

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

API 47 - 051 - 01889 County Marshall District Franklin
Quad Powhatan Point 7.5' Pad Name Greer Field/Pool Name _____
Farm name PPG Industries, Inc. Well Number 1S-4HM
Operator (as registered with the OOG) Tug Hill Operating, LLC
Address 1320 South University Drive, Suite 500 City Ft. Worth State TX Zip 76107

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,400,803.1 Easting 514,024.5
Landing Point of Curve Northing 4,400,738.3 Easting 514,251.8
Bottom Hole Northing 4,399,235.3 Easting 515,115.4

Elevation (ft) 1,251' 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)
SOBM; Base oil, osmotic inhibitor, weighting agent, viscosifier, emulsifier, hardness buffer, fluid loss additive; LCM, shale inhibitor, de-foamer, soaping agent, coagulant, flocculant; Specific additives per WSSP and Permit.

Date permit issued 1/23/2017 Date drilling commenced 4/3/17 Date drilling ceased 8/8/2017
Date completion activities began 11/12/17 Date completion activities ceased 12/10/17
Verbal plugging (Y/N) n/a Date permission granted n/a Granted by n/a

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

Freshwater depth(s) ft 70' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1600' Void(s) encountered (Y/N) depths N
Coal depth(s) ft Sewickley 785' TVD, Pittsburgh 879' TVD Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by

J. McDaniel
12/28/18

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Reviewed by:

J. McDaniel

WR-35
Rev. 8/23/13

API 47-051 - 01889

Farm name PPG Industries, Inc.

Well number 1S-4HM

| 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 | 36 | 30 | 120 | NEW | 94.5# | N/A | YES |
| Surface | 17 1/2 | 13 3/8 | 967 | NEW | 54.5# | N/A | YES |
| Coal | 17 1/2 | 13 3/8 | 967 | NEW | 54.5# | N/A | YES |
| Intermediate 1 | 12 1/4 | 9 5/8 | 2578 | NEW | 36# | N/A | YES |
| Intermediate 2 | | | | | | | |
| Intermediate 3 | | | | | | | |
| Production | 8 3/4 | 5 1/2 | 12,914 | NEW | 20# | N/A | YES |
| Tubing | | 2 3/8 | 6554 | NEW | 4.7# | N/A | |
| Packer type and depth set | | | | | | | |

Comment Details _____

| 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 | 209 | 15.6 | 1.19 | 249 | 0 | 8 |
| Surface | A | 1044 | 15.6 | 1.19 | 1242 | 0 | 8 |
| Coal | A | 1044 | 15.6 | 1.19 | 1242 | 0 | 8 |
| Intermediate 1 | A | 872 | 15.6 | 1.19 | 1038 | 0 | 8 |
| Intermediate 2 | | | | | | | |
| Intermediate 3 | | | | | | | |
| Production | A | 2527 | 14.5 | 1.17 | 2957 | 0 | 8 |
| Tubing | | | | | | | |

Drillers TD (ft) 12,925 Loggers TD (ft) _____

Deepest formation penetrated Marcellus Plug back to (ft) n/a

Plug back procedure n/a

Kick off depth (ft) 6476

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 3 centralizers on surface casing at equal distance.

Intermediate - 1 centralizer every other joint

Production - one centralizer every other joint in lateral, one centralizer every joint through curve, one centralizer every other joint to surface.

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

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

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**Greer 1S-4HM
Perforation Record**

02/15/2019

| Stage | Date Perforated | Bottom Perf (ft) | Top Perf (ft) | Number of Perfs | Formation |
|-------|-----------------|------------------|---------------|-----------------|-----------|
| 1 | 11/14/2017 | 12,818 | 12,770 | 2 | Marcellus |
| 2 | 11/14/2017 | 12,706 | 12,589 | 48 | Marcellus |
| 3 | 11/14/2017 | 12,531 | 12,415 | 48 | Marcellus |
| 4 | 11/14/2017 | 12,356 | 12,240 | 48 | Marcellus |
| 5 | 11/15/2017 | 12,181 | 12,065 | 48 | Marcellus |
| 6 | 11/15/2017 | 12,006 | 11,890 | 48 | Marcellus |
| 7 | 11/15/2017 | 11,832 | 11,715 | 48 | Marcellus |
| 8 | 11/18/2017 | 11,657 | 11,540 | 48 | Marcellus |
| 9 | 11/18/2017 | 11,482 | 11,365 | 48 | Marcellus |
| 10 | 11/19/2017 | 11,307 | 11,190 | 48 | Marcellus |
| 11 | 11/19/2017 | 11,132 | 11,015 | 48 | Marcellus |
| 12 | 11/19/2017 | 10,957 | 10,840 | 48 | Marcellus |
| 13 | 11/20/2017 | 10,782 | 10,666 | 48 | Marcellus |
| 14 | 11/20/2017 | 10,607 | 10,491 | 48 | Marcellus |
| 15 | 11/21/2017 | 10,432 | 10,316 | 48 | Marcellus |
| 16 | 11/22/2017 | 10,257 | 10,141 | 48 | Marcellus |
| 17 | 11/22/2017 | 10,083 | 9,966 | 48 | Marcellus |
| 18 | 11/25/2017 | 9,908 | 9,791 | 48 | Marcellus |
| 19 | 11/26/2017 | 9,733 | 9,616 | 48 | Marcellus |
| 20 | 11/26/2017 | 9,558 | 9,441 | 48 | Marcellus |
| 21 | 11/27/2017 | 9,383 | 9,266 | 48 | Marcellus |
| 22 | 11/28/2017 | 9,208 | 9,091 | 48 | Marcellus |
| 23 | 11/29/2017 | 9,033 | 8,917 | 48 | Marcellus |
| 24 | 11/29/2017 | 8,858 | 8,742 | 48 | Marcellus |
| 25 | 11/30/2017 | 8,683 | 8,567 | 48 | Marcellus |
| 26 | 12/1/2017 | 8,508 | 8,392 | 48 | Marcellus |
| 27 | 12/3/2017 | 8,334 | 8,217 | 48 | Marcellus |
| 28 | 12/3/2017 | 8,159 | 8,042 | 48 | Marcellus |
| 29 | 12/3/2017 | 7,984 | 7,867 | 48 | Marcellus |
| 30 | 12/4/2017 | 7,809 | 7,692 | 48 | Marcellus |
| 31 | 12/4/2017 | 7,634 | 7,517 | 48 | Marcellus |
| 32 | 12/5/2018 | 7,459 | 7,342 | 48 | Marcellus |
| 33 | 12/5/2017 | 7,284 | 7,168 | 48 | Marcellus |
| 34 | 12/6/2017 | 7,109 | 6,993 | 48 | Marcellus |
| 35 | 12/6/2017 | 6,934 | 6,818 | 48 | Marcellus |
| 36 | 12/7/2017 | 6,759 | 6,643 | 48 | Marcellus |

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**Stimulation Summary
Greer 15-4HM**

| Stage | Avg. Pump Rate (BPM) | Avg. Treating Pressure (PSI) | Max Breakdown Pressure (PSI) | ISIP (PSI) | Proppant Total (lbs) | Water Total (bbls) | Amount of N2 (scf) |
|-------|----------------------|------------------------------|------------------------------|------------|----------------------|--------------------|--------------------|
| 1 | 79.2 | 7,825 | 4,837 | 3,519 | 451,524 | 7,794 | 0 |
| 2 | 78 | 7,822 | 4,529 | 4,596 | 412,529 | 7,679 | 0 |
| 3 | 79.6 | 7,844 | 5,374 | 3,304 | 293,783 | 6,552 | 0 |
| 4 | 77.4 | 7,618 | 6,242 | 4,075 | 443,871 | 9,071 | 0 |
| 5 | 78.8 | 7,569 | 6,155 | 3,244 | 451,143 | 8,130 | 0 |
| 6 | 80.2 | 7,762 | 4,959 | 4,818 | 451,173 | 8,033 | 0 |
| 7 | 78.8 | 7,428 | 5,432 | 4,542 | 452,495 | 8,092 | 0 |
| 8 | 79.3 | 7,522 | 5,350 | 3,493 | 452,620 | 8,080 | 0 |
| 9 | 79.4 | 7,395 | 4,706 | 4,563 | 450,891 | 9,038 | 0 |
| 10 | 76.1 | 7,381 | 5,354 | 3,561 | 451,235 | 8,148 | 0 |
| 11 | 79.6 | 7,249 | 4,682 | 3,630 | 451,765 | 8,065 | 0 |
| 12 | 80.8 | 7,258 | 5,088 | 3,484 | 452,710 | 8,572 | 0 |
| 13 | 80.2 | 7,215 | 5,082 | 3,808 | 450,157 | 8,117 | 0 |
| 14 | 80 | 7,221 | 5,364 | 3,530 | 450,223 | 8,058 | 0 |
| 15 | 79.6 | 7,051 | 6,824 | 7,055 | 253,364 | 8,978 | 0 |
| 16 | 82.9 | 7,356 | 6,340 | 4,627 | 225,700 | 7,269 | 0 |
| 17 | 87.2 | 7,914 | 5,629 | 4,602 | 381,984 | 7,657 | 0 |
| 18 | 84.1 | 7,643 | 5,314 | 4,421 | 410,074 | 7,728 | 0 |
| 19 | 84.8 | 7,446 | 4,958 | 4,866 | 293,061 | 6,597 | 0 |
| 20 | 84.2 | 7,487 | 5,785 | 3,636 | 406,288 | 8,037 | 0 |
| 21 | 85.4 | 7,185 | 5,211 | 4,138 | 450,903 | 8,041 | 0 |
| 22 | 85.2 | 6,914 | 6,486 | 3,370 | 450,796 | 8,047 | 0 |
| 23 | 85 | 6,929 | 6,509 | 3,264 | 451,641 | 7,951 | 0 |
| 24 | 84.7 | 7,019 | 5,026 | 3,403 | 450,933 | 8,031 | 0 |
| 25 | 84.8 | 7,317 | 6,452 | 3,463 | 450,436 | 7,881 | 0 |
| 26 | 84.5 | 7,056 | 5,286 | 3,236 | 451,137 | 8,240 | 0 |
| 27 | 85 | 6,720 | 4,791 | 3,966 | 392,357 | 7,412 | 0 |
| 28 | 81.8 | 7,364 | 5,282 | 4,938 | 426,869 | 7,649 | 0 |
| 29 | 84.3 | 6,825 | 5,432 | 4,808 | 451,873 | 7,890 | 0 |
| 30 | 84.3 | 6,793 | 6,365 | 4,688 | 449,740 | 7,965 | 0 |
| 31 | 75.7 | 6,997 | 5,325 | 5,373 | 387,915 | 10,041 | 0 |
| 32 | 84.5 | 6,678 | 5,131 | 3,453 | 450,826 | 7,941 | 0 |
| 33 | 84.4 | 6,557 | 5,890 | 3,771 | 451,845 | 7,932 | 0 |
| 34 | 84.9 | 6,405 | 5,208 | 3,743 | 451,075 | 7,813 | 0 |
| 35 | 85 | 6,368 | 5,585 | 3,085 | 450,112 | 7,744 | 0 |
| 36 | 84.8 | 6,301 | 5,822 | 3,919 | 436,907 | 7,655 | 0 |

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**Greer 1S-4HM
Lithology/Formation Information**

| FORMATION | TOP TVD | BASE TVD | TOP MD | BASE MD | DESCRIBE ROCKY TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H2S ETC) |
|-----------------|---------|----------|--------|---------|--|
| Maxton | 1857 | 1929 | 1858 | 1930 | Sandstone |
| Big Lime | 1929 | 2038 | 1930 | 2039 | Limestone |
| Big Injun | 2038 | 2346 | 2039 | 2347 | Sandstone |
| Weir | 2346 | 2536 | 2347 | 2537 | Sandstone |
| Berea | 2536 | 2854 | 2537 | 2855 | Sandstone |
| Gordon | 2854 | 2956 | 2855 | 2957 | Sandstone |
| Fifty Foot | 2956 | 3529 | 2957 | 3530 | Sandstone |
| Speechley | 3529 | 4865 | 3530 | 4897 | Sandstone |
| Benson | 4865 | 5234 | 4897 | 5300 | Sandstone |
| Alexander | 5234 | 5854 | 5300 | 5963 | Siltstone |
| Rhinestreet | 5854 | 6216 | 5963 | 6379 | Black shale |
| Middlesex | 6216 | 6302 | 6379 | 6514 | Black shale |
| Geneseo/Burkett | 6302 | 6335 | 6514 | 6582 | Black shale |
| Tully | 6335 | 6355 | 6582 | 6640 | Limestone |
| Hamilton | 6355 | 6368 | 6640 | 6692 | Grey shale |
| Marcellus | 6368 | - | 6692 | - | Black shale |

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Hydraulic Fracturing Fluid Product Component Information Disclosure

| | |
|--------------------------------|-------------------------|
| Job Start Date: | 12/7/2017 |
| Job End Date: | 12/7/2017 |
| State: | West Virginia |
| County: | Marshall |
| API Number: | 47-051-01889-00-00 |
| Operator Name: | Tug Hill Operating, LLC |
| Well Name and Number: | Greer 1S-4HM |
| Latitude: | 39.76000000 |
| Longitude: | -80.84000000 |
| Datum: | NAD83 |
| Federal Well: | NO |
| Indian Well: | NO |
| True Vertical Depth: | 6,477 |
| Total Base Water Volume (gal): | 12,377,567 |
| Total Base Non Water Volume: | 0 |



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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 |
|-------------|--------------|--------------|-------------|--|--|--|-----------------|
| Fresh Water | Operator | Base Fluid | | | | | |
| | | | Water | 7732-18-5 | 100.00000 | 86.95334 | Density = 8.330 |
| Ingredients | Listed Above | Listed Above | | | | | |
| | | | Water | 7732-18-5 | 100.00000 | 0.22678 | |

| | | | | | | | |
|---|-------------|----------------------|--|--------------|--|--|--|
| MC B-8614 | Halliburton | Biocide | | | | | |
| | | | | Listed Below | | | |
| SAND-PREMIUM WHITE-40/70, BULK | Halliburton | Proppant | | | | | |
| | | | | Listed Below | | | |
| FR-76 | Halliburton | Friction Reducer | | | | | |
| | | | | Listed Below | | | |
| HYDROCHLORIC ACID | Halliburton | Solvent | | | | | |
| | | | | Listed Below | | | |
| MC MX 2-2822 | Halliburton | Scale Inhibitor | | | | | |
| | | | | Listed Below | | | |
| HAI-OS ACID INHIBITOR | Halliburton | Corrosion Inhibitor | | | | | |
| | | | | Listed Below | | | |
| SAND-COMMON WHITE-100 MESH, SSA-2, BULK (100003676) | Halliburton | Proppant | | | | | |
| | | | | Listed Below | | | |
| OILPERM A | Halliburton | Non-ionic Surfactant | | | | | |
| | | | | Listed Below | | | |

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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 | 12.76999 | |
| | | | Hydrochloric acid | 7647-01-0 | 60.00000 | 0.07672 | |
| | | | Hydrotreated light petroleum distillate | 64742-47-8 | 30.00000 | 0.03016 | |
| | | | Acrylamide acrylate copolymer | Proprietary | 30.00000 | 0.03016 | Denise Tuck, Halliburton, 3000 N. Sam Houston Pkwy E., Houston, TX 77032, 281-871-6226 |
| | | | Inorganic salt | Proprietary | 30.00000 | 0.03016 | |
| | | | Glutaraldehyde | 111-30-8 | 30.00000 | 0.00795 | |
| | | | Methanol | 67-56-1 | 60.00000 | 0.00667 | |
| | | | Amines, polyethylenepoly-, ethoxylated, phosphonomethylated, sodium salts | 70900-16-2 | 30.00000 | 0.00635 | |
| | | | Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl chlorides | 68424-85-1 | 5.00000 | 0.00133 | |
| | | | Sodium chloride | 7647-14-5 | 5.00000 | 0.00106 | |
| | | | Ethanol | 64-17-5 | 60.00000 | 0.00055 | |
| | | | Oxyalkylated phenolic resin | Proprietary | 30.00000 | 0.00019 | |
| | | | Heavy aromatic petroleum naphtha | 64742-94-5 | 30.00000 | 0.00014 | |
| | | | Fatty acids, tall oil | Proprietary | 30.00000 | 0.00014 | |
| | | | Modified thiourea polymer | Proprietary | 30.00000 | 0.00014 | |
| | | | Ethoxylated alcohols | Proprietary | 30.00000 | 0.00014 | |
| | | | Olefins | Proprietary | 5.00000 | 0.00006 | |
| | | | Propargyl alcohol | 107-19-7 | 10.00000 | 0.00005 | |
| | | | Phosphoric acid | 7664-38-2 | 0.10000 | 0.00003 | |
| | | | Naphthalene | 91-20-3 | 5.00000 | 0.00002 | |

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| | | | | | | | |
|--|--|--|--|-------------|---------|---------|--|
| | | | Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)- omega-hydroxy-, branched | 127087-87-0 | 5.00000 | 0.00002 | |
| | | | Formaldehyde | 50-00-0 | 0.09000 | 0.00002 | |
| | | | 1,2,4 Trimethylbenzene | 95-63-6 | 1.00000 | 0.00000 | |

* 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)

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form 4466

PG 1 OF 3 NOTES

- BORE PATH BASED ON GRID NORTH.
- NO WATER WELLS WITHIN 250' OF WELL WERE FOUND, NO DWELLINGS WITHIN 625' OF PAD CENTER WERE FOUND.
- OWNERSHIP TAKEN FROM PUBLIC RECORDS OF MARSHALL COUNTY, WV IN JULY, 2016.
- COORDINATES AND WELL TIES BASED UPON DIFFERENTIAL GPS MEASUREMENTS.
- WELL LOCATION REFERENCES ARE BASED UPON THE MAGNETIC MERIDIAN.
- ROYALTY OWNERSHIP PROVIDED BY TUG HILL OPERATING, LLC.
- SURFACE OWNERSHIP WAS NOT ADDRESSED.
- PLAT UPDATED TO SHOW AS-DRILLED PATH.

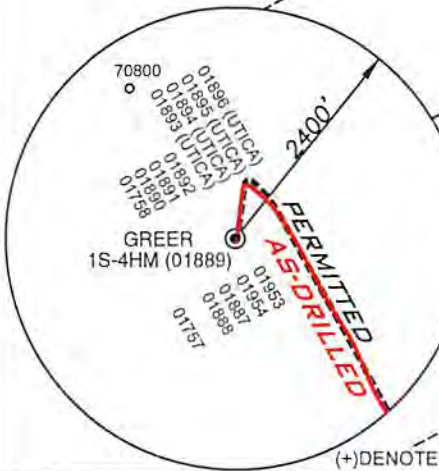
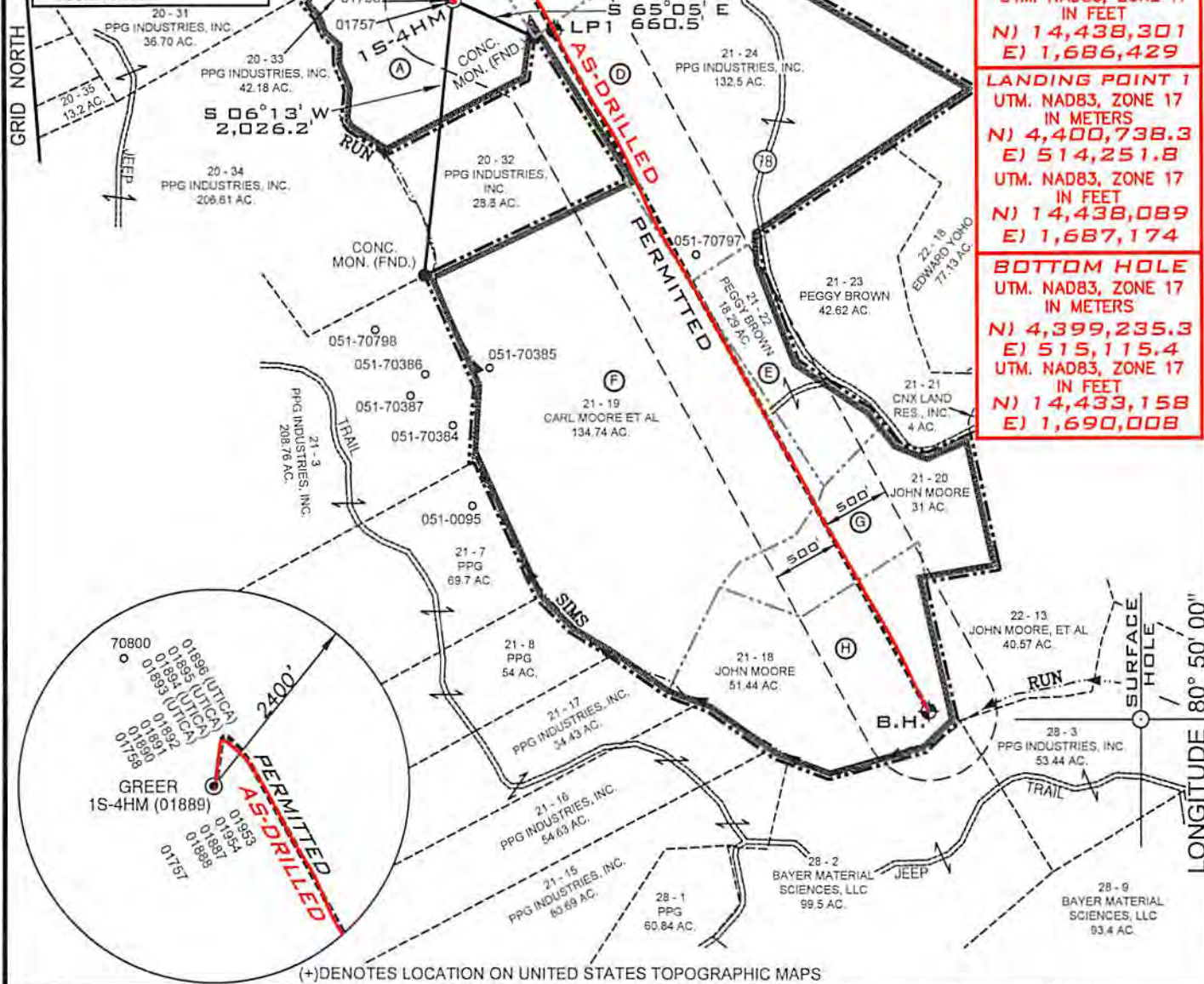
LATITUDE 39° 47' 30" GREER LEASE
WELL NO. 1S-4HM
455.57± ACRES



LEGEND

| | |
|-----|-------------------------|
| --- | LEASED TRACTS |
| --- | INTERIOR MINERAL TRACTS |
| --- | SURFACE TRACTS |
| --- | HARD LEASE LINE |
| (A) | LEASE # (SEE PG 2) |

| | |
|------------------------|--------------|
| AS-DRILLED | |
| SURFACE HOLE | |
| UTM. NAD83, ZONE 17 | IN METERS |
| N) 4,400,803.1 | E) 514,024.5 |
| UTM. NAD83, ZONE 17 | |
| IN FEET | |
| N) 14,438,301 | E) 1,686,429 |
| LANDING POINT 1 | |
| UTM. NAD83, ZONE 17 | IN METERS |
| N) 4,400,738.3 | E) 514,251.8 |
| UTM. NAD83, ZONE 17 | |
| IN FEET | |
| N) 14,438,089 | E) 1,687,174 |
| BOTTOM HOLE | |
| UTM. NAD83, ZONE 17 | IN METERS |
| N) 4,399,235.3 | E) 515,115.4 |
| UTM. NAD83, ZONE 17 | |
| IN FEET | |
| N) 14,433,158 | E) 1,690,008 |



(+) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS

FILE NUMBER **8837**

DRAWING NUMBER **8837ADG1S4HM.dwg**

SCALE **1" = 1200'**

MINIMUM DEGREE OF ACCURACY **1/2500**

PROVEN SOURCE OF ELEVATION **SUBMETER MAPPING GRADE GPS**

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

P.S. 677 *Gregory A. Smith*



WVDEP
OFFICE OF OIL & GAS
601 57TH STREET, SE
CHARLESTON, WV 25304



DATE: July 17, 2018

OPERATORS WELL NO. GREER 1S-4HM (AS-DRILLED)

API WELL NO. 47-051-01889

STATE COUNTY PERMIT STATE COUNTY PERMIT

LOCATION ELEVATION 1251' WATERSHED (HUC 10) FRENCH CREEK - OHIO RIVER (UNDEFINED)

DISTRICT FRANKLIN COUNTY MARSHALL

QUADRANGLE POWHATAN POINT 7.5' (SH) NEW MARTINSVILLE 7.5' (BH) LEASE NUMBER SEE ATTACHED PG 2 OF 3 AND PG 3 OF 3

SURFACE OWNER PPG INDUSTRIES, INC. ACREAGE 42.18

OIL & GAS ROYALTY OWNER PPG INDUSTRIES, INC., ET AL LEASE ACREAGE 455.57

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE (SPECIFY) _____

TARGET FORMATION MARCELLUS ESTIMATED DEPTH TVD 6,477' TMD:12,925'

WELL OPERATOR TUG HILL OPERATING, LLC DESIGNATED AGENT DIANNA STAMPER CT CORPORATION SYSTEM

ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107 ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313

COUNTY NAME
PERMIT

LATITUDE 39° 47' 30" GREER LEASE
WELL NO. 1S-4HM
455.57± ACRES



Solutions from the ground up.
P.O. Box 150 & 12 Veithem Drive • Glenville, WV 26031 • (304) 482-5834
www.slsurvey.com

- BORE PATH BASED ON GRID NORTH.
- NO WATER WELLS WITHIN 250' OF WELL WERE FOUND, NO DWELLINGS WITHIN 625' OF PAD CENTER WERE FOUND.
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LEGEND

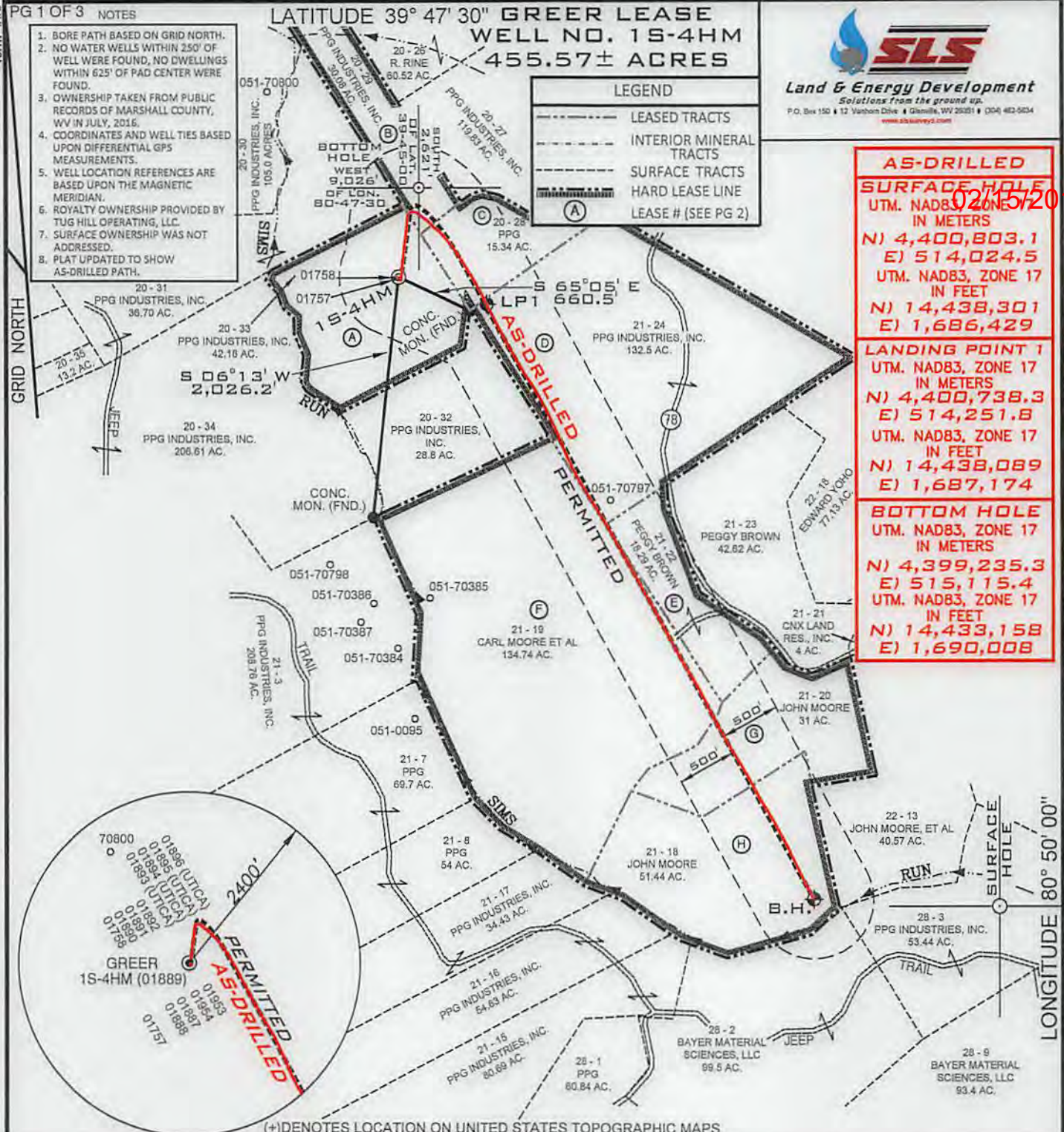
- LEASED TRACTS
- INTERIOR MINERAL TRACTS
- SURFACE TRACTS
- HARD LEASE LINE
- LEASE # (SEE PG 2)

AS-DRILLED

SURFACE HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,400,803.1
E) 514,024.5
UTM. NAD83, ZONE 17
IN FEET
N) 14,438,301
E) 1,686,429

LANDING POINT 1
UTM. NAD83, ZONE 17
IN METERS
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BOTTOM HOLE
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(+) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS

FILE NUMBER 8837

DRAWING NUMBER 8837ADG1S4HM.dwg

SCALE 1" = 1200'

MINIMUM DEGREE OF ACCURACY 1/2500

PROVEN SOURCE OF ELEVATION SUBMETER MAPPING
GRADE GPS

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

P.S. 677 *Gregory A. Smith*



WVDEP
OFFICE OF OIL & GAS
601 57TH STREET, SE
CHARLESTON, WV 25304



DATE: July 17, 2018

OPERATORS WELL NO. GREER 1S-4HM (AS-DRILLED)

API WELL NO. 47-051-01889

STATE COUNTY PERMIT

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

LOCATION ELEVATION 1251' WATERSHED (HUC 10) FRENCH CREEK - OHIO RIVER (UNDEFINED)

DISTRICT FRANKLIN COUNTY MARSHALL

QUADRANGLE POWHATAN POINT 7.5' (SH) NEW MARTINSVILLE 7.5' (BH) LEASE NUMBER SEE ATTACHED PG 2 OF 3 AND PG 3 OF 3

SURFACE OWNER PPG INDUSTRIES, INC. ACREAGE 42.18

OIL & GAS ROYALTY OWNER PPG INDUSTRIES, INC., ET AL LEASE ACREAGE 455.57

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE (SPECIFY) _____

TARGET FORMATION MARCELLUS PLUG & ABANDON CLEAN OUT & REPLUG

WELL OPERATOR TUG HILL OPERATING, LLC ESTIMATED DEPTH TVD 6,477' TMD:12,925'

DESIGNATED AGENT DIANNA STAMPER

ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107 ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313

COUNTY NAME PERMIT

- BORE PATH BASED ON GRID NORTH.
- NO WATER WELLS WITHIN 250' OF WELL WERE FOUND, NO DWELLINGS WITHIN 625' OF AWD CENTER WERE FOUND.
- OWNERSHIP TAKEN FROM PUBLIC RECORDS OF MARSHALL COUNTY, WV IN JULY, 2018.
- COORDINATES AND WELL TIES BASED UPON DIFFERENTIAL GPS MEASUREMENTS.
- WELL LOCATION REFERENCES ARE BASED UPON THE MAGNETIC.
- PROPERTY OWNERSHIP PROVIDED BY TUG HILL OPERATING, LLC.
- SURFACE OWNERSHIP WAS NOT ADDRESSED.
- PLAT UPLOADED TO SHOW A2-DRIILLED PATH.

02/15/2019

LATITUDE 39° 47' 30" GREEN LEASE
WELL NO. 12-4HM
452.27± ACRES



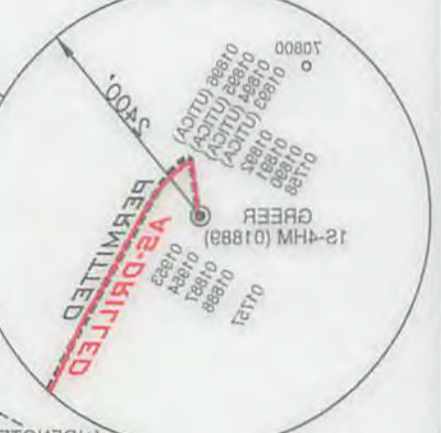
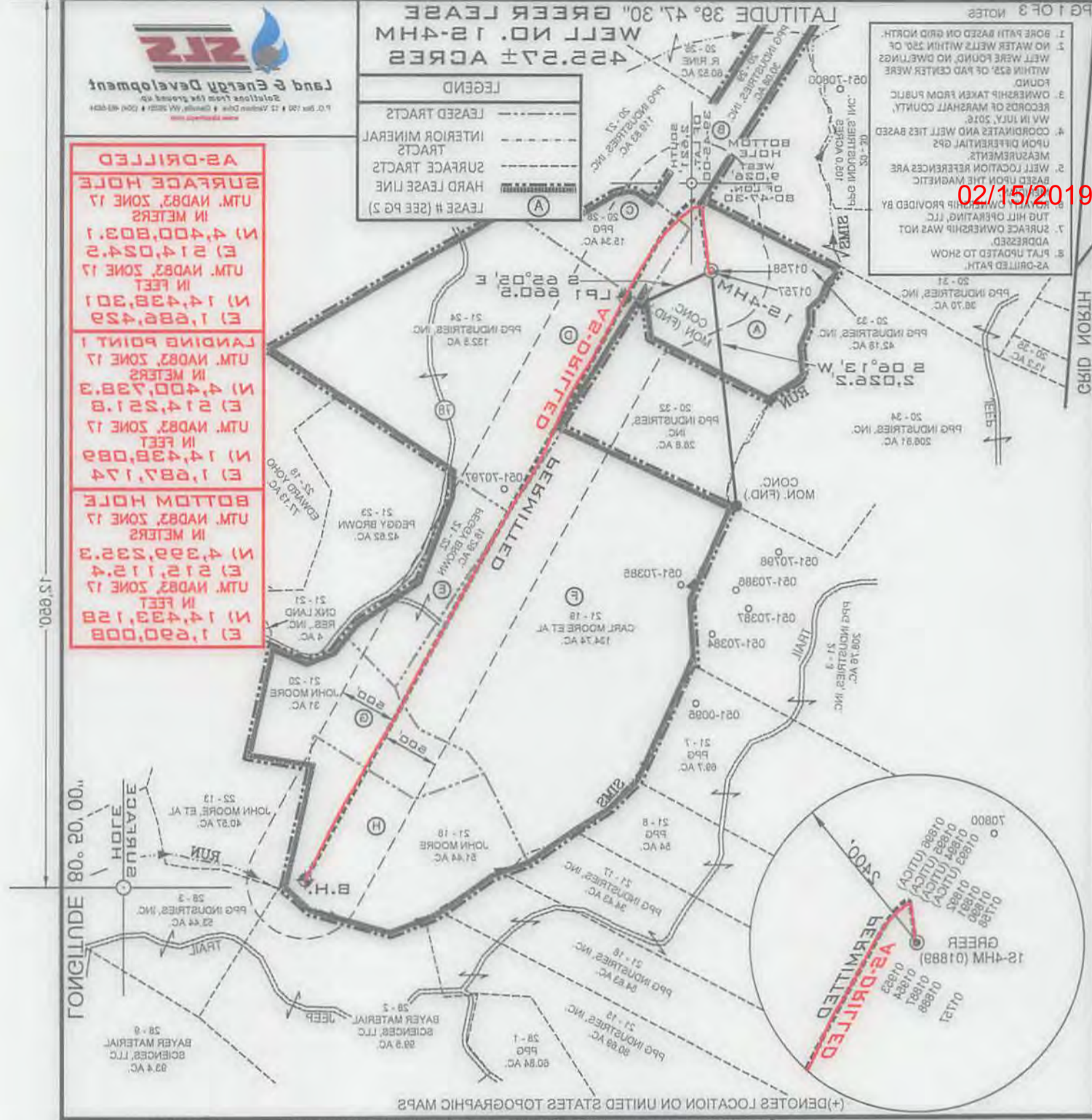
Solutions from the ground up
1700 Park 122 | Winchester, KY 40391 | 606.325.4444

LEGEND

| | |
|-------------------------|-----|
| LEASING TRACTS | --- |
| INTERIOR MINERAL TRACTS | --- |
| SURFACE TRACTS | --- |
| HARD LEASE LINE | --- |
| LEASE # (SEE PG 2) | (A) |

A2-DRIILLED SURFACE HOLE
UTM. NAD83, ZONE 17
IN METERS
(N) 4,400,803.1
(E) 214,024.2
UTM. NAD83, ZONE 17
IN FEET
(N) 14,438,301
(E) 1,886,429

BOTTOM HOLE
UTM. NAD83, ZONE 17
IN METERS
(N) 4,399,235.3
(E) 212,124
UTM. NAD83, ZONE 17
IN FEET
(N) 14,433,128
(E) 1,890,008



(+) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION



Gregory A. Smith
P.S. 877



| | |
|----------------------------|------------------|
| FILE NUMBER | 8837 |
| DRAWING NUMBER | 8837ADG124HM.dwg |
| SCALE | 1" = 1200' |
| MINIMUM DEGREE OF ACCURACY | 1/2500 |
| PROVEN SOURCE OF ELEVATION | SUBMETER MAPPING |
| GRADE GPS | |

WDEP
OFFICE OF OIL & GAS
801 5TH STREET, SE
CHARLESTON, WV 25304

DATE: July 17, 2018
OPERATORS WELL NO. GREER 12-4HM (A2-DRIILLED)
API WELL NO. 47-051-01889
PERMIT COUNTY STATE

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

LOCATION ELEVATION 1251', WATERSHED (HUC 10) FRENCH CREEK - OHIO RIVER (UNDEFINDED)
DISTRICT FRANKLIN COUNTY MARSHALL
QUADRANGLE NEW MARTINSVILLE 7.5 (8H) LEASE NUMBER SEE ATTACHED PG 2 OF 3 AND PG 3 OF 3

SURFACE OWNER PPG INDUSTRIES, INC. ACREAGE 42.18
OIL & GAS ROYALTY OWNER PPG INDUSTRIES, INC., ET AL LEASE ACREAGE 452.27

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
PERFORM NEW FORMATION OTHER PHYSICAL CHANGE (SPECIFY) _____

TARGET FORMATION MARCELLUS
WELL OPERATOR TUG HILL OPERATING, LLC
DESIGNATED AGENT CT CORPORATION SYSTEM
DIANNA STAMPER
ESTIMATED DEPTH TVD 6477', TMD: 12,925'
PLUG & ABANDON CLEAN OUT & REPLUG

ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500
FORT WORTH, TX 76107
CHARLESTON, WV 25313
Address 5400 D BIG TYLER ROAD
CT CORPORATION SYSTEM
DIANNA STAMPER

GREER WELL NO. 1 S-4HM
WELL PLAT LEASE INFORMATION

| Lease No. | Tag | Parcel | Oil & Gas Royalty Owner | DEED BOOK/PG | |
|-----------|-----|---------|--|--------------|-----|
| 10*14300 | A | 5-20-33 | PPG INDUSTRIES, INC. | 725 | 123 |
| 10*14312 | A | 5-20-33 | JAMIE LU BENSON | 790 | 531 |
| 10*14313 | A | 5-20-33 | TERRI JEAN GODDARD | 790 | 585 |
| 10*14314 | A | 5-20-33 | RALPH BLACHLY | 790 | 529 |
| 10*14315 | A | 5-20-33 | MARGARET ROSS | 790 | 527 |
| 10*14316 | A | 5-20-33 | ANDREW GERST | 791 | 645 |
| 10*14317 | A | 5-20-33 | HAROLD BLACHLY | 791 | 643 |
| 10*14318 | A | 5-20-33 | MARTHA BLACHLY-CROSS | 792 | 112 |
| 10*14319 | A | 5-20-33 | JACK J. PFALZGRAF | 792 | 118 |
| 10*14320 | A | 5-20-33 | SANDRA CHEYNEY | 792 | 91 |
| 10*14321 | A | 5-20-33 | HERBERT BLACHLY | 792 | 102 |
| 10*14322 | A | 5-20-33 | LOIS KAY MORFORD | 792 | 110 |
| 10*14327 | A | 5-20-33 | ROBERT D. OKEY | 792 | 646 |
| 10*14328 | A | 5-20-33 | RAE ELLEN STUART | 796 | 38 |
| 10*14329 | A | 5-20-33 | TONDA ROTHENBUHLER | 796 | 40 |
| 10*14331 | A | 5-20-33 | CHRISTINA JEAN RIOUX | 796 | 70 |
| 10*14332 | A | 5-20-33 | MICHAEL EDWARD BARTH | 796 | 68 |
| 10*14333 | A | 5-20-33 | DEAN ROTHENBUHLER | 796 | 42 |
| 10*14355 | A | 5-20-33 | DEWAYNE STARKEY | 815 | 228 |
| 10*14356 | A | 5-20-33 | FREDRIC RICHTER & BETTY RICHTER | 822 | 270 |
| 10*14362 | A | 5-20-33 | CAROLYN STARKEY | 827 | 226 |
| 10*14368 | A | 5-20-33 | JOSEPH LONG | 836 | 106 |
| 10*14371 | A | 5-20-33 | THOMAS F LONG AND JENNIFER LONG | 842 | 398 |
| 10*14372 | A | 5-20-33 | UNITED CHURCH HOMES INC | 846 | 408 |
| 10*14377 | A | 5-20-33 | JOSEPH A LONG | 849 | 519 |
| 10*14387 | A | 5-20-33 | JOHN F LONG AND PAM LONG | 849 | 542 |
| 10*14388 | A | 5-20-33 | IMMANUEL CHURCH OF THE UNITED CHURCH OF CHRIST | 849 | 513 |
| 10*14398 | A | 5-20-33 | JAN KAFFENBERGER | 860 | 434 |
| 10*14399 | A | 5-20-33 | RITA ANN DOEBERT AND RONALD DOEBERT | 860 | 437 |
| 10*14400 | A | 5-20-33 | COLEEN SLAGLE AND FRANKLIN SLAGLE | 860 | 440 |
| 10*14401 | A | 5-20-33 | IMELDA J SCURLOCK | 860 | 443 |
| 10*14402 | A | 5-20-33 | CAROL F WILSON AND RICHARD WILSON | 860 | 446 |
| 10*14403 | A | 5-20-33 | SUE WHITE | 862 | 429 |
| 10*14404 | A | 5-20-33 | DON FORGRAVES | 862 | 426 |
| 10*14405 | A | 5-20-33 | JOHN WHITE | 862 | 423 |
| 10*14395 | A | 5-20-33 | WILLIAM V BUCKNOR | 862 | 421 |
| 10*14394 | A | 5-20-33 | LESLIE F BUCKNOR | 862 | 419 |
| 10*14408 | A | 5-20-33 | LORNA M LONG MORGAN | 864 | 323 |
| 10*14409 | A | 5-20-33 | JAMES C LONG AND PATTI LONG | 864 | 326 |
| 10*14410 | A | 5-20-33 | HENRY T LONG | 867 | 385 |
| 10*14411 | A | 5-20-33 | THOMAS WHITE, ESQ., SPECIAL COMMISSIONER | 870 | 34 |
| 10*14412 | A | 5-20-33 | THE VILLAGE NETWORK | 872 | 203 |
| 10*14413 | A | 5-20-33 | JUANITA SANDIFER | 872 | 206 |
| 10*14416 | A | 5-20-33 | KATHERINE ANN WILLIAMS COTHRAN | 879 | 1 |
| 10*14419 | A | 5-20-33 | CROSSROAD CHILD AND FAMILY SERVICES | 887 | 105 |
| 10*15734 | A | 5-20-33 | GENEVIEVE L LONG | 904 | 13 |
| 10*16355 | A | 5-20-33 | JAMES P. LONG AND LINDA LONG | 904 | 10 |
| 10*15766 | A | 5-20-33 | JOHN J. POZENEL | 904 | 7 |
| 10*15762 | A | 5-20-33 | DAWN PETROVICH | 904 | 4 |
| 10*16357 | A | 5-20-33 | DEANNA M. CAMPBELL | 904 | 1 |
| 10*15760 | A | 5-20-33 | DIEDRE WINGER | 903 | 645 |
| 10*16358 | A | 5-20-33 | ANNE MARIE KRAMER | 903 | 648 |
| 10*15761 | A | 5-20-33 | CAMERON CEMETERY ASSOCIATION | 903 | 642 |
| 10*16230 | A | 5-20-33 | TH Exploration, LLC | 900 | 134 |
| 10*15763 | A | 5-20-33 | BONNIEJ. SELDERS | 904 | 34 |
| 10*16356 | A | 5-20-33 | DARYL S. BUCKNOR | 904 | 31 |
| 10*15765 | A | 5-20-33 | JOHN A. BUCKNOR | 904 | 16 |
| 10*15764 | A | 5-20-33 | JAMES E. BUCKNOR | 904 | 28 |
| 10*14381 | A | 5-20-33 | WILLIAM LONG | 792 | 95 |
| 10*14300 | B | 5-20-29 | PPG INDUSTRIES, INC. | 725 | 123 |
| 10*14307 | B | 5-20-29 | SALLY CYNTHIA HOPKINS | 777 | 572 |
| 10*14308 | B | 5-20-29 | MARY E. BASSETT | 779 | 492 |
| 10*14309 | B | 5-20-29 | ROBERT B. THOMAS | 779 | 484 |
| 10*14310 | B | 5-20-29 | JEAN C. THOMAS | 781 | 614 |
| 10*14324 | B | 5-20-29 | RUTH E. BASSETT MEADOWS | 792 | 100 |
| 10*14325 | B | 5-20-29 | ELIZABETH ANN STRAUSBAUGH | 792 | 104 |

02/15/2019

WELL OPERATOR TUG HILL OPERATING, LLC
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500
FORT WORTH, TX 76107

DESIGNATED AGENT DIANNA STAMPER
CT CORPORATION SYSTEM
ADDRESS 5400 D BIG TYLER ROAD
CHARLESTON, WV 25313

WELL PLAT LEASE INFORMATION
GREER WELL NO. 18-4HM

| Lease No. | Trg | Parcel | Oil & Gas Royalty Owner | DEED BOOK/Pg |
|-----------|-----|---------|--|--------------|
| 10*14325 | B | 2-20-29 | ELIZABETH ANN STRAUBAUGH | 752 |
| 10*14324 | B | 2-20-29 | RUTH E. BASSETT MEADOWS | 752 |
| 10*14310 | B | 2-20-29 | LEAN C. THOMAS | 781 |
| 10*14309 | B | 2-20-29 | ROBERT B. THOMAS | 779 |
| 10*14308 | B | 2-20-29 | MARY E. BASSETT | 779 |
| 10*14307 | B | 2-20-29 | SALLY CYNTHIA HOPKINS | 777 |
| 10*14300 | B | 2-20-29 | PPG INDUSTRIES, INC. | 752 |
| 10*14281 | A | 2-20-33 | WILLIAM LONG | 752 |
| 10*12764 | A | 2-20-33 | JAMES E. BUCKNOR | 904 |
| 10*12762 | A | 2-20-33 | JOHN A. BUCKNOR | 904 |
| 10*12762 | A | 2-20-33 | JOHN A. BUCKNOR | 16 |
| 10*12762 | A | 2-20-33 | DARYL S. BUCKNOR | 904 |
| 10*12763 | A | 2-20-33 | BONNIE L. SELDERS | 904 |
| 10*12730 | A | 2-20-33 | TH Exploration, LLC | 900 |
| 10*12761 | A | 2-20-33 | CAMERON CEMETERY ASSOCIATION | 903 |
| 10*12628 | A | 2-20-33 | ANNE MARIE KRAMER | 903 |
| 10*12760 | A | 2-20-33 | DIEDRE WINGER | 903 |
| 10*12627 | A | 2-20-33 | DEANNA M. CAMPBELL | 904 |
| 10*12762 | A | 2-20-33 | DAWN PETROVICH | 904 |
| 10*12766 | A | 2-20-33 | JOHN L. POZANEL | 904 |
| 10*12622 | A | 2-20-33 | JAMES P. LONG AND LINDA LONG | 904 |
| 10*12734 | A | 2-20-33 | GENEVIEVE L. LONG | 904 |
| 10*14419 | A | 2-20-33 | CROSSROAD CHILD AND FAMILY SERVICES | 887 |
| 10*14416 | A | 2-20-33 | KATHERINE ANN WILLIAMS COHRAN | 879 |
| 10*14413 | A | 2-20-33 | LUANITA SANDIFER | 872 |
| 10*14412 | A | 2-20-33 | THE VILLAGE NETWORK | 872 |
| 10*14411 | A | 2-20-33 | THOMAS WHITE, ESQ., SPECIAL COMMISSIONER | 870 |
| 10*14410 | A | 2-20-33 | HENRY T. LONG | 882 |
| 10*14409 | A | 2-20-33 | JAMES C. LONG AND PATTI LONG | 884 |
| 10*14408 | A | 2-20-33 | LORNA M. LONG MORGAN | 884 |
| 10*14394 | A | 2-20-33 | LESLIE F. BUCKNOR | 882 |
| 10*14392 | A | 2-20-33 | WILLIAM V. BUCKNOR | 882 |
| 10*14402 | A | 2-20-33 | JOHN WHITE | 882 |
| 10*14404 | A | 2-20-33 | DON FORGRAVES | 882 |
| 10*14403 | A | 2-20-33 | SUE WHITE | 882 |
| 10*14402 | A | 2-20-33 | CAROL F. WILSON AND RICHARD WILSON | 880 |
| 10*14401 | A | 2-20-33 | IMELDA J. SCURLOCK | 880 |
| 10*14400 | A | 2-20-33 | COLEEN STAGLE AND FRANKLIN STAGLE | 880 |
| 10*14399 | A | 2-20-33 | RITA ANN DOBERT AND RONALD DOBERT | 880 |
| 10*14398 | A | 2-20-33 | JAN KAFFENBERGER | 880 |
| 10*14388 | A | 2-20-33 | IMMANUEL CHURCH OF THE UNITED CHURCH OF CHRIST | 849 |
| 10*14387 | A | 2-20-33 | JOHN F. LONG AND PAM LONG | 849 |
| 10*14377 | A | 2-20-33 | JOSEPH A. LONG | 849 |
| 10*14372 | A | 2-20-33 | UNITED CHURCH HOMES INC | 846 |
| 10*14371 | A | 2-20-33 | THOMAS F. LONG AND LENNIFFER LONG | 842 |
| 10*14368 | A | 2-20-33 | JOSEPH LONG | 836 |
| 10*14362 | A | 2-20-33 | CAROLYN STARKY | 827 |
| 10*14356 | A | 2-20-33 | FREDRIC RICHTER & BETTY RICHTER | 822 |
| 10*14352 | A | 2-20-33 | DEWAYNE STARKY | 812 |
| 10*14333 | A | 2-20-33 | DEAN ROTHENBUHLER | 796 |
| 10*14332 | A | 2-20-33 | MICHAEL EDWARD BARTH | 796 |
| 10*14331 | A | 2-20-33 | CHRISTINA LEAN RIOUX | 796 |
| 10*14329 | A | 2-20-33 | TONDA ROTHENBUHLER | 796 |
| 10*14328 | A | 2-20-33 | RAE ELLEN STUART | 796 |
| 10*14327 | A | 2-20-33 | ROBERT D. OKY | 792 |
| 10*14325 | A | 2-20-33 | LOIS KAY MORFORD | 792 |
| 10*14321 | A | 2-20-33 | HERBERT BLACHLY | 792 |
| 10*14320 | A | 2-20-33 | SANDRA CHEYNEY | 792 |
| 10*14319 | A | 2-20-33 | JACK L. PFALZGRAF | 792 |
| 10*14318 | A | 2-20-33 | MARTHA BLACHLY-CROSS | 792 |
| 10*14317 | A | 2-20-33 | HAROLD BLACHLY | 791 |
| 10*14316 | A | 2-20-33 | ANDREW GERST | 791 |
| 10*14312 | A | 2-20-33 | MARGARET ROSS | 790 |
| 10*14314 | A | 2-20-33 | RALPH BLACHLY | 790 |
| 10*14313 | A | 2-20-33 | TERRI LEAN GODDARD | 790 |
| 10*14312 | A | 2-20-33 | JAMIE LU BENSON | 790 |
| 10*14300 | A | 2-20-33 | PPG INDUSTRIES, INC. | 752 |

02/15/2019

GREER WELL NO. 1S-4HM
WELL PLAT LEASE INFORMATION

| Lease No. | Tag | Parcel | Oil & Gas Royalty Owner | DEED BOOK/PG | |
|-----------|-----|---------|--|--------------|-----|
| 10*14326 | B | 5-20-29 | JANET LEA BLANKENSHIP | 792 | 580 |
| 10*14300 | C | 5-20-28 | PPG INDUSTRIES, INC. | 725 | 123 |
| 10*14307 | C | 5-20-28 | SALLY CYNTHIA HOPKINS | 777 | 572 |
| 10*14308 | C | 5-20-28 | MARY E. BASSETT | 779 | 492 |
| 10*14309 | C | 5-20-28 | ROBERT B. THOMAS | 779 | 484 |
| 10*14310 | C | 5-20-28 | JEAN C. THOMAS | 781 | 614 |
| 10*14324 | C | 5-20-28 | RUTH E. BASSETT MEADOWS | 792 | 100 |
| 10*14325 | C | 5-20-28 | ELIZABETH ANN STRAUSBAUGH | 792 | 104 |
| 10*14326 | C | 5-20-28 | JANET LEA BLANKENSHIP | 792 | 580 |
| 10*14300 | D | 5-21-24 | PPG INDUSTRIES, INC. | 725 | 123 |
| 10*14300 | D | 5-21-24 | PPG INDUSTRIES, INC. | 725 | 123 |
| 10*14948 | E | 5-21-22 | DANA NEAL SMALLWOOD | 850 | 520 |
| 10*14947 | E | 5-21-22 | PEGGY BOWEN BROWN | 850 | 522 |
| 10*14933 | F | 5-21-19 | CLARA LOU HERRICK AND EDWIN A. HERRICK | 850 | 531 |
| 10*14934 | F | 5-21-19 | GLENDA ROSE MOORE | 849 | 564 |
| 10*14935 | F | 5-21-19 | JOHN M MOORE AND MELANIE A MOORE | 849 | 562 |
| 10*14936 | F | 5-21-19 | LINDA LORRAINE MOORE | 850 | 533 |
| 10*14937 | G | 5-21-20 | JOHN M MOORE, MELANIE A MOORE | 850 | 524 |
| 10*14937 | G | 5-21-20 | JOHN M MOORE, MELANIE A MOORE | 850 | 524 |
| 10*14937 | H | 5-21-18 | JOHN M MOORE, MELANIE A MOORE | 850 | 524 |

02/15/2019

WELL OPERATOR TUG HILL OPERATING, LLC
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500
FORT WORTH, TX 76107

DESIGNATED AGENT DIANNA STAMPER
CT CORPORATION SYSTEM
ADDRESS 5400 D BIG TYLER ROAD
CHARLESTON, WV 25313

WELL PLAT LEASE INFORMATION
 GREER WELL NO. 18-4HM

| Lease No. | Tag | Parcel | Oil & Gas Royalty Owner | DEED BOOK/PAGE |
|-----------|-----|---------|--|----------------|
| 10*14937 | H | 2-21-18 | JOHN M MOORE, MELANIE A MOORE | 820 254 |
| 10*14937 | G | 2-21-20 | JOHN M MOORE, MELANIE A MOORE | 820 254 |
| 10*14937 | G | 2-21-20 | JOHN M MOORE, MELANIE A MOORE | 820 254 |
| 10*14937 | G | 2-21-20 | JOHN M MOORE, MELANIE A MOORE | 820 254 |
| 10*14936 | F | 2-21-19 | LINDA LORRAINE MOORE | 820 233 |
| 10*14935 | F | 2-21-19 | JOHN M MOORE AND MELANIE A MOORE | 849 262 |
| 10*14934 | F | 2-21-19 | GLENDA ROSE MOORE | 849 264 |
| 10*14933 | F | 2-21-19 | CLARA LOU HERRICK AND EDWIN A. HERRICK | 820 231 |
| 10*14947 | E | 2-21-22 | PEGGY BOWEN BROWN | 820 252 |
| 10*14948 | E | 2-21-22 | DANA NEAL SMALLWOOD | 820 250 |
| 10*14900 | D | 2-21-24 | PPG INDUSTRIES, INC. | 725 123 |
| 10*14900 | D | 2-21-24 | PPG INDUSTRIES, INC. | 725 123 |
| 10*14926 | C | 2-20-28 | JANET LEA BLANKENSHIP | 792 280 |
| 10*14925 | C | 2-20-28 | ELIZABETH ANN STRAUSBAUGH | 792 104 |
| 10*14924 | C | 2-20-28 | RUTH E. BASSETT MEADOWS | 792 100 |
| 10*14910 | C | 2-20-28 | JEAN C. THOMAS | 781 614 |
| 10*14909 | C | 2-20-28 | ROBERT B. THOMAS | 779 484 |
| 10*14908 | C | 2-20-28 | MARY E. BASSETT | 779 492 |
| 10*14907 | C | 2-20-28 | SALLY CYNTHIA HOPKINS | 777 272 |
| 10*14900 | C | 2-20-28 | PPG INDUSTRIES, INC. | 725 123 |
| 10*14926 | B | 2-20-29 | JANET LEA BLANKENSHIP | 792 280 |

02/15/2019