



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

DEP USE ONLY	
Site ID	Primary Fac ID
Client Id	Subfacility Id

## Well Record and Completion Report

Well Operator Range Resources - Appalachia, LLC		DEP ID# 141142	Well API # (Permit / Reg) <b>37125-23942</b>		Project Number	Acres 503
Address 380 Southpointe Blvd, Suite 300			Well Farm Name Troyer Space Management		Well # 11H	Serial #
City Canonsburg	State PA	Zip Code 15317	County Washington	Municipality Cecil		
Phone 724-743-6700	Fax 724-743-6790	USGS 7.5 min. quadrangle map Canonsburg				
Check all that apply: <input checked="" type="checkbox"/> Original Well Record <input checked="" type="checkbox"/> Original Completion Report <input type="checkbox"/> Amended Well Record <input type="checkbox"/> Amended Completion Report						

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

Well Type		<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					
Drilling Method		<input checked="" type="checkbox"/> Rotary - Air <input checked="" type="checkbox"/> Rotary - Mud <input type="checkbox"/> Cable Tool					
Date Drilling Started 1/14/2010	Date Drilling Completed 7/1/2010	Surface Elevation 1102 ft.	Total Depth - Driller 11345 ft.	Total Depth - Logger 11345 ft.			
Casing and Tubing			Cement returned on surface casing? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Cement returned on coal protective casing? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> 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"	108#	Thread	40'	Driven	- 26" 40'	1/14/10
24"	20"	81.3#	Thread	254'	Class A GB 276 sx	GS 20" 254'	3/4/10
17-1/2"	13-3/8"	48#	Thread	420'	Class A GB 300 sx	GS 13-3/8" 420'	3/6/10
12-1/4"	9-5/8"	36#	Thread	1800'	Class A GB 585 sx	GS 9-5/8" 1800'	3/8/10
8-3/4"	5-1/2"	20#	Thread	11321'	Extendacem, 880 sx	FS 5-1/2" 11321'	7/1/10
Hal Light, 550 sx, Fraccem 410 sx							

### COMPLETION REPORT

Perforation Record			Stimulation Record							
Date	Interval Perforated From	To	Date	Interval Treated	Fluid Type Amount		Propping Agent Type Amount		Average Injection Rate	
1/20/2011	11,188'MD	7,723'MD	2/5/2011	Marcellus Shale	Slick H2O	84,772bbl	Sand	3,624Klb	65.7bpm	
Natural Open Flow			Too small to measure		Natural Rock Pressure		Too small to measure		Hours	Days
After Treatment Open Flow			Omcfd@24 hrs post treatment		After Treatment Rock Pressure		NA@24hr postfrac		Hours	Days

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

Name Patterson UTI	Name Universal Well Services	Name Frac Tech
Address 4501 Lamesa Highway	Address 730 Braddock View Dr	Address 16858 IH20
City - State - Zip Snyder, TX 79549	City - State - Zip Mt. Braddock, PA 15465	City - State - Zip Cisco, TX 76437
Phone -325-574-6300	Phone 724-430-6201	Phone 817-850-1008

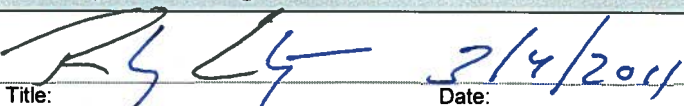
## LOG OF FORMATIONS

Well API#: 37-125-23942-

*(If you will need more space than this page, please photocopy the blank form before filling it in.)*

Formation Name or Type	Top (feet)	Bottom (feet)	Gas at (feet)	Oil at (feet)	Water at (fresh / brine; ft.)	Source of Data
Fill	0'	40'				Drillers Log
Sandy Shale	40'	265'				Drillers Log
Red Rock	265'	274'				Drillers Log
Sandy Shale	274'	400'				Drillers Log
Red Rock	400'	417'				Drillers Log
Sandy Shale	417'	602'				Drillers Log
Shale	602'	619'				Drillers Log
Sandy Shale	619'	780'				Drillers Log
Sand	780'	805'				Drillers Log
Sandy Shale	805'	1005'				Drillers Log
Sand	1005'	1020'				Drillers Log
Sandy Shale	1020'	1390'				Drillers Log
Sand	1390'	1800'				Drillers Log
Sandy Shale	1800'	2400'				Drillers Log
Shale	2400'	3140'				Drillers Log
Sandy Shale	3140'	5400'				Drillers Log
Shale	5400'	6277'				Drillers Log
Limestone	6277'	6400'				Drillers Log
Shale	6400'	6420'				Drillers Log
Limestone	6420'	6475'				Drillers Log
Shale	6475'	6585'				Drillers Log
Limestone	6585'	6595'				Drillers Log
Horizontal						
Shale	5600'	7100'				Drillers Log
Limestone	7100'	7410'				Drillers Log
Shale	7410'					Drillers Log
Drillers Total Depth		11345				Drillers Log

*I do hereby certify to the best of my knowledge, information and belief that the well identified on this Well Record and Completion Report has been properly cased and cemented in accordance with the requirements of 25 Pa. Code Chapter 78 and any conditions contained in the permit for this well. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.*

<b>Well Operator's Signature</b>	<b>DEP USE ONLY</b>
 Title: Completion Engineer: R Archibeque 3/4/2011 Date: 3/4/2011	Reviewed by: _____ Date: _____  Comments: _____

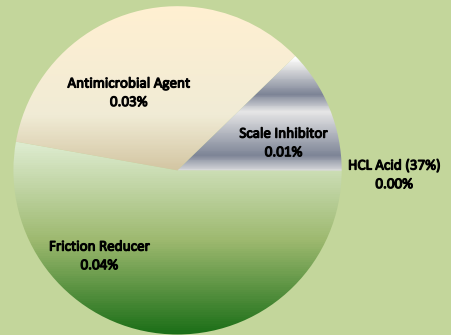
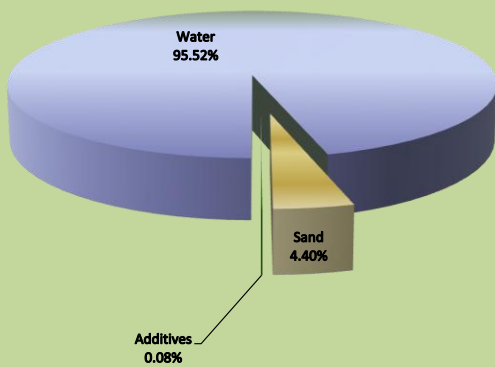


Troyer Space Management Unit 11H  
Well API: 37-125-23942

Completion Date: February 5, 2011  
Township: Cecil

% Composition of Hydraulic Fracture Fluid (by volume)						
Product Name	Additive	Purpose	Use and Dillution	Volume	Overall %	Common Uses
Water	Carrier Fluid	Creates fracture network in shale and carry proppant to the formation	Primary constituent	3,557,555 gal	95.52%	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	163,817 gal	4.40%	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	1,510 gal	0.04%	Water treatment; soil conditioner; some children's toys
MC B-8650/Bioban	Antimicrobial Agent	Eliminates bacteria in the water that produce corrosive byproducts	Diluted at one-half gallon per 1,000 gallons of water	1,000 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	352 gal	0.01%	Water treatment, household cleaners, de-icing agent
HCL Acid (37%)	Perf Clean-Up	Dissolves cement and minerals to help initiate fractures	177 gallons per stage if required (non-diluted chemicals)	0 gal	0.00%	Swimming pool and household cleaner

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	
7.5% HCl Mixture (FracTech)	37% HCL	concentrated HCl Acid	HCL	Cleans perforation	37.0%	0.00	0.0000%	0.0000%	
	CI-100	Corrosion Inhibitor	Methanol	Protects casing	95.0%	0.00	0.0000%	0.0000%	
			Propargyl Alcohol	Protects casing	5.0%	0.00	0.0000%	0.0000%	
	NE100	Non- Emulsifer	No hazardous ingredients	Prevents emulsions	0.0%	N/A	N/A	N/A	
FE100L	Iron Chelator	No hazardous ingredients	Prevents precipitation	0.0%	N/A	N/A	N/A	N/A	
<b>TOTAL</b>								<b>0.0000%</b>	<b>0.0000%</b>

<b>Friction Reducer (FracTech)</b>	RW-200 & FRW-30	Friction Reducer	No hazardous ingredients	Reduce friction down casing	0.0%	N/A	N/A	N/A
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<b>Scale Inhibitor (Multichem)</b>	MX 588-2	Scale Inhibitor	No hazardous ingredients	prevents scale deposits	0.0%	N/A	N/A	N/A
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<b>Antibacterial Agent (Multichem)</b>	Bioban	Antibacterial Agent	4,4-Dimethyloxazolidine	eliminates bacteria in water	78.0%	549.43	0.0148%	0.0138%	
			3,4,4-Trimethyloxazolodine		5.0%	35.96	0.0010%	0.0009%	
			2-Amino-2-methyl-1-propanol		1.0%	7.54	0.0002%	0.0002%	
			Formaldehyde Amine		0.5%	3.28	0.0001%	0.0001%	
	BMC B-8650	Antibacterial Agent	Glutaraldehyde	eliminates bacteria in water	50.0%	103.16	0.0028%	0.0039%	
			Methanol		0.5%	1.03	0.0000%	0.0000%	
<b>TOTAL</b>								<b>0.0188%</b>	<b>0.0189%</b>

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