State of West Virginia
Department of Environmental Protection - Office of Oil and Gas Well Operator's Report of Well Work



Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug


WR-35
Rev. 8/23/13

| API 47-03 | 05933 | Farm name James T. Gamelli et al |  |  |  | Well number 203 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| CASING STRINGS | Hole Size | $\begin{aligned} & \text { Casing } \\ & \text { Size } \\ & \hline \end{aligned}$ | Depth | $\begin{aligned} & \text { New or } \\ & \text { Used } \end{aligned}$ | Grade <br> wtft | Basket <br> Depth(s) | Did cement circulate ( $\mathrm{Y} / \mathrm{N}$ ) <br> * Provide details below* |
| Conductor | 30" | 26" | 40' | New | 102.75 | NA | Y |
| Surface | 17 1/2" | $133 / 8^{\prime \prime}$ | 773' GL | New | 54.5 | 145' | Y |
| Coal | NA | NA | NA | NA | NA | NA | N |
| Intermediate 1 | $121 / 4^{\prime \prime}$ | $95 / 8^{\prime \prime}$ | 2,434' GL | New | 40.0 | NA | Y |
| Intermediate 2 | NA | NA | NA | NA | NA | NA | NA |
| Intermediate 3 | NA | NA | NA | NA | NA | NA | NA |
| Production | $81 / 2^{\prime \prime}$ | $51 / 2^{\prime \prime}$ | 21,983' GL | New | 23.0 | NA | N |
| Tubing | NA | NA | NA | NA | NA | NA | NA |
| Packer type and depth set |  | NA NA |  |  |  |  |  |

Comment Details Cement to surface on Conductor, Surface, and Intermediate. Top of Cement for Production string, 1,473'.

| CEMENT DATA | Class/Type of Cement | Number of Sacks | $\begin{gathered} \text { Slurry } \\ \text { wt (ppg) } \end{gathered}$ | $\begin{gathered} \text { Yield } \\ \left(\mathrm{ft}^{3} / \mathrm{sks}\right) \end{gathered}$ | Volume ( $\mathrm{ft}^{3}$ ) | $\begin{gathered} \text { Cement } \\ \text { Top (MD) } \end{gathered}$ | woc <br> (hrs) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conductor | A | 82 | 15.60 | 1.20 | 98.40 | Surface | $8+$ |
| Surface | A | 700 | 15.60 | 1.20 | 840 | Surface | 8+ |
| Coal | NA | NA | NA | NA | NA | NA | NA |
| Intermediate 1 | A | 753 | 15.70 | 1.29 | 971.37 | Surface | 8+ |
| Intermediate 2 | NA | NA | NA | NA | NA | NA | NA |
| Intermediate 3 | NA | NA | NA | NA | NA | NA | NA |
| Production | A | 800/2,958 | 14.20/15.00 | 1.24/1.29 | 992/3,815.82 | 1,473' | 8+ |
| Tubing | NA | NA | NA | NA | NA | NA | NA |

Drillers TD (ft) 21,995 (GL)
Loggers TD (ft) ${ }^{7,239^{\prime}(G L)}$
Deepest formation penetrated Marcellus
Plug back to (ft) 5,863
Plug back procedure Set 600' bottom plug (200sx, 50/50Poz, 2\% Gel, 10\% Salt). Bottom plug set 7,263 to 6,658 . Set top 600 ' plug (290sx, $50 / 50 \mathrm{Poz}, 2 \%$ Gell, $10 \%$ Salt). Top plug set from 6,563' to 5,863'.

Kick off depth ( ft ) ${ }^{6,644^{\prime}(\mathrm{GL})}$

| heck all wireline logs run | 院 caliper <br> 显neutron | - density Bresistivity | deviated/directional <br> gamma ray | induction |
| :---: | :---: | :---: | :---: | :---: |

Well cored $\square$ Yes $\quad$ No Sonventional Sidewall Were cuttings collected Yes $\square$ No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING $26^{\prime \prime}$ - No centralizers, 13 3/8"- one bow spring centralizer on every other joint, $95 / 8^{\circ}$ - one sempl rigid centralizer on every joint from TD of casing to end of curve. Then every other joint to KOP. Every third joint from KOP to $1,400^{\prime \prime}$; there will be no centralizers from $1,400^{\prime}$ to surface

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API 47-033 - 05933
Farm name James T. Gamelli et al
Well number 203
```


## PERFORATION RECORD

| Stage No. | Perforation date | Perforated from MD ft. | $\begin{aligned} & \text { Perforated to } \\ & \text { MD ft. } \end{aligned}$ | Number of Perforations | Formation(s) |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | See Attached |  |  |  |
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Please insert additional pages as applicable.

## STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

| No. | Stimulations Date | Ave Pump <br> Rate (BPM) | Ave Treatment <br> Pressure (PSI) | Max Breakdown Pressure (PSI) | ISIP (PSI) | Amount of Proppant (lbs) | Amount of Water (bbls) | Amount of Nitrogen/other (units) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | See Attached |  |  |  |  |  |
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Please insert additional pages as applicable.

| Perforations Date | Top (ftkB) | Btm (ftkB) | Entered Shot Total | Stage |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Formation |
|  | 6/7/2021 | 7,561.00 | 7.723.00 | 40 | 71 Marcellus |
|  | 67/2021 | 7,761.00 | 7,923.00 | 40 | 70 Marcellus |
|  | 6/7/2021 | 7,961.00 | 8,123.00 | 40 | 69 Marcellus |
|  | 6/7/2021 | 8,161.00 | 8,323.00 | 40 | 68 Marcellilus |
|  | 67/2021 | 8,361.00 | 8,523.00 | 40 | 67 Marcellus |
|  | 6/6/2021 | 8,561.00 | 8,723.00 | 40 | 66 Marcellus |
|  | 6/6/2021 | 8,761.00 | 8,923.00 | 40 | 65 Marcellus |
|  | 6/6/2021 | 8,961.00 | 9,123.00 | 40 | 64 Marcellus |
|  | 6/6/2021 | 9,161.00 | 9,323.00 | 40 | 63 Marcellus |
|  | 6/6/2021 | 9,361.00 | 9,523.00 | 40 | 62 Marcellus |
|  | 6/5/2021 | 9,561.00 | 9,723.00 | 40 | 61 Marcellus |
|  | 6/5/2021 | 9,761.00 | 9,923.00 | 40 | 60 Marcellius |
|  | 6/5/2021 | 9,961.00 | 10,123.00 | 40 | 59 Marcellus |
|  | 6/5/2021 | 10,161.00 | 10,323.00 | 40 | 58 Marcellus |
|  | 6/5/2021 | 10,361.00 | 10,523.00 | 40 | 57 Marcellus |
|  | 6/4/2021 | 10,561.00 | 10,723.00 | 40 | 56 Marcellus |
|  | 6/4/2021 | 10,761.00 | 10,923.00 | 40 | 55 Marcellus |
|  | 6/4/2021 | 10,961.00 | 11,123.00 | 40 | 54 Marcellus |
|  | 6/4/2021 | 11,161.00 | 11,323.00 | 40 | 53 Marcellus |
|  | 6/3/2021 | 11,361.00 | 11,523.00 | 40 | 52 Marcellus |
|  | 6/3/2021 | 11,561.00 | 11,723.00 | 40 | 51 Marcellus |
|  | 5/3/2021 | 11,761.00 | 11,923.00 | 40 | Marcellus |
|  | 6/3/2021 | 11,961.00 | 12,123.00 | 40 | 49 Marcellus |
|  | 6/3/2021 | 12,161.00 | 12,323.00 | 40 | 48 Marcellus |
|  | 5/31/2021 | 12,361.00 | 12,523.00 | 40 | 47 Marcellus |
|  | 5/30/2021 | 12,561.00 | 12,723.00 | 40 | 46 Marcellus |
|  | 5/30/2021 | 12,761.00 | 12,923.00 | 40 | 45 Marcellus |
|  | 5/30/2021 | 12,961.00 | 13,123.00 | 40 | 44 Marcellus |
|  | 5/30/2021 | 13,161.00 | 13,323.00 | 40 | 43 Marcellus |
|  | 5/29/2021 | 13,361.00 | 13,523.00 | 40 | 42 Marcellus |
|  | 5/29/2021 | 13,561.00 | 13,723.00 | 40 | 41 Marcellus |
|  | 5/29/2021 | 13,761.00 | 13,923.00 | 40 | 40 Marcellus |
|  | 5/28/2021 | 13,961.00 | 14,123.00 | 40 | 39 Marcellus |
|  | 5/28/2021 | 14,161.00 | 14,323.00 | 40 | 38 Marcellus |
|  | 5/28/2021 | 14,361.00 | 14,533.00 | 40 | 37 Marcellus |
|  | 5/28/2021 | 14,561.00 | 14,723.00 | 40 | 36 Marcellus |
|  | 5/27/2021 | 14,761.00 | 14,923.00 | 40 | 35 Marcellus |
|  | 5/27/2021 | 14,961.00 | 15,123.00 | 40 | 34 Marcellus |
|  | 5/27/2021 | 15,161.00 | 15,323.00 | 40 | 33 Marcellus |
|  | 5/27/2021 | 15,361.00 | 15,523.00 | 40 | 32 Marcellus |
|  | 5/26/2021 | 15,561.00 | 15,723.00 | 40 | 31. Marcellus |
|  | 5/26/2021 | 15,761.00 | 15,923.00 | 40 | 30 Marcellus |
|  | 5/26/2021 | 15,961.00 | 16,123.00 | 40 | 29 Marcellus |
|  | 5/26/2021 | 16,161.00 | 16,323.00 | 40 | 28 Marcellus |
|  | 5/25/2021 | 16,361.00 | 16,523.00 | 40 | 27 Marcellus |
|  | 5/25/2021 | 16,561.00 | 16,723.00 | 40 | 26 Marcellus |
|  | 5/25/2021 | 16,761.00 | 16,923.00 | 40 | 25 Marcellus |
|  | 5/25/2021 | 16,961.00 | 17,123.00 | 40 | 24 Marcellus |
|  | 5/24/2021 | 17,161.00 | 17,323.00 | 40 | 23 Marcellus |
|  | 5/24/2021 | 17,361.00 | 17,523.00 | 40 | 22 Marcellus |
|  | 5/24/2021 | 17,561.00 | 17,723.00 | 40 | 21 Marcellus |
|  | 5/23/2021 | 17,761.00 | 17,923.00 | 40 | 20 Marcellus |
|  | 5/23/2021 | 17,961.00 | 18,123.00 | 40 | 19 Marcellus |
|  | 5/23/2021 | 18,161.00 | 18,323.00 | 40 | 18 Marcellus |
|  | 5/22/2021 | 18,361.00 | 18,523.00 | 40 | 17 Marcellus |
|  | 5/22/2021 | 18,561.00 | 18,723.00 | 40 | 16 Marcellus |
|  | 5/22/2021 | 18,761.00 | 18,923.00 | 40 | 15 Marcellus |
|  | 5/22/2021 | 18,961.00 | 19,123.00 | 40 | 14 Marcellus |
|  | 5/22/2021 | 19,161.00 | 19,323.00 | 40 | 13 Marcellus |
|  | 5/21/2021 | 19,361.00 | 19,533.00 | 40 | 12 Marcellus |
|  | 5/21/2021 | 19,561.00 | 19,723.00 | 40 | 11 Marcellus |
|  | 5/21/2021 | 19,761.00 | 19,923.00 | 40 | 10 Marcellus |
|  | 5/20/2021 | 19,961.00 | 20,123.00 | 40 | 9 Marcellus |
|  | 5/20/2021 | 20,161.00 | 20,323.00 | 40 | 8 Marcellus |
|  | 5/20/2021 | 20,361.00 | 20,523.00 | 40 | 7 Marcellus |
|  | 5/19/2021 | 20,561.00 | 20,723.00 | 40 | 6 Marcellus |
|  | 5/19/2021 | 20,761.00 | 20,923.00 | 40 | 5 Marcellus |
|  | 5/19/2021 | 20,961.00 | 21,123.00 | 40 | 4 Marcellus |
|  | 5/18/2021 | 21,161.00 | 21,323.00 | 40 | 3 Marcellus |
|  | 5/18/2021 | 21,361.00 | 21,523.00 | 40 | 2 Marcellus |
|  | 5/17/2021 | 21,561.00 | 21,743.00 | 40 | 1 Marcellus |



Rev. 8/23/13
Farm name James T. Gamelli et al Well number 203
API 47- $033-05933$

PRODUCING FORMATION(S)
Marcelius Shale

DEPTHS
7,518' TVD 22,022' M
$\qquad$

Please insert additional pages as applicable.
GAS TEST $\quad$ Build up $\quad$ Drawdown $\quad$ Open Flow $\quad$ OLL TEST $\square$ Flow $\square$ Pump


Please insert additional pages as applicable.
Drilling Contractor Helmerich \& Payne

| Address 1437 South Boulder Ave. | City | Tulsa | State | OK | Zip 74119 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Logging Company Baker Hughes - GE |  |  |  |  |  |
| Address 2001 Rankin Rd | City | Houston | State | TX | Zip 77073 |

Cementing Company Universal Pressure Pumping
Address 6 Desta Drive, Suite $4400 \quad$ City Midland $\quad$ State TX Zip 79705

Stimulating Company Stingray - Mammoth Energy Services Inc
Address 14201 Caliber Drive Sulte 300 City Oklahoma City State OK _ Zip 73134

Please insert additional pages as applicable.
Completed by ArsenalResources
Telephone 724-584-1192
Signature


Title Sr. Director of Drilling Date 9/11/2021

Submittal of Hydraulic Fracturing Chemical Disclosure Information

Date: 9/11/2021

# State of West Virginia <br> Department of Environmental Protection Office of Oil and Gas 

Well Operator's Report of Initial Gas-Oil Ratio

Well Operator Arsenal Resources LLC
Address $\frac{6031 \text { Wallace Road Ext. Suite } 300}{\underline{\text { Wexford, PA } 15090}}$

Designated Agent
Gary Short
Address 633 West Main St
Bridgeport WV, 26330

Geological Target Formation: Marcellus

## Guidelines for testing:

1. A minimum of gas vented or flared.
2. A 24 hour pre-flow into pipelines or tanks.
3. Uniform producing rate during the 24 hour test per test period.
4. Measurement standards as for Form WR-39, "Report of Annual Production" (see 35CSR4-15)
5. Separate Form WR-36 for each producing formation in a multiple completion.

TEST DATA

| Start of Test Date 8/17/21 | $\begin{array}{\|c\|} \hline \text { Time } \\ \text { 9:00 AM } \end{array}$ | $\begin{aligned} & \text { End of Test Date } \\ & 8 / 18 / 21 \end{aligned}$ | $\begin{array}{r} \text { Time } \\ \text { 9:00 AM } \end{array}$ | $24 \mathrm{hr} \quad \text { Duration of Test }$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| NA | $1578 \text { Casing Pressure }$ | 972 Separator Pressure |  | 97 Separator Temperature |  |
| Oil Production During Test ${ }^{\text {a }}$ ( Gas Production During Test |  |  | Water Production During Test |  |  |
| BBLS |  | MCF |  | Bls | -Salinity |
| Oil Gravity | API ${ }^{\text {A }}$ Flowing Producing Method (flowing, pumping, gas lift etc.) |  |  |  |  |

GAS PRODUCTION


Arsenal Resources LLC

BY $\qquad$
ITS: Responsible Person - Sr. Director of Drilling

## Hydraulic Fracturing Fluid Product Component Information Disclosure

| Job Start Date | $5 / 16 / 2021$ |
| ---: | ---: |
| Job End Date | $6 / 8 / 2021$ |
| State | West Virginia |
| County | Harrison |
| API Number | Operator Name |

Hydraulic Fracturing Fluid Composition:

| Trade Name | Supplier | Purpose | Ingredients | Chemical Abstract Service Number (CAS \#) | Aキəximum Ingredient Concentration in Addifive (\% by mass) ${ }^{* *}$ | Maximum <br> Ingredient <br> Concentration in <br> HF Fluid <br> $(\%$ by mass) |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Water | Arsenal Resources | Carrier/Base Fluid |  |  |  |  |  |  |
|  |  |  | Water | 7732-18-5 | 100.00000 | 86.88106 | None |  |
| Sand (40/70 Proppant) | US Silica | Proppant |  |  |  |  |  |  |
|  |  |  | Silica Substrate | 14808-60-7 | 100.00000 | 9.98762 | None |  |
| Sand (100 Mesh | US Silica | Proppant |  |  |  |  |  |  |
|  |  |  | Silica Substrate | 14808-60-7 | 100.00000 | 2.89299 | None |  |
| Hydrochloric Acid 28\%) | Dover | Acidizing |  |  |  |  |  |  |
|  |  |  | Water | 7732-18-5 | 64.00000 | 0.08344 | None |  |
|  |  |  | Hydrochloric Acid (Hydrogen Chloride) | 7732-18-5 | 36.00000 | 0.04693 | None |  |
| StimSTREAM FR 9750 | Chemstream | Friction Reducer |  |  |  |  |  |  |
|  |  |  | Petroleum Distillates, hydrotreated light | 84742-47-8 | 25.00000 | 0.01943 | None |  |
|  |  |  | Alcohols, C11-14-iso-, C13-rich, ethoxylated | 78330-21-9 | 5.00000 | 0.00389 | Vone |  |
| StimSTREAM SC-398 | Chemstream | Scale Inhibitor |  |  |  |  |  |  |
|  |  |  | Non-hazardous substances | Proprietary | 90.00009 | 0.01486 | Vone |  |


|  |  |  | Bis (HexaMethylene Triamine Penta(Methylene Phosphonic Acid) (BHMT) | 34690-00-1 | 10.00000 | 0.00165 | None |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Clearal 268 | Chemstream | Biocide |  |  |  |  |  |
|  |  |  | Non-hazardous substances | Proprietary | 80.00000 | 0.01052 | None |
|  |  |  | Glutaraldehyde | 111-30-8 | 20.00000 | 0.00263 | None |
|  |  |  | Quaternary Ammonium Compounds | 68424-85-1 | 3.0000 d | 0.00039 | None |
|  |  |  | Didecyl dimethyl ammonium chloride | 7173-51-5 | 3.00000 | 0.00039 | None |
|  |  |  | Ethanol | 64-17-5 | 1.50000 | 0.0002 ¢ | None |
| NEFE-180 | Dover | Corrosion Inhibitor//ron control |  |  |  |  |  |
|  |  |  | Acetic acid | 64-19-7 | 89.00000 | 0.00051 | None |
|  |  |  | Methanol | 67-56-1 | 40.00000 | 0.00023 | Vone |
|  |  |  | 2-Ethylhexanol | 104-76-7 | 10.00000 | 0.00006 | None |
|  |  |  | Alcohols, C14-15, ethoxylated | 88951-67-7 | 5.00000 | 0.00003 | None |
|  |  |  | 2-Propyn-1-ol | 107-19-7 | 5.00000 | 0.00003 | None |
|  |  |  | Coconut oil acid diethanolamine | 68603-42-9 | 5.00000 | 0.00003 | vone |
|  |  |  | Fatty acids, tall oil | 61790-12-3 | 5.00000 | 0.00003 | Vone |
| Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS. |  |  |  |  |  |  |  |
| Other Chemicalís) | Listed Above | See Trade Name(s) List |  |  |  |  |  |
|  |  |  | Water | 7732-18-5 | 64.00000 | 0.08344 |  |
|  |  |  | Non-hazardous substances | Proprietary | 90.00000 | 0.01486 |  |
|  |  |  | Non-hazardous substances | Proprietary | 80.00000 | 0.01052 |  |
|  |  |  | Alcohols, C11-14-iso-, C13-rich, ethoxylated | 78330-21-9 | 5.00000 | 0.00389 |  |
|  |  |  | Quaternary Ammonium Compounds | 68424-85-1 | 3.00000 | 0.00039 |  |
|  |  |  | Didecyl dimethyl ammonium chloride | 7173-51-5 | 3.00000 | 0.00039 |  |
|  |  |  | Methanol | 67-56-1 | 40.00000 | 0.00023 |  |
|  |  |  | Ethanol | 64-17-5 | 1.50000 | 0.0002 d |  |
|  |  |  | 2-Ethylhexanol | 104-76-7 | 10.00000 | 0.00006 |  |
|  |  |  | 2-Propyn-1-ol | 107-19-7 | 5.0000 d | 0.00003 |  |
|  |  |  | Coconut oil acid diethanolamine | 68603-42-9 | 5.00000 | 0.00003 |  |
|  |  |  | Alcohols, C14-15, ethoxylated | 68951-67-7 | 5.0000 d | 0.00003 |  |
|  |  |  | Fatty acids, tall oil | 61790-12-3 | 5.00009 | 0.00003 |  |

* Total Water Volume sources may include fresh water, produced water, and/or recycled water
** Information is based on the maximum potential for concentration and thus the total may be over $100 \%$

[^0]




[^0]:    Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.
    Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

