



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) 37125-23972		Project Number	Acres 960
Address 380 Southpointe Blvd, Suite 300			Well Farm Name Chappel Unit		Well # 4H	Serial #
City Canonsburg	State PA	Zip Code 15317	County Washington	Municipality Hopewell		
Phone 724-743-6700	Fax 724-743-6790	USGS 7.5 min. quadrangle map Washington West				

Check all that apply: Original Well Record Original Completion Report Amended Well Record 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 type="checkbox"/> Rotary - Air	<input checked="" type="checkbox"/> Rotary - Mud	<input type="checkbox"/> Cable Tool						
Date Drilling Started 3/12/2010	Date Drilling Completed 9/22/2010	Surface Elevation 1140 ft.	Total Depth - Driller 10749 ft.	Total Depth - Logger 10749 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	35'	Driven	---	26"	35'	3/12/10
24"	20"	81#	Thread	252'	Uniblock, 300 sx	GS	20"	252'	3/24/10
12-1/4"	9-5/8"	36#	Thread	1840'	Uniblock, 850 sx	GS	9-5/8"	1840'	3/26/10
8 3/4"	5 1/2"	20#	Thread	10743'	Halliburton Light, lead 180 sx	FS	5 1/2"	10743'	9/22/10
					Halliburton light, 1390 sx				
					Fraccem 450 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
1/5/2011	10,514'MD	6,866'MD	1/18/2011	Marcellus Shale	Slick H2O	99,640 bbl	Sand	4,007 Klb	64.8bpm
Natural Open Flow			Too small to measure		Natural Rock Pressure	Too small to measure		Hours	Days
After Treatment Open Flow			Omc/d@24 hrs post treatment		After Treatment Rock Pressure	na@24hrs post treatment		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

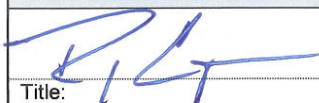
Phone 325-574-6300-	Phone 724-430-6201	Phone 817-850-1008
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LOG OF FORMATIONSWell API#: **37-125-23972-**_____*(If you will need more space than this page, please photocopy the blank form before filling it in.)*

Formation Name or Type	Top (feet)	Bottom (feet)	Gas at (feet)	Oil at (feet)	Water at (fresh / brine; ft.)	Source of Data
Fill	0'	75'				Drillers Log
Sand	75'	155'				Drillers Log
Sand and Shale	155'	185'				Drillers Log
Sand	185'	255'				Drillers Log
Shale	255'	335'				Drillers Log
Sand and Shale	335'	495'				Drillers Log
Shale	495'	585'				Drillers Log
Sand and Shale	585'	825'				Drillers Log
Shale	825'	1245'				Drillers Log
Sand and Shale	1245'	1275'				Drillers Log
Sand	1275'	1335'				Drillers Log
Sand and Shale	1335'	1695'				Drillers Log
Shale	1695'	3105'				Drillers Log
Sand and Shale	3105'	4260'				Drillers Log
Shale	4260'	4630'				Drillers Log
Sand and Shale	4630'	5390'				Drillers Log
Shale	5390'	6026'				Drillers Log
Horizontal						
Shale	5300'	6420'				Drillers Log
Limestone	6420'	6510'				Drillers Log
Shale	6510'					Drillers Log
Drillers Total Depth		10749'				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.

Well Operator's Signature


 Title: Completion Engineer: R Archibeque
 Date: 2/11/2011

DEP USE ONLY

Reviewed by:

Date:

Comments:



Chappel Unit #4H
Well API: 37-125-23972

Completion Date: January 19, 2011
Township: Hopewell

% 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	4,179,315 gal	95.72%	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	181,139 gal	4.15%	Drinking water filtration, play sand
FRW-300	Friction Reducer	Reduces friction between fluid and pipe	Diluted at one-half gallon per 1,000 gallons of water	2,419 gal	0.06%	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	1,196 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	425 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)	1507 gal	0.03%	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%	1506.51	0.0345%	0.0142%
	CI-100	Corrosion Inhibitor	Methanol	Protects casing	95.0%	17.54	0.0004%	0.0003%
			Propargyl Alcohol	Protects casing	5.0%	0.75	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
TOTAL							0.0349%	0.0145%

Friction Reducer (FracTech)	FRW-300	Friction Reducer	No hazardous ingredients	Reduce friction down casing	0.0%	N/A	N/A	N/A
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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%	657.12	0.0151%	0.0141%
			3,4,4-Trimethyloxazolidine		5.0%	43.01	0.0010%	0.0009%
			2-Amino-2-methyl-1-propanol		1.0%	9.01	0.0002%	0.0002%
			Formaldehyde Amine		0.5%	3.92	0.0001%	0.0001%
	BMC B-8650	Antibacterial Agent	Glutaraldehyde	eliminates bacteria in water	50.0%	123.38	0.0028%	0.0040%
		Methanol	0.5%		1.23	0.0000%	0.0000%	
TOTAL							0.0192%	0.0193%

SUMMARY	by vol %	by weight %
	0.054%	0.034%