



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

Completion Report


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

| Well Information | | | | | |
|--|---------------------|--|--|--------------------------|--|
| If you are submitting this Completion Report attached to the Well Record, you only need to enter the well API # in this section. | | | | | |
| Well Operator Range Resources-Appalachia,LLC | DEP ID# 141142 | Well API # (Permit / Reg) 37 - 081-20220- - | Project Number | Acres 230 | |
| Address 380 Southpointe Blvd, Suite 300 | | Well Farm Name Dog Run Hunting Club Unit | Well # 2H | Serial # | |
| City Canonsburg | State PA | Zip Code 15317 | County Lycoming | Municipality Cummings | |
| Phone 817 869-4158 | Fax 817 869-1458 | Email mdennis@rangeresources.com | USGS 7.5 min. quadrangle map Waterville | | |
| Check the appropriate submission: <input type="checkbox"/> Original Completion Report <input type="checkbox"/> Amended Completion Report | | | | | |

| STIMULATION BASE FLUID | | |
|--|------------------------------|-------------------|
| List Water Management Plan Approved Water Source(s) that were used | Water Management Plan ID No. | Volume (Gallons) |
| 1. Jersey Shore Joint Water Authority | PADWIS ID# 4410156 | 1,299,155 |
| 2. Borough of Montoursville | PADWIS ID# 4175501 | 996,259 |
| 3. Williamsport Municipal Authority | PADWIS ID# 4189510 | 1,218,012 |
| 4. | | |
| 5. | | |
| 6. | | |
| Recycled Water Used | | |
| Other Base Fluid(s)Components Used | | |
| 1. | | |
| 2. | | |
| Total Base Fluid(s)/Components Used | | 3,513,426 gallons |

| PERFORATION RECORD | | | | | |
|--------------------|------------------|-----------------------|---------------------|---|-----------------|
| Stage No. | Perforation Date | Stage Perforated From | Stage Perforated To | Perf. Orientation (Vertical, Horizontal, Radial) | Formation |
| 1 | 3/10/2011 | 11,373'MD | 11,173'MD | Horizontal | Marcellus Shale |
| 2 | 3/11/2011 | 11,073'MD | 10,873'MD | Horizontal | Marcellus Shale |
| 3 | 3/12/2011 | 10,773'MD | 10,573'MD | Horizontal | Marcellus Shale |
| 4 | 3/14/2011 | 10,473'MD | 10,273'MD | Horizontal | Marcellus Shale |
| 5 | 3/22/2011 | 10,173'MD | 9,973'MD | Horizontal | Marcellus Shale |
| 6 | 3/22/2011 | 9,873'MD | 9,673'MD | Horizontal | Marcellus Shale |
| 7 | 3/24/2011 | 9,573'MD | 9,373'MD | Horizontal | Marcellus Shale |
| 8 | 3/25/2011 | 9,273'MD | 9,073'MD | Horizontal | Marcellus Shale |
| | | | | | |
| | | | | | |
| | | | | | |

| STIMULATION INFORMATION (WELL) | | | |
|---|--|--|----------------------------|
| Open Flow Production: 0mcf/d @ 24hrs pos treatment | 24 Hr. Open Flow Production: 0mcf/d @ 24hrs pos treatment | 24 Hr. Shut-in Pressure: N/A @ 24hrs post treatment | Flow Back Date: 4/11/11 |
| STIMULATION INFORMATION (STAGE) | | | |
| Complete a separate record for each stimulation stage. (Please insert additional copies of this page for additional stages). | | | |
| Stage No.: 1 | Stimulation Date: 3/10/2011 | Pump Rate: 69.6 | |
| Pressure (psi): 8,744 | Shut-in Surface Pressure: 5,110 | 5 Minute Shut-in Surface Pressure: NA | |
| Propping Agent Type: Sand | Propping Agent Amount: 501,470 | Propping Agent Size: 100 mesh/30-50 Mesh | |
| Stage No.: 2 | Stimulation Date: 3/12/2011 | Pump Rate: 64.9 | |
| Pressure (psi): 9,586 | Shut-in Surface Pressure: 5,907 | 5 Minute Shut-in Surface Pressure: NA | |
| Propping Agent Type: Sand | Propping Agent Amount: 505,147 | Propping Agent Size: 100 mesh/30-50 Mesh | |
| Stage No.: 3 | Stimulation Date: 3/13/2011 | Pump Rate: 68.8 | |
| Pressure (psi): 8,656 | Shut-in Surface Pressure: 4,114 | 5 Minute Shut-in Surface Pressure: NA | |
| Propping Agent Type: Sand | Propping Agent Amount: 504,492 | Propping Agent Size: 100 mesh/30-50 Mesh | |
| Stage No.: 4 | Stimulation Date: 3/22/2011 | Pump Rate: 70.2 | |
| Pressure (psi): 8,765 | Shut-in Surface Pressure: 5,317 | 5 Minute Shut-in Surface Pressure: NA | |
| Propping Agent Type: Sand | Propping Agent Amount: 501,774 | Propping Agent Size: 100 mesh/30-50 Mesh | |
| Stage No.: 5 | Stimulation Date: 3/23/2011 | Pump Rate: 71 | |
| Pressure (psi): 8,690 | Shut-in Surface Pressure: 5,540 | 5 Minute Shut-in Surface Pressure: NA | |
| Propping Agent Type: Sand | Propping Agent Amount: 504,623 | Propping Agent Size: 100 mesh/30-50 Mesh | |
| Stage No.: 6 | Stimulation Date: 3/24/2011 | Pump Rate: 67.8 | |
| Pressure (psi): 9,113 | Shut-in Surface Pressure: 5,596 | 5 Minute Shut-in Surface Pressure: NA | |
| Propping Agent Type: Sand | Propping Agent Amount: 504,551 | Propping Agent Size: 100 mesh/30-50 Mesh | |
| WELL SERVICE COMPANIES (Provide the name, address, and telephone number of all well service companies involved.) | | | |
| Name Frac Tech | Name Multi-Chem | Name Cased Hole Solutions, Inc. | |
| Address 16858 IH 20 | Address 2905 Southwest Blvd. | Address 1720 North Airport Rd. | |
| City - State - Zip Cisco, Texas 76437 | City - State - Zip San Angelo, Texas 76904 | City - State - Zip Weatherford, Oklahoma 73096 | |
| Phone 817 850-1008 | Phone 325 223-6200 | Phone 580 772-3100 | |
| <i>I do hereby certify to the best of my knowledge, information and belief that the information contained on this Completion Report is true and correct. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment..</i> | | | |
| Well Operator's Signature | | DEP USE ONLY | |
| | | Reviewed by: | Date: |
| Title: Regulatory Analyst | Date: 4/26/2011 | Comments: | |

| STIMULATION INFORMATION (WELL) | | | |
|--|---|--|----------------------------|
| Open Flow Production: Omcft/d @ 24hrs pos treatment | 24 Hr. Open Flow Production: Omcft/d @ 24hrs pos treatment | 24 Hr. Shut-in Pressure: N/A @ 24hrs post treatment | Flow Back Date: 4/11/11 |
| STIMULATION INFORMATION (STAGE) | | | |
| Complete a separate record for each stimulation stage. (Please insert additional copies of this page for additional stages). | | | |
| Stage No.: 7 | Stimulation Date: 3/26/2011 | Pump Rate: 70.1 | |
| Pressure (psi): 8619 | Shut-in Surface Pressure: 5,861 | 5 Minute Shut-in Surface Pressure: NA | |
| Propping Agent Type: Sand | Propping Agent Amount: 501,145 | Propping Agent Size: 100 mesh/30-50 Mesh | |
| Stage No.: 8 | Stimulation Date: 3/28/2011 | Pump Rate: 68.8 | |
| Pressure (psi): 8,382 | Shut-in Surface Pressure: 6,722 | 5 Minute Shut-in Surface Pressure: NA | |
| Propping Agent Type: Sand | Propping Agent Amount: 574,374 | Propping Agent Size: 100 mesh/30-50 Mesh | |
| Stage No.: | Stimulation Date: | Pump Rate: | |
| Pressure (psi): | Shut-in Surface Pressure: | 5 Minute Shut-in Surface Pressure: | |
| Propping Agent Type: | Propping Agent Amount: | Propping Agent Size: | |
| Stage No.: | Stimulation Date: | Pump Rate: | |
| Pressure (psi): | Shut-in Surface Pressure: | 5 Minute Shut-in Surface Pressure: | |
| Propping Agent Type: | Propping Agent Amount: | Propping Agent Size: | |
| Stage No.: | Stimulation Date: | Pump Rate: | |
| Pressure (psi): | Shut-in Surface Pressure: | 5 Minute Shut-in Surface Pressure: | |
| Propping Agent Type: | Propping Agent Amount: | Propping Agent Size: | |
| Stage No.: | Stimulation Date: | Pump Rate: | |
| Pressure (psi): | Shut-in Surface Pressure: | 5 Minute Shut-in Surface Pressure: | |
| Propping Agent Type: | Propping Agent Amount: | Propping Agent Size: | |
| WELL SERVICE COMPANIES (Provide the name, address, and telephone number of all well service companies involved.) | | | |
| Name Frac Tech | Name Multi-Chem | Name Cased Hole Solutions, Inc. | |
| Address 16858 IH 20 | Address 2905 Southwest Blvd. | Address 1720 North Airport Rd. | |
| City - State - Zip Cisco, Texas 76437 | City - State - Zip San Angelo, Texas 76904 | City - State - Zip Weatherford, Oklahoma 73096 | |
| Phone 817 850-1008 | Phone 325 223-6200 | Phone 580 772-3100 | |
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| Well Operator's Signature | | DEP USE ONLY | |
|  Title: Regulatory Analyst Date: 4/26/2011 | | Reviewed by: | Date: |
| | | Comments: | |

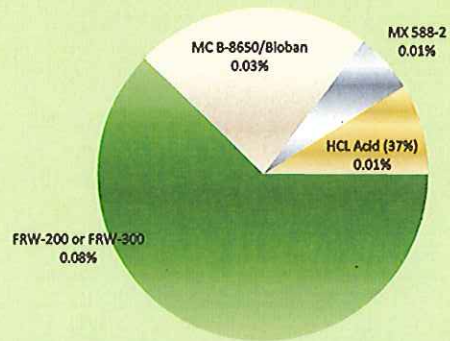
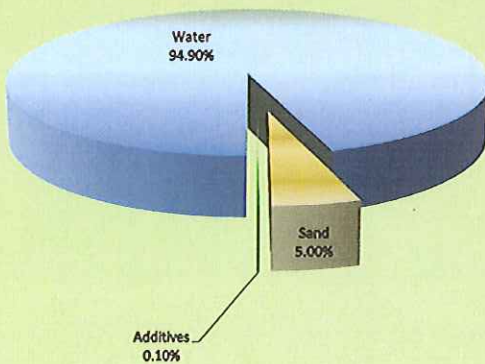


Dog Run Hunting Club Unit #2H
Well API: 37-081-20220

Completion Date: 3-28-11
Township: Cummings

| % 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 | 3,514,527 gal | 94.88% | 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 | 185,210 gal | 5.00% | Drinking water filtration, play sand |
| FRW-200 or FRW-300 | Friction Reducer | Reduces friction between fluid and pipe | Diluted at one-half gallon per 1,000 gallons of water | 2,780 gal | 0.08% | 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 | 1,030 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 | 0,262 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) | 0,399 gal | 0.01% | Swimming pool and household cleaner |

Composition of Hydraulic Fracture Fluid (by volume)





Composition of Components in Marcellus Shale Hydraulic Fracturing Fluid

RANGE RESOURCES

Dog Run Hunting Club Unit #2H
Well API: 37-081-20220

| 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% | 399.31 | 0.0108% | 0.0044% | |
| | CI-100 | Corrosion Inhibitor | Methanol | Protects casing | 95.0% | 33.01 | 0.0009% | 0.0007% | |
| | | | Propargyl Alcohol | Protects casing | 5.0% | 1.42 | 0.00004% | 0.00003% | |
| | 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 | | | | | | | | 0.0117% | 0.0051% |

| | | | | | | | | |
|-----------------------------|-----------------|------------------|--------------------------|-----------------------------|------|-----|-----|-----|
| Friction Reducer (FracTech) | RW-200 or FRW-3 | 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 |
|-----------------------------|----------|-----------------|--------------------------|-------------------------|------|-----|-----|-----|

| | | | | | | | | | |
|---------------------------------|------------|---------------------|-----------------------------|------------------------------|-------|----------|----------|----------------|----------------|
| Antibacterial Agent (Multichem) | Bioban | Antibacterial Agent | 4,4-Dimethyloxazolidine | eliminates bacteria in water | 78.0% | 565.91 | 0.0153% | 0.0142% | |
| | | | 3,4,4-Trimethyloxazolodine | | 5.0% | 37.04 | 0.0010% | 0.0009% | |
| | | | 2-Amino-2-methyl-1-propanol | | 1.0% | 7.76 | 0.0002% | 0.0002% | |
| | | | Formaldehyde Amine | | 0.5% | 3.38 | 0.0001% | 0.0001% | |
| | BMC B-8650 | Antibacterial Agent | Glutaraldehyde | eliminates bacteria in water | 50.0% | 106.26 | 0.0029% | 0.0040% | |
| | | | Methanol | 0.5% | 1.06 | 0.00003% | 0.00004% | | |
| TOTAL | | | | | | | | 0.0195% | 0.0194% |

| | | |
|----------------|---------------|---------------|
| SUMMARY | by vol % | by weight % |
| | 0.031% | 0.024% |