	-34.28	226.60	12.72	12.23	4.71	
7,419.00	53.58	185.82	7,342.47	-248.35	-36.41	250.95	11.97	11.23	5.29	
7,451.00	55.38	187.31	7,361.06	-274.22	-39.39	277.00	6.78	5.63	4.66	
7,483.00	59.25	187.03	7,378.34	-300.94	-42.75	303.92	12.12	12.09	-0.88	
7,514.00	63.04	186.53	7,393.30	-327.90	-45.95	331.07	12.31	12.23	-1.61	

Scientific Drilling International

Survey Report

Company:	Quicksilver Resources, Inc.	Local Co-ordinate Reference:	Well Bret Grandbouche 24-02
Project:	Moffat County, CO NAD83	TVD Reference:	GL 6634' & KB 16' @ 6650.00ft (DHS 6)
Site:	Bret Grandbouche	MD Reference:	GL 6634' & KB 16' @ 6650.00ft (DHS 6)
Well:	Bret Grandbouche 24-02	North Reference:	True
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Lateral	Database:	Rockies Compass Server

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)
7,545.00	67.00	186.51	7,406.39	-355.81	-49.14	359.16	12.77	12.77	-0.06
7,577.00	70.18	186.69	7,418.07	-385.40	-52.57	388.95	9.95	9.94	0.56
7,608.00	70.75	186.59	7,428.43	-414.42	-55.94	418.16	1.86	1.84	-0.32
7,639.00	73.25	186.51	7,438.01	-443.71	-59.31	447.64	8.07	8.06	-0.26
7,670.00	76.88	186.81	7,446.00	-473.45	-62.78	477.59	11.75	11.71	0.97
7,702.00	80.46	186.83	7,452.28	-504.60	-66.51	508.96	11.19	11.19	0.06
7,733.00	83.86	186.67	7,456.51	-535.09	-70.11	539.66	10.98	10.97	-0.52
7,765.00	87.38	187.02	7,458.96	-566.77	-73.92	571.56	11.05	11.00	1.09
7,796.00	86.13	186.87	7,460.71	-597.49	-77.66	602.51	4.06	-4.03	-0.48
7,828.00	88.32	187.34	7,462.26	-629.21	-81.61	634.47	7.00	6.84	1.47
7,859.00	91.21	188.02	7,462.39	-659.92	-85.75	665.47	9.58	9.32	2.19
7,891.00	91.68	188.26	7,461.58	-691.59	-90.28	697.45	1.65	1.47	0.75
7,922.00	90.74	187.42	7,460.92	-722.29	-94.51	728.44	4.07	-3.03	-2.71
7,953.00	89.23	186.68	7,460.93	-753.06	-98.32	759.44	5.42	-4.87	-2.39
7,985.00	87.08	187.08	7,461.96	-784.81	-102.15	791.42	6.83	-6.72	1.25
8,016.00	85.80	187.33	7,463.89	-815.51	-106.03	822.36	4.21	-4.13	0.81
8,048.00	85.93	187.22	7,466.20	-847.17	-110.07	854.28	0.53	0.41	-0.34
8,079.00	86.16	187.44	7,468.33	-877.84	-114.02	885.21	1.03	0.74	0.71
8,111.00	86.26	187.49	7,470.45	-909.50	-118.16	917.14	0.35	0.31	0.16
8,142.00	86.20	187.94	7,472.49	-940.15	-122.32	948.07	1.46	-0.19	1.45
8,173.00	86.30	188.12	7,474.51	-970.78	-126.64	979.00	0.66	0.32	0.58
8,205.00	86.90	187.82	7,476.41	-1,002.42	-131.07	1,010.94	2.10	1.88	-0.94
8,236.00	87.68	188.00	7,477.88	-1,033.09	-135.33	1,041.90	2.58	2.52	0.58
8,267.00	88.18	187.91	7,479.00	-1,063.77	-139.62	1,072.88	1.64	1.61	-0.29
8,299.00	89.80	188.39	7,479.56	-1,095.44	-144.15	1,104.87	5.28	5.06	1.50
8,391.00	90.34	188.52	7,479.45	-1,186.44	-157.68	1,196.84	0.60	0.59	0.14
8,484.00	90.34	188.91	7,478.90	-1,278.36	-171.77	1,289.81	0.42	0.00	0.42
8,578.00	90.30	189.79	7,478.37	-1,371.11	-187.04	1,383.74	0.94	-0.04	0.94
8,670.00	89.43	188.06	7,478.59	-1,461.99	-201.31	1,475.69	2.10	-0.95	-1.88
8,763.00	89.23	186.13	7,479.68	-1,554.27	-212.80	1,568.68	2.09	-0.22	-2.08
8,854.00	89.29	186.96	7,480.85	-1,644.67	-223.17	1,659.67	0.91	0.07	0.91
8,946.00	90.64	187.21	7,480.91	-1,735.96	-234.52	1,751.66	1.49	1.47	0.27
9,038.00	91.18	187.53	7,479.45	-1,827.19	-246.32	1,843.65	0.68	0.59	0.35
9,131.00	89.80	187.80	7,478.65	-1,919.36	-258.72	1,936.64	1.51	-1.48	0.29
9,223.00	89.16	186.81	7,479.49	-2,010.60	-270.42	2,028.64	1.28	-0.70	-1.08
9,319.00	89.29	186.22	7,480.79	-2,105.97	-281.31	2,124.62	0.63	0.14	-0.61
9,413.00	89.23	187.36	7,482.00	-2,199.31	-292.42	2,218.61	1.21	-0.06	1.21
9,507.00	89.63	186.37	7,482.93	-2,292.63	-303.66	2,312.60	1.14	0.43	-1.05
9,601.00	89.66	186.81	7,483.52	-2,386.00	-314.44	2,406.59	0.47	0.03	0.47
9,696.00	90.20	185.80	7,483.63	-2,480.43	-324.88	2,501.58	1.21	0.57	-1.06
9,790.00	90.07	186.32	7,483.41	-2,573.90	-334.80	2,595.56	0.57	-0.14	0.55
9,885.00	89.63	186.83	7,483.66	-2,668.28	-345.68	2,690.56	0.71	-0.46	0.54
9,979.00	92.19	185.13	7,482.17	-2,761.74	-355.47	2,784.51	3.27	2.72	-1.81

Scientific Drilling International

Survey Report

Company:	Quicksilver Resources, Inc.	Local Co-ordinate Reference:	Well Bret Grandbouche 24-02
Project:	Moffat County, CO NAD83	TVD Reference:	GL 6634' & KB 16' @ 6650.00ft (DHS 6)
Site:	Bret Grandbouche	MD Reference:	GL 6634' & KB 16' @ 6650.00ft (DHS 6)
Well:	Bret Grandbouche 24-02	North Reference:	True
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Lateral	Database:	Rockies Compass Server

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)
10,073.00	92.12	185.51	7,478.63	-2,855.27	-364.18	2,878.40	0.41	-0.07	0.40
10,167.00	92.59	186.18	7,474.77	-2,948.70	-373.74	2,972.29	0.87	0.50	0.71
10,261.00	89.80	185.47	7,472.81	-3,042.19	-383.28	3,066.23	3.06	-2.97	-0.76
10,355.00	89.73	186.31	7,473.20	-3,135.69	-392.93	3,160.21	0.90	-0.07	0.89
10,449.00	89.09	186.28	7,474.16	-3,229.12	-403.23	3,254.19	0.68	-0.68	-0.03
10,543.00	90.44	187.48	7,474.55	-3,322.43	-414.49	3,348.19	1.92	1.44	1.28
10,637.00	90.91	186.69	7,473.44	-3,415.71	-426.09	3,442.18	0.98	0.50	-0.84
10,732.00	89.13	185.03	7,473.41	-3,510.21	-435.78	3,537.15	2.56	-1.87	-1.75
10,826.00	87.89	184.50	7,475.85	-3,603.85	-443.59	3,631.03	1.43	-1.32	-0.56
10,920.00	89.36	185.58	7,478.11	-3,697.45	-451.84	3,724.93	1.94	1.56	1.15
11,015.00	87.55	184.94	7,480.67	-3,792.01	-460.55	3,819.84	2.02	-1.91	-0.67
11,109.00	89.50	185.61	7,483.09	-3,885.58	-469.19	3,913.75	2.19	2.07	0.71
11,203.00	90.07	186.30	7,483.44	-3,979.07	-478.94	4,007.73	0.95	0.61	0.73
11,298.00	89.63	187.13	7,483.69	-4,073.42	-490.05	4,102.72	0.99	-0.46	0.87
11,392.00	90.27	188.01	7,483.77	-4,166.60	-502.43	4,196.72	1.16	0.68	0.94
11,486.00	90.84	189.27	7,482.86	-4,259.52	-516.55	4,290.68	1.47	0.61	1.34
11,580.00	90.64	190.07	7,481.65	-4,352.18	-532.34	4,384.59	0.88	-0.21	0.85
11,674.00	91.44	189.23	7,479.94	-4,444.83	-548.10	4,478.48	1.23	0.85	-0.89
11,768.00	92.76	188.79	7,476.50	-4,537.61	-562.81	4,572.37	1.48	1.40	-0.47
11,862.00	90.34	189.01	7,473.95	-4,630.43	-577.34	4,666.28	2.59	-2.57	0.23
11,956.00	90.20	189.10	7,473.51	-4,723.26	-592.14	4,760.23	0.18	-0.15	0.10
12,050.00	89.23	189.22	7,473.98	-4,816.06	-607.10	4,854.18	1.04	-1.03	0.13
12,144.00	89.56	188.35	7,474.97	-4,908.95	-621.46	4,948.13	0.99	0.35	-0.93
12,238.00	89.87	187.36	7,475.44	-5,002.07	-634.30	5,042.12	1.10	0.33	-1.05
12,332.00	90.13	188.72	7,475.44	-5,095.14	-647.45	5,136.11	1.47	0.28	1.45
12,433.00	90.17	189.44	7,475.18	-5,194.87	-663.39	5,237.05	0.71	0.04	0.71
Last Lateral MWD Survey									
12,480.00	90.17	189.44	7,475.04	-5,241.24	-671.10	5,284.02	0.00	0.00	0.00
Projection To TD									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
6,442.00	6,440.55	-0.34	-14.97	First Lateral MWD Survey
12,433.00	7,475.18	-5,194.87	-663.39	Last Lateral MWD Survey
12,480.00	7,475.04	-5,241.24	-671.10	Projection To TD

Checked By: _____ Approved By: _____ Date: _____