

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

API 47 - 033 - 05908 County Harrison District Simpson
Quad Brownton Pad Name Pritt South Field/Pool Name _____
Farm name Ira and Laura Pritt Well Number 216
Operator (as registered with the OOG) Arsenal Resources
Address 6031 Wallace Rd Ext, Ste 3000 City Wexford State PA Zip 15090

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4344251.5 Easting 570212.6
Landing Point of Curve Northing 4344683.6 Easting 570822.4
Bottom Hole Northing 4346804.1 Easting 570039.2

Elevation (ft) 1351.20' GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine
Mud Type(s) and Additive(s)
Synthetic Oil Based

Date permit issued 11/15/2017 Date drilling commenced 1/10/2019 Date drilling ceased 2/25/2019
Date completion activities began 4/15/2019 Date completion activities ceased 7/5/2019
Verbal plugging (Y/N) _____ Date permission granted _____ Granted by _____

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

Freshwater depth(s) ft 176', 225', 240', 310', 380' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1400' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 483', 590', 651', 710', 775', 842', 861' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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Reviewed

Reviewed by:

RLC

SDEW

11/14/2020

API 47- 033 - 05908 Farm name Ira and Laura Pritt Well number 216

| CASING STRINGS | Hole Size | Casing Size | Depth | New or Used | Grade wt/ft | Basket Depth(s) | Did cement circulate (Y/ N) * Provide details below* |
|---------------------------|-----------|------------------------------|------------|-------------|-------------|-----------------|---|
| Conductor | 24" | 24" | 80' | New | 41.0 | 120' | Y |
| Surface | 17 1/2" | 13 3/8" | 457' GL | New | 54.5 | NA | Y |
| Coal | NA | NA | NA | NA | NA | NA | N |
| Intermediate 1 | 12 1/4" | 9 5/8" | 1,501' 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 | 8 1/2" | 5 1/2" | 16,090' GL | New | 20.0 | NA | N |
| Tubing | NA | NA | NA | NA | NA | NA | NA |
| Packer type and depth set | | Cement Kick Plug, 6,953'(GL) | | | | | |

Comment Details Cement to surface on Conductor, Surface, and Intermediate. Top of Kick Plug at 6,953'(GL). Top of production cement at 835'(GL)ft.

| CEMENT DATA | Class/Type of Cement | Number of Sacks | Slurry wt (ppg) | Yield (ft ³ /sks) | Volume (ft ³) | Cement Top (MD) | WOC (hrs) |
|----------------|----------------------|-----------------|-----------------|------------------------------|---------------------------|-----------------|-----------|
| Conductor | A | 450 | 15.60 | 1.20 | 540 | Surface | 8+ |
| Surface | A | 470 | 15.60 | 1.20 | 564 | Surface | 8+ |
| Coal | NA | NA | NA | NA | NA | NA | NA |
| Intermediate 1 | A | 480 | 15.60 | 1.31 | 628.8 | Surface | 8+ |
| Intermediate 2 | A (plug) | 569 | 17.00 | 0.99 | 563.31 | 6,953' | 8+ |
| Intermediate 3 | NA | NA | NA | NA | NA | NA | NA |
| Production | A | 955/1,720 | 13.80/15.00 | 1.35/1.29 | 1,289.25/2,218.8 | 835' GL | 8+ |
| Tubing | NA | NA | NA | NA | NA | NA | NA |

Drillers TD (ft) 16,073'(GL) Loggers TD (ft) _____

Deepest formation penetrated Marcellus Plug back to (ft) 6,953'

Plug back procedure To drill a 8 3/4" hole to a designed Pilot Hole Depth, log the well, and then set a cement kick-off plug from Pilot hole TD to designed Kick-off point. once plug is cured, the plan is to then start drill the curve and lateral section.

Kick off depth (ft) 7,382'

Check all wireline logs run caliper density deviated/directional induction
 neutron resistivity gamma ray temperature sonic

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING 24"- No centralizers, 13 3/8"- one bow spring centralizer on every other joint, 9 5/8"- one semi 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'; there will be no centralizers from 1,400' to surface

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS 37 stages, 1480 perforations

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____

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API 47- 033 - 05908 Farm name Ira and Laura Pritt Well number 216

PERFORATION RECORD

| Stage No. | Perforation date | Perforated from MD ft. | Perforated to MD ft. | 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.

| Stage No. | Stimulations Date | Ave Pump Rate (BPM) | Ave Treatment 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.

| Perforation Record | | | | | |
|--------------------|------------------|------------------------|----------------------|------------------------|-----------------|
| Stage No. | Perforation Date | Perforated from MD ft. | Perforated to MD ft. | Number of Perforations | Formations (s) |
| 37 | 5/30/2019 | 8,602.00 | 8,764.00 | 40 | Marcellus Shale |
| 36 | 5/29/2019 | 8,802.00 | 8,964.00 | 40 | Marcellus Shale |
| 35 | 5/29/2019 | 9,002.00 | 9,164.00 | 40 | Marcellus Shale |
| 34 | 5/29/2019 | 9,202.00 | 9,364.00 | 40 | Marcellus Shale |
| 33 | 5/29/2019 | 9,402.00 | 9,564.00 | 40 | Marcellus Shale |
| 32 | 5/29/2019 | 9,602.00 | 9,764.00 | 40 | Marcellus Shale |
| 31 | 5/29/2019 | 9,802.00 | 9,964.00 | 40 | Marcellus Shale |
| 30 | 5/28/2019 | 10,002.00 | 10,164.00 | 40 | Marcellus Shale |
| 29 | 5/28/2019 | 10,202.00 | 10,364.00 | 40 | Marcellus Shale |
| 28 | 5/28/2019 | 10,402.00 | 10,564.00 | 40 | Marcellus Shale |
| 27 | 5/28/2019 | 10,602.00 | 10,764.00 | 40 | Marcellus Shale |
| 26 | 5/27/2019 | 10,802.00 | 10,964.00 | 40 | Marcellus Shale |
| 25 | 5/27/2019 | 11,002.00 | 11,164.00 | 40 | Marcellus Shale |
| 24 | 5/26/2019 | 11,202.00 | 11,364.00 | 40 | Marcellus Shale |
| 23 | 5/26/2019 | 11,402.00 | 11,564.00 | 40 | Marcellus Shale |
| 22 | 5/26/2019 | 11,602.00 | 11,764.00 | 40 | Marcellus Shale |
| 21 | 5/26/2019 | 11,802.00 | 11,964.00 | 40 | Marcellus Shale |
| 20 | 5/25/2019 | 12,002.00 | 12,164.00 | 40 | Marcellus Shale |
| 19 | 5/25/2019 | 12,202.00 | 12,364.00 | 40 | Marcellus Shale |
| 18 | 5/25/2019 | 12,402.00 | 12,564.00 | 40 | Marcellus Shale |
| 17 | 5/24/2019 | 12,602.00 | 12,764.00 | 40 | Marcellus Shale |
| 16 | 5/24/2019 | 12,802.00 | 12,964.00 | 40 | Marcellus Shale |
| 15 | 5/24/2019 | 13,002.00 | 13,164.00 | 40 | Marcellus Shale |
| 14 | 5/23/2019 | 13,202.00 | 13,364.00 | 40 | Marcellus Shale |
| 13 | 5/23/2019 | 13,402.00 | 13,564.00 | 40 | Marcellus Shale |
| 12 | 5/23/2019 | 13,602.00 | 13,764.00 | 40 | Marcellus Shale |
| 11 | 5/22/2019 | 13,802.00 | 13,964.00 | 40 | Marcellus Shale |
| 10 | 5/22/2019 | 14,002.00 | 14,164.00 | 40 | Marcellus Shale |
| 9 | 5/21/2019 | 14,202.00 | 14,364.00 | 40 | Marcellus Shale |
| 8 | 5/20/2019 | 14,402.00 | 14,564.00 | 40 | Marcellus Shale |
| 7 | 5/20/2019 | 14,602.00 | 14,764.00 | 40 | Marcellus Shale |
| 6 | 5/20/2019 | 14,802.00 | 14,964.00 | 40 | Marcellus Shale |
| 5 | 5/19/2019 | 15,002.00 | 15,164.00 | 40 | Marcellus Shale |
| 4 | 5/19/2019 | 15,202.00 | 15,364.00 | 40 | Marcellus Shale |
| 3 | 5/19/2019 | 15,402.00 | 15,564.00 | 40 | Marcellus Shale |
| 2 | 5/19/2019 | 15,602.00 | 15,764.00 | 40 | Marcellus Shale |
| 1 | 4/25/2019 | 15,802.00 | 15,964.00 | 40 | Marcellus Shale |

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| STIMULATION INFORMATION PER STAGE | | | | | | | | |
|-----------------------------------|------------------|---------------------|------------------------------|------------------------------|------------|------------------------|------------------------|-----------------------------------|
| Stage No. | Stimulation Date | Avg Pump Rate (BPM) | Avg Treatment Pressure (PSI) | Max Breakdown Pressure (PSI) | ISIP (psi) | Amount of Proppant(lb) | Amount of Water (bbls) | Amount of Nitrogen/ Other (units) |
| 1 | 5/18/2019 | 73.80 | 7,904.00 | | 5,301.00 | 476,260.00 | 9,543.00 | NA |
| 2 | 5/19/2019 | 80.30 | 8,065.00 | 6,155.00 | 5,474.00 | 396,480.00 | 8,711.00 | NA |
| 3 | 5/19/2019 | 79.60 | 7,973.00 | 5,834.00 | 4,602.00 | 505,600.00 | 9,025.00 | NA |
| 4 | 5/19/2019 | 79.00 | 7,961.00 | 6,631.00 | 5,227.00 | 475,640.00 | 8,792.00 | NA |
| 5 | 5/20/2019 | 75.20 | 8,212.00 | 8,035.00 | 5,552.00 | 435,380.00 | 9,952.00 | NA |
| 6 | 5/20/2019 | 79.70 | 8,209.00 | 7,532.00 | 5,057.00 | 503,460.00 | 9,514.00 | NA |
| 7 | 5/20/2019 | 79.50 | 7,922.00 | 6,970.00 | 6,100.00 | 503,100.00 | 9,564.00 | NA |
| 8 | 5/21/2019 | 77.80 | 8,146.00 | 7,591.00 | 5,678.00 | 471,800.00 | 9,375.00 | NA |
| 9 | 5/22/2019 | 78.40 | 8,386.00 | 7,056.00 | 4,785.00 | 487,700.00 | 9,954.00 | NA |
| 10 | 5/22/2019 | 77.40 | 8,301.00 | 7,946.00 | 5,629.00 | 316,460.00 | 9,737.00 | NA |
| 11 | 5/23/2019 | 75.80 | 8,443.00 | 6,706.00 | 5,268.00 | 306,440.00 | 9,895.00 | NA |
| 12 | 5/23/2019 | 79.80 | 8,273.00 | 7,275.00 | 5,062.00 | 347,280.00 | 10,022.00 | NA |
| 13 | 5/23/2019 | 72.20 | 8,339.00 | 6,834.00 | 5,920.00 | 490,760.00 | 9,382.00 | NA |
| 14 | 5/24/2019 | 66.80 | 8,558.00 | 6,902.00 | 5,018.00 | 309,580.00 | 9,953.00 | NA |
| 15 | 5/24/2019 | 82.00 | 8,097.00 | 7,272.00 | 4,870.00 | 355,540.00 | 8,328.00 | NA |
| 16 | 5/24/2019 | 77.00 | 7,803.00 | 7,220.00 | 4,848.00 | 393,360.00 | 9,929.00 | NA |
| 17 | 5/25/2019 | 81.00 | 8,010.00 | 7,274.00 | 5,418.00 | 505,820.00 | 9,176.00 | NA |
| 18 | 5/25/2019 | 80.50 | 8,081.00 | 7,713.00 | 4,819.00 | 501,240.00 | 9,372.00 | NA |
| 19 | 5/25/2019 | 78.80 | 8,182.00 | 8,115.00 | 5,592.00 | 341,080.00 | 9,287.00 | NA |
| 20 | 5/25/2019 | 81.00 | 8,282.00 | 7,787.00 | 5,067.00 | 387,540.00 | 9,468.00 | NA |
| 21 | 5/26/2019 | 80.00 | 8,049.00 | 7,776.00 | 5,974.00 | 314,940.00 | 9,980.00 | NA |
| 22 | 5/26/2019 | 80.30 | 7,825.00 | 7,303.00 | 5,889.00 | 473,240.00 | 9,983.00 | NA |
| 23 | 5/26/2019 | 82.00 | 8,002.00 | 5,199.00 | 5,333.00 | 353,660.00 | 9,643.00 | NA |
| 24 | 5/27/2019 | 80.90 | 7,556.00 | 7,425.00 | 4,466.00 | 487,060.00 | 9,949.00 | NA |
| 25 | 5/27/2019 | 80.00 | 7,505.00 | 6,189.00 | 4,936.00 | 458,840.00 | 9,720.00 | NA |
| 26 | 5/27/2019 | 84.00 | 7,502.00 | 6,662.00 | 5,199.00 | 446,740.00 | 8,791.00 | NA |
| 27 | 5/28/2019 | 81.70 | 7,500.00 | 5,330.00 | 5,238.00 | 379,040.00 | 9,967.00 | NA |
| 28 | 5/28/2019 | 82.70 | 7,512.00 | 7,864.00 | 5,477.00 | 503,740.00 | 9,562.00 | NA |
| 29 | 5/29/2019 | 82.00 | 7,565.00 | 8,219.00 | 5,703.00 | 472,620.00 | 9,902.00 | NA |
| 30 | 5/29/2019 | 74.00 | 7,570.00 | 7,424.00 | 4,563.00 | 398,160.00 | 9,983.00 | NA |
| 31 | 5/29/2019 | 80.00 | 7,290.00 | 7,594.00 | 4,936.00 | 429,380.00 | 9,060.00 | NA |
| 32 | 5/29/2019 | 81.00 | 7,453.00 | 7,349.00 | 5,330.00 | 500,100.00 | 9,644.00 | NA |
| 33 | 5/29/2019 | 81.40 | 7,513.00 | 7,393.00 | 5,869.00 | 500,360.00 | 9,386.00 | NA |
| 34 | 5/29/2019 | 80.00 | 7,432.00 | 7,922.00 | 5,575.00 | 500,240.00 | 9,573.00 | NA |
| 35 | 5/29/2019 | 81.00 | 7,725.00 | 7,748.00 | 4,432.00 | 503,000.00 | 10,056.00 | NA |
| 36 | 5/29/2019 | 83.00 | 7,702.00 | 7,656.00 | 5,932.00 | 503,760.00 | 9,969.00 | NA |
| 37 | 5/30/2019 | 84.00 | 7,128.00 | 7,100.00 | 4,914.00 | 505,360.00 | 9,348.00 | NA |

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API 47- 033 - 05908 Farm name Ira and Laura Pritt Well number 216

| <u>PRODUCING FORMATION(S)</u> | <u>DEPTHS</u> | | |
|-------------------------------|---------------|-------|------------|
| Marcellus Shale | 7,759' | TVD | 16,100' MD |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface _____ psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW Gas _____ mcfpd Oil _____ bpd NGL _____ bpd Water _____ bpd GAS MEASURED BY Estimated Orifice Pilot

| LITHOLOGY/ FORMATION | TOP DEPTH IN FT NAME TVD | BOTTOM DEPTH IN FT TVD | TOP DEPTH IN FT MD | BOTTOM DEPTH IN FT MD | DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC) |
|-------------------------|--------------------------------|------------------------------|--------------------------|-----------------------------|--|
| Sand/Silt | 0 | 483 | 0 | 484 | Freshwater @ 176', 225', 240', 310', 380' |
| Sand/Silt/Coal | 483 | 651 | 484 | 654 | Bakerstown Coal @ 483' TVD, Brush Creek Coal @ 590'TVD |
| Sand/Silt/Coal | 651 | 775 | 654 | 780 | Upper Freeport @ 651' TVD, Lower Freeport @ 710' TVD |
| Sand/Silt/Coal | 775 | 1542 | 780 | 1570 | Upper Kittanning @ 775' TVD, Middle Kittanning @ 842' TVD, Lower Kittanning @ 861' TVD, Saltwater @ 1,400' |
| Big Lime | 1542 | 1712 | 1570 | 1746 | Limestone |
| Balltown | 3136 | 3182 | 3279 | 3330 | Sandstone |
| Elk Siltstone | 4885 | 4933 | 5200 | 5253 | Siltstone |
| Burkett | 7454 | 7477 | 7957 | 7988 | Shale |
| Tully | 7477 | 7528 | 7988 | 8057 | Limestone |
| Mahantango | 7528 | 7686 | 8057 | 8375 | Shale |
| Marcellus | 7686 | 7747 | 8375 | 8567 | Shale |
| Purcell | 7747 | 7750 | 8567 | 8582 | Limestone |
| Lower Marcellus | 7750 | 7772 | 8582 | 16100 | Shale - Gas shows through lateral |
| Onondaga | 7772* | | | | *Onondaga not penetrated - top estimated based on 4700103013 thickness |

Please insert additional pages as applicable.

Drilling Contractor Helmerich & Payne
Address 1437 South Boulder Ave City Tulsa State OK Zip 74119

Logging Company NA
Address _____ City _____ State _____ Zip _____

Cementing Company C & J Energy Services
Address 1650 Hackers Creek City Jane Lew State WV Zip 26378

Stimulating Company BJ Services
Address 88 Heckmans Gap Rd. City Mill Hall State PA Zip 17751

Please insert additional pages as applicable.

Completed by Arsenal Resources Telephone 724-940-1204
Signature [Signature] Title Permitting Manager Date 10/2/19

Hydraulic Fracturing Fluid Product Component Information Disclosure

| | |
|--------------------------------|--------------------|
| Job Start Date: | 5/19/2019 |
| Job End Date: | 5/30/2019 |
| State: | West Virginia |
| County: | Harrison |
| API Number: | 47-033-05908-00-00 |
| Operator Name: | Arsenal Resources |
| Well Name and Number: | Pritt South 216 |
| Latitude: | 39.24473900 |
| Longitude: | -80.18634900 |
| Datum: | NAD27 |
| Federal Well: | NO |
| Indian Well: | NO |
| True Vertical Depth: | 7,681 |
| Total Base Water Volume (gal): | 15,317,442 |
| Total Base Non Water Volume: | 0 |

Hydraulic Fracturing Fluid Composition:

| Trade Name | Supplier | Purpose | Ingredients | Chemical Abstract Service Number (CAS #) | Maximum Ingredient Concentration in Additive (% by mass)** | Maximum Ingredient Concentration in HF Fluid (% by mass)** | Comments |
|-------------|-------------|----------|-------------|--|--|--|----------|
| Water | Operator | Carrier | Water | 7732-18-5 | 100.00000 | 87.90885 | |
| Sand, White | BJ Services | Proppant | | Listed Below | | | |



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| Other Chemical (s) | BU Services | See Trade Name (s) List | | | | | | | |
|--|-------------|-------------------------|------------------------------|--------------|-----------|----------|--|--|--|
| | | | Water | 7732-18-5 | 95.00000 | 0.49494 | | | |
| HCl, 5.1 - 7.5% | BU Services | Acidizing | | | | | | | |
| | | | | Listed Below | | | | | |
| ThinFrac FRW-03C | BU Services | Friction Reducer | | Listed Below | | | | | |
| | | | | | | | | | |
| FracCare SI-01 | BU Services | Scale Inhibitor | | Listed Below | | | | | |
| | | | | | | | | | |
| BIOC11139A | BU Services | Biocide | | Listed Below | | | | | |
| | | | | | | | | | |
| ResCare IC 300L | BU Services | Iron Control | | Listed Below | | | | | |
| | | | | | | | | | |
| CI-14 | BU Services | Corrosion Inhibitor | | Listed Below | | | | | |
| | | | | | | | | | |
| Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients. | | | | | | | | | |
| | | | Crystalline Silica (Quartz) | 14808-60-7 | 100.00000 | 11.49736 | | | |
| | | | Hydrochloric Acid | 7647-01-0 | 7.50000 | 0.03484 | | | |
| | | | Quaternized Acrylate Polymer | 35429-19-7 | 25.00000 | 0.02574 | | | |
| | | | Petroleum Distillates | 64742-47-8 | 25.00000 | 0.02574 | | | |
| | | | Sodium chloride | 7647-14-5 | 2.50000 | 0.00257 | | | |

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|--|--|--|--|--------------|-----------|---------|--|
| | | | Surfactant blend | 68439-45-2 | 2.50000 | 0.00257 | |
| | | | Benzyl-(C12-C16 Alkyl)- Dimethyl-Ammonium Chloride | 68424-85-1 | 30.00000 | 0.00238 | |
| | | | Citric Acid | 77-92-9 | 60.00000 | 0.00195 | |
| | | | Glutaraldehyde | 111-30-8 | 10.00000 | 0.00079 | |
| | | | Methanol | 67-56-1 | 100.00000 | 0.00075 | |
| | | | Organo phosphorus salt | Trade Secret | 5.00000 | 0.00067 | |
| | | | Ethanol | 64-17-5 | 5.00000 | 0.00040 | |
| | | | Polyoxyalkylenes | 68951-67-7 | 30.00000 | 0.00022 | |
| | | | Fatty Acids | 61790-12-3 | 10.00000 | 0.00007 | |
| | | | Modified Thiourea Polymer | 68527-49-1 | 7.00000 | 0.00005 | |
| | | | Propargyl Alcohol | 107-19-7 | 5.00000 | 0.00004 | |
| | | | Olefin | 64743-02-8 | 5.00000 | 0.00004 | |
| | | | Formaldehyde | 50-00-0 | 1.00000 | 0.00001 | |

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* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water
 ** Information is based on the maximum potential for concentration and thus the total may be over 100%
 *** If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line
 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)

**State of West Virginia
Department of Environmental Protection
Office of Oil and Gas**

Well Operator's Report of
Initial Gas-Oil Ratio

Well Operator Arsenal Resources LLC
Address 6031 Wallace Road Ext. Suite 300
Wexford, PA 15090

Designated Agent William Veigel
Address 65 Professional Place, Suite 200
Bridgeport, WV 26330

Geological Target Formation: Marcellus Depth 8375 feet
Perforation Interval 8602' - 15964' feet

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 7/4/19 | Time 7:00 AM | End of Test Date 7/5/19 | Time 7:00 AM | Duration of Test 24 Hrs |
| Tubing Pressure NA | Casing Pressure 1300 | Separator Pressure 860 | Separator Temperature 94 | |
| Oil Production During Test 0 BBLs | Gas Production During Test 11988 MCF | Water Production During Test 634 BBLs 56,889 -Salinity | | |
| Oil Gravity NA API | Producing Method (flowing, pumping, gas lift etc.) Flowing | | | |

GAS PRODUCTION

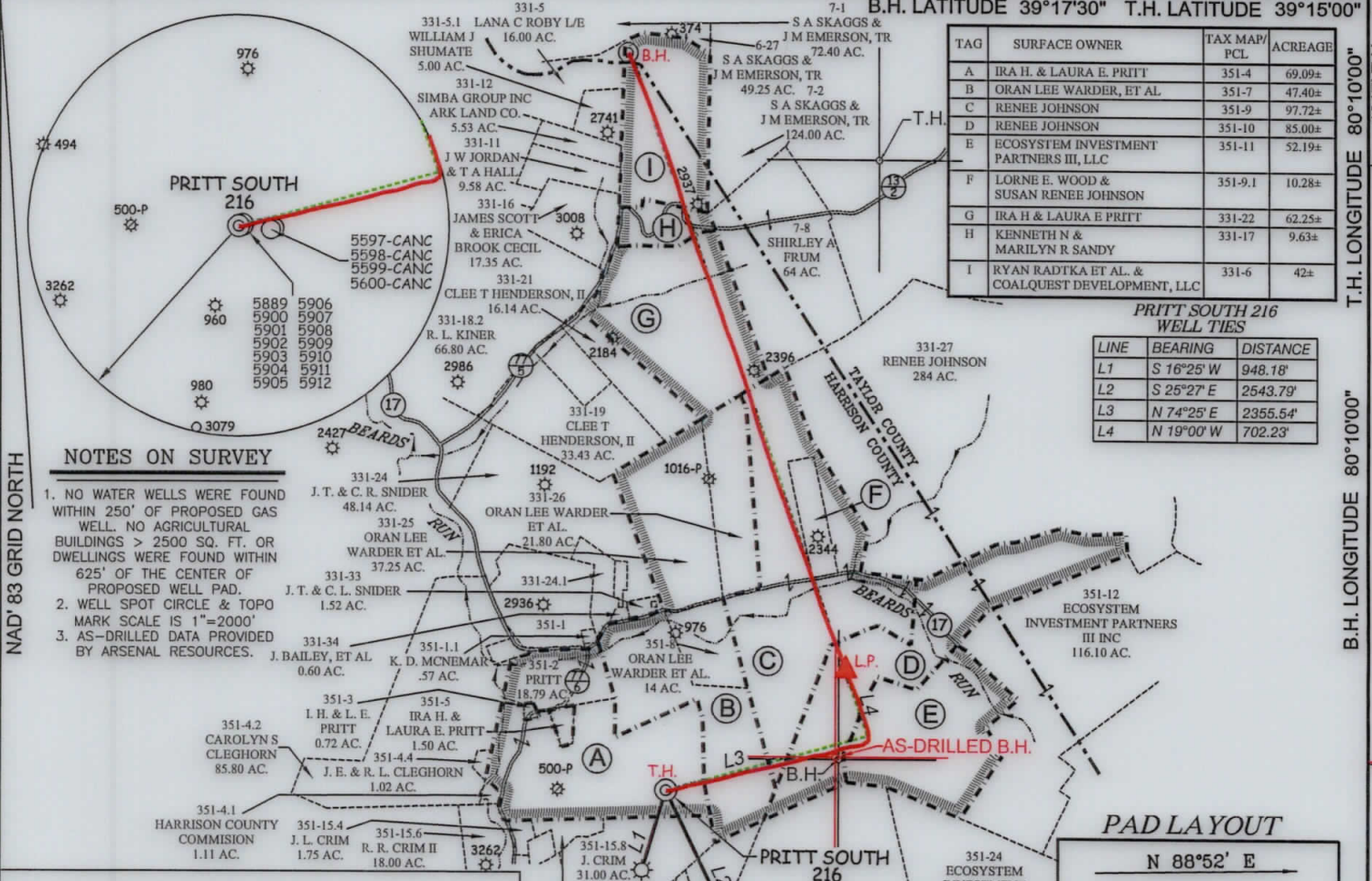
| | | |
|--|-----------------------------------|---|
| Measurement Method Flange Tap <input checked="" type="checkbox"/> Pipe Tap <input type="checkbox"/> L-10 <input type="checkbox"/> | | Positive Choke <input type="checkbox"/> |
| | | Positive flow prover <input checked="" type="checkbox"/> |
| Orifice diameter | Pipe Diameter (inside) | Nominal Choke Size inches 48/64" |
| Differential Pressure range | Max. Static pressure range | Prover and Orifice diameter - inches 3.826" run with 2" orifice |
| Differential 214.1" H2O | | Static |
| Gas Gravity (Air = 1.0) Measured .5725 Estimated | Flowing Temperature 94 | Gas Temperature 60 |
| 24 Hour Coefficient | 24 Hour coefficient pressure PSIA | |

TEST RESULTS

| | | | |
|-----------------------|--------------------------------|-------------------------------|----------------------------|
| Daily Oil 0 | Daily Water 634 BBLs | Daily Gas 11988 MCF | Gas-Oil Ratio NA |
|-----------------------|--------------------------------|-------------------------------|----------------------------|

RECEIVED
Office of Oil and Gas

 BY William Veigel Well Operator
 ITS: Designated Agent
 OCT - 4 2019
 WV Department of Environmental Protection



NOTES ON SURVEY

- NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS > 2500 SQ. FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
- WELL SPOT CIRCLE & TOPO MARK SCALE IS 1"=2000'
- AS-DRILLED DATA PROVIDED BY ARSENAL RESOURCES.

ARSENAL RESOURCES PRITT SOUTH 216

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

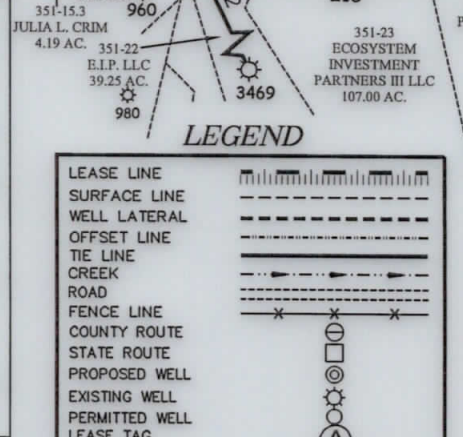
NAD'83 S.P.C.(FT) N. 271,997.1 E. 1,774,118.0
 NAD'83 GEO. LAT-(N) 39.244739 LONG-(W) 80.186348
 NAD'83 UTM (M) N. 4,344,251.5 E. 570,212.6

LANDING POINT

NAD'83 S.P.C.(FT) N. 273,293.5 E. 1,776,158.5
 NAD'83 GEO. LAT-(N) 39.248341 LONG-(W) 80.179179
 NAD'83 UTM (M) N. 4,344,656.9 E. 570,827.7

BOTTOM HOLE

NAD'83 S.P.C.(FT) N. 280,352.2 E. 1,773,728.4
 NAD'83 GEO. LAT-(N) 39.267670 LONG-(W) 80.187950
 NAD'83 UTM (M) N. 4,346,795.1 E. 570,051.6



PAD LA YOUT

N 88°52' E

NOT TO SCALE

LEGEND

AS DRILLED (Red line)
 PROPOSED (Green dashed line)

AS DRILLED COORDINATES FOR WELL NO. 216

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

NAD'83 S.P.C.(FT) N. 271,997.1 E. 1,774,118.0
 NAD'83 GEO.(DD) LAT-(N) 39.244739 LONG-(W) 80.186348
 NAD'83 GEO.(DMS) LAT-(N) 39°14'41.1" LONG-(W) 80°11'10.9"
 NAD'83 UTM (M) N. 4,344,251.5 E. 570,212.6

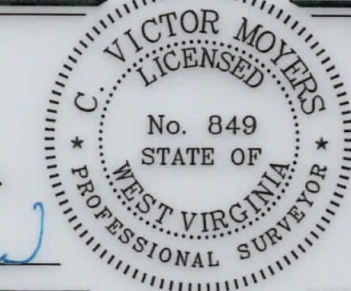
LANDING POINT

NAD'83 S.P.C.(FT) N. 273,381.7 E. 1,776,142.6
 NAD'83 GEO.(DD) LAT-(N) 39.248583 LONG-(W) 80.179237
 NAD'83 GEO.(DMS) LAT-(N) 39°14'54.9" LONG-(W) 80°10'45.3"
 NAD'83 UTM (M) N. 4,344,683.6 E. 570,822.4

BOTTOM HOLE

NAD'83 S.P.C.(FT) N. 280,382.3 E. 1,773,688.1
 NAD'83 GEO.(DD) LAT-(N) 39.267752 LONG-(W) 80.188093
 NAD'83 GEO.(DMS) LAT-(N) 39°16'03.9" LONG-(W) 80°11'17.1"
 NAD'83 UTM (M) N. 4,346,804.1 E. 570,039.2

SLS
 Land & Energy Development
 Solutions from the ground up.
 P.O. Box 150 • 12 Vanhorn Drive • Glenville, WV 26351 • (304) 462-5634
 www.slsww.com



I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAN IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. 849 *C. Victor Moyers*

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.

DATE AUGUST 2, 20 19

REVISED _____

OPERATORS WELL NO. PRITT SOUTH 216

API WELL NO. 47 - 033 - 05908

STATE STATE COUNTY COUNTY PERMIT PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8383AD216.dwg

HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE 1" = 2000'

STATE OF WEST VIRGINIA
 DIVISION OF ENVIRONMENTAL PROTECTION
 OFFICE OF OIL AND GAS

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL IF "GAS" PRODUCTION STORAGE DEEP SHALLOW

LOCATION:

ELEVATION EXISTING: 1,351.20' / PROPOSED: 1,354.80' WATERSHED BEARDS RUN & PIGTAIL RUN

DISTRICT SIMPSON COUNTY HARRISON QUADRANGLE BROWNTON 7.5'

SURFACE OWNER IRA & LAURA PRITT ACREAGE 69.09±

ROYALTY OWNER IRA & LAURA PRITT ET AL ACREAGE 92.06±

PROPOSED WORK:

LEASE NO. 00006622

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT AND REPLUG OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION MARCELLUS

ESTIMATED DEPTH 16,123.9' TMD / 7,755' TVD

WELL OPERATOR ARSENAL RESOURCES DESIGNATED AGENT WILLIAM VEIGEL

ADDRESS 6031 WALLACE RD. EXT. SUITE 300 ADDRESS 65 PROFESSIONAL PLACE
WEXFORD, PA 15090 BRIDGEPORT, WV 26330

B.H. LATITUDE 39°17'30" T.H. LATITUDE 39°15'00"
 T.H. LONGITUDE 80°10'00"
 1917' T.H.
 8741' B.H.
 B.H. LONGITUDE 80°10'00"
 COUNTY NAME
 PERMIT