



**COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OIL AND GAS MANAGEMENT PROGRAM**

DEP USE ONLY	
Site Id	Primary Facility Id
Client Id	Sub-facility Id

## WELL RECORD AND COMPLETION REPORT

Well Operator <b>Range Resources – Appalachia, LLC</b>		DEP ID# <b>141142</b>	Well API # (Permit / Reg) <b>37-125-23887</b>	Project Number	Acres <b>253</b>
Address <b>380 Southpointe Blvd. Suite 300</b>			Well Farm Name <b>Miller John Unit</b>	Well # <b>8H</b>	Serial #
City <b>Canonsburg</b>	State <b>PA</b>	Zip Code <b>15317</b>	County <b>Washington</b>	Municipality <b>Canton</b>	
Phone <b>724-743-6700</b>	Fax <b>724-743-6790</b>	USGS 7.5 min. quadrangle map <b>Washington</b>			

**Check all that apply:**  Original Well Record     Original Completion Report     Amended Well Record     Amended Completion Report

### WELL RECORD Also complete Log of Formations on back (page 2)

<b>Well Type</b>	<input checked="" type="checkbox"/> Gas <input type="checkbox"/> Oil <input type="checkbox"/> Combination Oil & Gas <input type="checkbox"/> Injection <input type="checkbox"/> Storage <input type="checkbox"/> Disposal			
<b>Drilling Method</b>	<input type="checkbox"/> Rotary – Air <input checked="" type="checkbox"/> Rotary – Mud <input type="checkbox"/> Cable Tool			
Date Drilling Started <b>1/4/2010</b>	Date Drilling Completed <b>9/13/2010</b>	Surface Elevation <b>1238 ft.</b>	Total Depth – Driller <b>10280 ft</b>	Total Depth - Logger <b>10280 ft</b>

#### Casing and Tubing

Cement returned on surface casing?  Yes     No  
Cement returned on coal protective casing?  Yes     No     N/A

Hole Size	Pipe Size	Wt.	Thread / Weld	Amount in Well (ft)	Material Behind Pipe Type and Amount	Packer / Hardware / Centralizers Type    Size    Depth	Date Run
30"	26"	106#	Thread	40'	Driven	----    26"    40'	1/4/10
22"	20"	81#	Thread	242'	Class A GB, 320 sx	GS    20"    242'	1/8/10
17-1/2"	13-3/8"	48#	Thread	421'	Class A GB 315sks	GS    13-3/8"    421'	1/12/10
12-1/4"	9-5/8"	36#	Thread	2019'	Class A GB, 670 sx	GS    9-5/8"    2019'	3/15/10
8-3/4"	5-1/2"	20#	Thread	10278'	Extendacem 1409 sx	FS    5-1/2"    10278'	9/12/10
					Hal light 180 sx, fraccem 359 sx		

### COMPLETION REPORT

#### Perforation Record

#### Stimulation Record

Date	Interval Perforated		Date	Interval Treated	Fluid		Propping Agent		Average Injection
	From	To			Type	Amount	Type	Amount	
11-2-2010	9,913	7,274	11-12-2010	Marcellus Shale	Water	64,355 bbl	Sand	4,037 Klb	65.6 bpm

Natural Open Flow	Too small to measure	Natural Rock Pressure	Too small to measure
After Treatment Open Flow	Omc/d @ 24hrs pos treatment	After Treatment Rock Pressure	N/A @ 24hrs post treatment    Hours    Days

**Well Service Companies** -- Provide the name, address, and phone number of all well service companies involved.

Name <b>Patterson UTI</b>	Name <b>Universal Well Services</b>	Name <b>Frac Tech</b>
Address <b>4501 Lamesa Highway</b>	Address <b>730 Braddock View Dr.</b>	Address <b>16858 IH20</b>
City - State - Zip <b>Snyder, TX 79549</b>	City - State - Zip <b>Mt. Braddock, PA 15465</b>	City - State - Zip <b>Cisco, TX 76437</b>
Phone <b>325-574-6300</b>	Phone <b>724-430-6201</b>	Phone <b>517-850-1008</b>

## LOG OF FORMATIONS

Well API#: 37-125-23887

Formation Name or Type	Top (feet)	Bottom (feet)	Gas at (feet)	Oil at (feet)	Water at (fresh / brine; ft.)	Source of Data
Fill	0'	30'				Drillers Log
Shale	30'	386'				Drillers Log
Coal	386'	395'				Drillers Log
Shale	395'	409'				Drillers Log
Sand	409'	991'				Drillers Log
Shale	991'	1230'				Drillers Log
Sand and Shale	1230'	1262'				Drillers Log
Redrock	1262'	1295'				Drillers Log
Redrock and Sand	1295'	1321'				Drillers Log
Sand and Shale	1321'	1387'				Drillers Log
Redrock	1387'	1450'				Drillers Log
Shale	1450'	1488'				Drillers Log
Sand and Shale	1488'	1516'				Drillers Log
Sand	1516'	1543'				Drillers Log
Sand, Shale, Redrock	1543'	1579'				Drillers Log
Sand/Redrock	1579'	1637'				Drillers Log
Sand/shale/redrock	1637'	1675'				Drillers Log
Sand/shale	1675'	1865'				Drillers Log
Shale	1865'	2105'				Drillers Log
Sand/Shale	2105'	2138'				Drillers Log
Shale	2138'	2437'				Drillers Log
Sand	2437'	2511'				Drillers Log
Shale	2511'	2610'				Drillers Log
Shale/sand	2610'	2742'				Drillers Log
Shale	2742'	6518'				Drillers Log
Limestone	6518'	6548'				Drillers Log
Shale	6548'	6683'				Drillers Log
Limestone	6683'	6690'				Drillers Log
Horizontal						
Shale	5600'	7270'				Drillers Log
Limestone	6740'	6880'				Drillers Log
Shale	6880'	7130'				Drillers Log
Drillers Total Depth		10180'				Drillers Log

*Please delete empty rows if necessary to make all of page 2 fit on one page.*

**Well Operator's Signature:**


12/13/2010  
 Title: \_\_\_\_\_ Date: 12-13-2010  
 Completion Engineer: Rodney Archibeque

**DEP USE ONLY**

Reviewed by: _____	Date: _____
Comments: _____	

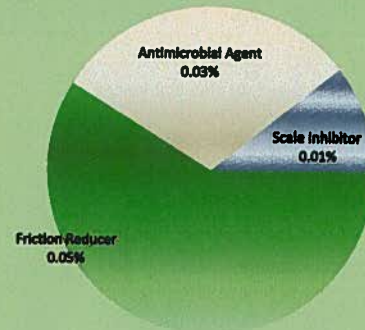
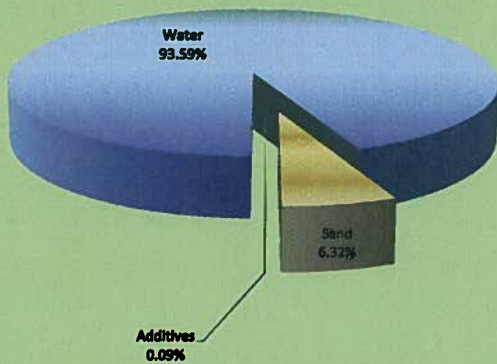


John Miller Unit #8H  
Well API: 37-125-23887

Completion Date: November 12th, 2010  
Township: Canton

% Composition of Hydraulic Fracture Fluid (by volume)						
Product Name	Additive	Purpose	Use and Dilution	Volume	Overall %	Common Uses
Water	Carrier Fluid	Creates fracture network in shale and carry proppant to the formation	Primary constituent	2,700,373 gal	93.59%	Water is the most abundant molecule on the Earth's surface
Sand	Sand	Allows fractures to remain open so gas can escape	Second most common constituent, making up almost 6% of the fluid	182,481 gal	6.32%	Drinking water filtration, play sand
FRW-200 & FRW-300	Friction Reducer	Reduces friction between fluid and pipe	Diluted at one-half gallon per 1,000 gallons of water	1,498 gal	0.05%	Water treatment; soil conditioner; some children's toys
MC B-8650/Bloban	Antimicrobial Agent	Eliminates bacteria in the water that produce corrosive byproducts	Diluted at one-half gallon per 1,000 gallons of water	0,775 gal	0.03%	Water treatment, disinfectant; sterilize medical and dental equipment and surfaces
MX 588-2	Scale Inhibitor	Prevents scaling in pipe	Diluted at one-tenth gallon per 1,000 gallons of water	272 gal	0.01%	Water treatment, household cleaners, de-icing agent

Composition of Hydraulic Fracture Fluid (by volume)





## Composition of Components in Marcellus Shale Hydraulic Fracturing Fluid

**RANGE RESOURCES**

Common Name & Supplier	Supplier Chemical Name	Common Description	Hazardous Component listed on MSDS	Purpose	MSDS Component Weight % of Chemical	Gallons MSDS Component in Well	Maximum Concentration of MSDS Component of Total Stage Fluid	
							% Vol	% Weight
Friction Reducer (FracTech)	RW-200 & FRW-30	Friction Reducer	No hazardous ingredients	Reduce friction down casing	0.0%	N/A	N/A	N/A

Scale Inhibitor (Multichem)	MX 588-2	Scale inhibitor	No hazardous ingredients	prevents scale deposits	0.0%	N/A	N/A	N/A
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Antibacterial Agent (Multichem)	Bioban	Antibacterial Agent	4,4-Dimethyloxazolidine	eliminates bacteria in water	78.0%	425.81	0.0148%	0.0134%
			3,4,4-Trimethyloxazolidine		5.0%	27.87	0.0010%	0.0009%
			2-Amino-2-methyl-1-propanol		1.0%	5.84	0.0002%	0.0002%
			Formaldehyde Amine		0.5%	2.54	0.0001%	0.0001%
	BMC B-8650	Antibacterial Agent	Glutaraldehyde	eliminates bacteria in water	50.0%	79.95	0.0028%	0.0038%
			Methanol		0.5%	0.80	0.0000%	0.0000%
<b>TOTAL</b>							<b>0.0188%</b>	<b>0.0183%</b>

<b>SUMMARY</b>	by vol %	by weight %
	<b>0.019%</b>	<b>0.018%</b>