



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street, S.E.
Charleston, WV 25304
(304) 926-0450
fax: (304) 926-0452

Jim Justice , Governor
Austin Caperton , Cabinet Secretary
www.dep.wv.gov

Tuesday, May 09, 2017
WELL WORK PERMIT
Horizontal 6A / New Drill

TUG HILL OPERATING, LLC (A)
1320 SOUTH UNIVERSITY DRIVE, SUITE 500

FORT WORTH , TX 76107

Re: Permit approval for HEAVEN HILL UNIT 2-7HU
47-051-01911-00-00

This well work permit is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926- 0450.



James A. Martin
Chief

Operator's Well Number: HEAVEN HILL UNIT 2-7HU
Farm Name: CHARLES R. HAGEDORN, JR., ET UX
U.S. WELL NUMBER: 47-051-01911-00-00
Horizontal 6A / New Drill
Date Issued: 5/9/2017

Promoting a healthy environment.

05/12/2017

PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.
2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than one hundred (100) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. 24 hours prior to the initiation of the completion process the operator shall notify the Chief or his designee.
8. During the completion process the operator shall monitor annular pressures and report any anomaly noticed to the chief or his designee immediately.
9. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
10. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.

PERMIT CONDITIONS

11. The operator shall provide to the Office of Oil and Gas the dates of each of the following within 30 days of their occurrence: completion of construction of the well pad, commencement of drilling, cessation of drilling, completion of any other permitted well work, and completion of the well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov.



west virginia department of environmental protection

Oil and Gas Conservation Commission
601 57th Street, SE Charleston, WV 25304
(304)926-0499, Ext 1656

Jim Justice, Governor
Barry K. Lay, Chairman
ogcc.wv.gov

March 27, 2017

Department of Environmental Protection
Office of Oil and Gas
Charleston, WV 25304

RE: Application for Deep Well Permit – API #47-051-01911

COMPANY: Tug Hill Operating, LLC

FARM: Charles R. Hagedorn, Jr., et ux - Heaven Hill Unit 2 – 7HU

COUNTY: Marshall DISTRICT: Meade QUAD: Glen Easton

The deep well review of the application for the above company is **Approved to drill to Trenton for Point Pleasant completion.**

The applicant has complied with the provision of Chapter 22C-9, of the Code of West Virginia, nineteen hundred and thirty-one (1931), as amended, Oil and Gas Conservation Commission as follows:

1. Comments to Notice of Deviation filed? no
2. Provided a certified copy of duly acknowledged and recorded consent and easement form from all surface owners; yes
3. Provided a tabulation of all deep wells within one mile of the proposed location, including the API number of all deep wells, well name, and the name and address of the operator; *yes
Docket 244-233 Exception location hearing
4. Provided a plat showing that the proposed location is a distance of 400+ feet from the nearest lease line or unit boundary and showing the following wells drilled to or capable of producing from the objective formation within 3,000 feet of the proposed location.

Sincerely,

Cindy Raines
Administrator

Heaven Hill Pad
1,250' spacing between lateral of 47-051-01910 6HU
1,250' spacing between lateral of 47-051-01912 8HU

WW-6B
(04/15)

API NO. 47-051 - 01911
OPERATOR WELL NO. Heaven Hill Unit 2-7HU
Well Pad Name: Heaven Hill Unit 2

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator: Tug Hill Operating, LLC 494510851 Marshall Meade Glen Easton 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Heaven Hill Unit 2-7HU Well Pad Name: Heaven Hill Unit 2

3) Farm Name/Surface Owner: Charles R. Hagedorn, Jr., et ux Public Road Access: Blake Ridge Rd (Co. Rt. 21/3)

4) Elevation, current ground: 1350' Elevation, proposed post-construction: 1331'

5) Well Type (a) Gas X Oil Underground Storage

Other

(b) If Gas Shallow Deep X

Horizontal X

6) Existing Pad: Yes or No No

Handwritten signature and date: JW 4/28/17

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Point Pleasant is the target formation at a depth of 11,504' - 11,634' thickness of 130' and anticipated pressure of approx. 7500 psi

8) Proposed Total Vertical Depth: 11,784'

9) Formation at Total Vertical Depth: Trenton

10) Proposed Total Measured Depth: 20,275'

11) Proposed Horizontal Leg Length: 8,358'

12) Approximate Fresh Water Strata Depths: 70', 1066'

13) Method to Determine Fresh Water Depths: Offset well reports or noticeable flow at the flowline or when need to start soaping

14) Approximate Saltwater Depths: 2167'

15) Approximate Coal Seam Depths: Sewickly Coal - 969' and Pittsburgh Coal - 1059'

16) Approximate Depth to Possible Void (coal mine, karst, other): None anticipated

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes X No

(a) If Yes, provide Mine Info: Name: Marshall County Coal Co. / Marshall County Mine

Depth: 1059' TVD and 291' subsea level

Seam: Pittsburgh #8

Owner: Murray Energy / Consolidated Coal Co.

WW-6B
(04/15)

API NO. 47- 051 - 01911
 OPERATOR WELL NO. Heaven Hill Unit 2-7HU
 Well Pad Name: Heaven Hill Unit 2

18)

CASING AND TUBING PROGRAM

| TYPE | Size (in) | New or Used | Grade | Weight per ft. (lb/ft) | FOOTAGE: For Drilling (ft) | INTERVALS: Left in Well (ft) | CEMENT: Fill-up (Cu. Ft.)/CTS |
|--------------|-----------|-------------|-------|------------------------|----------------------------|------------------------------|-------------------------------|
| Conductor | 30" | NEW | BW | BW | 125' | 120' | 259FT^3(CTS) |
| Fresh Water | 20" | NEW | J55 | 106.5# | 1,210' | 1,200' | 1,915ft^3(CTS) |
| Coal | 13 3/8" | NEW | J55 | 54.5# | 2,885' | 2,875' | 2,033ft^3(CTS) |
| Intermediate | 9 5/8" | NEW | J55 | 47# | 10,384' | 10,374' | 3,392ft^3(CTS) |
| Production | 5 1/2" | NEW | HP110 | 23# | 20,285' | 20,275' | 4,821ft^3(CTS) |
| Tubing | 2 7/8" | NEW | P110 | 6.5# | | 11,117' | |
| Liners | | | | | | | |

Handwritten signature and date: 4/28/17

| TYPE | Size (in) | Wellbore Diameter (in) | Wall Thickness (in) | Burst Pressure (psi) | Anticipated Max. Internal Pressure (psi) | Cement Type | Cement Yield (cu. ft./k) |
|--------------|-----------|------------------------|---------------------|----------------------|--|-------------|--------------------------|
| Conductor | 30" | 36" | 1.0 | 2,333 | 1,866 | CLASS A | 1.2 |
| Fresh Water | 20" | 26" | .5 | 2,410 | 1,928 | SEE #24 | 1.2 |
| Coal | 13 3/8" | 17 1/2" | .38 | 2,740 | 2,192 | SEE#24 | 1.2 |
| Intermediate | 9 5/8" | 12 1/4" | .472 | 10,730 | 6,968 | SEE#24 | 1.99 |
| Production | 5 1/2" | 8 1/2" | .415 | 13,580 | 10,864 | SEE#24 | 1.18 |
| Tubing | 2 7/8" | | | 14,530 | 11,624 | | |
| Liners | | | | | | | |

PACKERS

| | | | | |
|-------------|-----|--|--|--|
| Kind: | N/A | | | |
| Sizes: | N/A | | | |
| Depths Set: | N/A | | | |

WW-6B
(10/14)

API NO. 47-051 - 01911
OPERATOR WELL NO. Heaven Hill Unit 2-7HU
Well Pad Name: Heaven Hill Unit 2

me
4/28/17

19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill through the Point Pleasant and TD Pilot Hole 150' into the Trenton. Log vertical section and run a solid cement plug back to proposed KOP. Drill curve and lateral per proposed well plan, run and cement production casing. Perform CBL from 60 deg to surface, make cleanout run, and stimulate.

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

Well to be completed with approximately 21,395,000 lb proppant and 330,782 bbl of water. Max rate = 80 bpm; max psi = 9,000#.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 32.98

22) Area to be disturbed for well pad only, less access road (acres): 4.57

23) Describe centralizer placement for each casing string:

Will run 3 centralizers on surface casing at equal distance. Intermediate will have 1 centralizer every other joint. Production casing will have one centralizer every other joint in lateral, one centralizer every joint through curve, one centralizer every other joint to surface.

24) Describe all cement additives associated with each cement type:

*See Attachment

25) Proposed borehole conditioning procedures:

Will circulate a minimum of 3 hours at TD, short trip to curve, circulate bottoms up, check for flow, POOH

*Note: Attach additional sheets as needed.

WW6B Attachment to #24

Conductor and Fresh Water Casing Cement:*Premium NE-1 + 2% CaCl*

- Premium NE-1 – Class A Portland API Spec
- CaCl – Calcium Chloride

Coal Casing Cement:*Premium NE-1 + 1.5% CaCl + Flake*

- Premium NE-1 – Class A Portland API spec
- CaCl – Calcium Chloride
- CelloFlake

Intermediate Casing Cement:*Lead: Premium NE-1 + 5% BA-90 + .85% R-3 + 3% KCl + .75 gals/100sk FP-13L + 1% MPA-170**Tail: Premium NE-1 + .1% R-3 + 5% KCl + 1% CD-32 + .4% FL-52 + .2% ASA-301 + .6% Sodium Metasilicate*

- Premium NE-1 – Class A Portland API spec
- BA-90 – Gas Migration Mitigator
- R-3 – Cement Retarder
- KCl – Potassium Chloride
- FP-13L – Anti-Foaming Agent
- MPA-170 – Gelling Agent
- CD-32 – Dispersant
- FL-52 – Fluid Loss Agent
- ASA-301 – Free Water Control Agent
- Sodium Metasilicate – Extending Agent

Kick Off Plug:*Class H Cement + 1% CD-32 + .7% Sodium Metasilicate + .1% R-3 + .75 gal/100sk FP-13L*

- CD-32 – Dispersant
- Sodium Metasilicate – Extending Agent
- R-3 – Cement Retarder
- FP-13L – Anti-Foaming Agent

Production Casing Cement:*Lead: 50:50 (Poz:Class H) + .3% R-3 + .3% MPA-250 + .75 gal/100sk FP-13L**Tail: 25:75 (Poz:Class H) + .3% R-3 + .3% MPA-250 + .375 gal/100sk FP-13L*

- R-3 – Cement Retarder
- MPA-250 – Gelling Agent
- FP-13L – Anti-Foaming Agent

Area of Review

Sources of information to Support 35CSR8 - 5.11: 9.3 et seq.

Description of process to identify potential pathways for well communication during hydraulic fracturing activities.

Data Sources Reviewed:

- 1. IHS Well Data service: Public nationwide data service that pulls directly from State agency Oil and Gas databases
- 2. Farm Maps
- 3. Topo Maps: Recent and older (contact WVGES)
- 4. Check with DPS

Contacted Devin Ducoeur 724-705-0444, dducoeur@dpslandservices.com DPS GIS (12/19/2016) to have him make maps of the wellbores with his information. DPS utilizes WVGES maps for their mapping seems it as the best publicly available. See attached map he provided.

Request maps for:

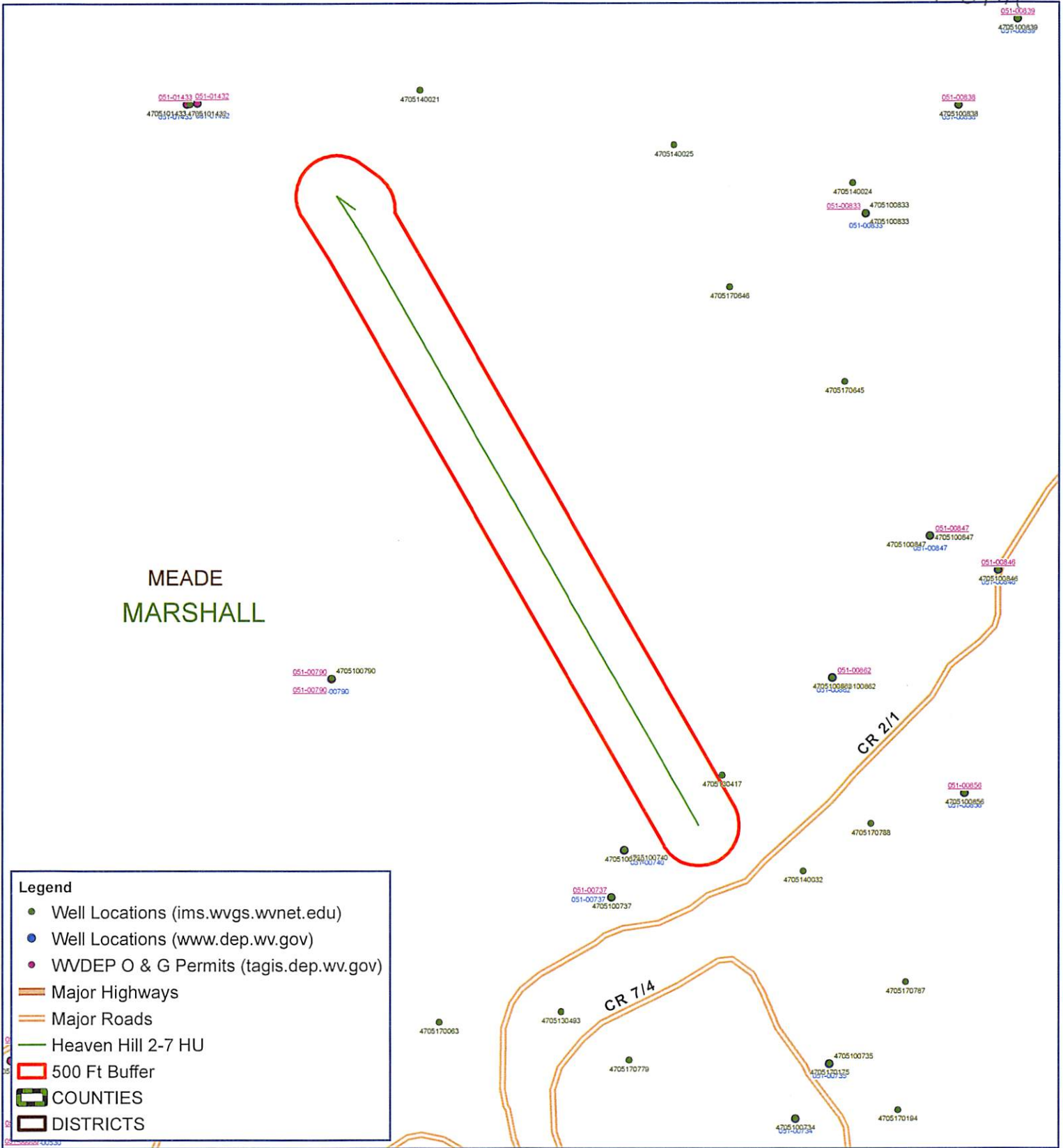
- 1. Wellbore with IHS All Wells Layer
- 2. Map with Farm lines overlain and any well spots identified on Farm Maps
- 3. More recent (1970s vintage) topos and older topos

Discussion with Phil Dinterman WVGES GIS Department (7/15/2016)

- WVGES has plotted every well spot they have access to and are aware of with that contains a coordinate. 30000, 70000, and 90000 series wells are available via the WVGES online map. Some locations aren't great due to vintage and manipulation of maps through time
- 30000 series – any well drilled prior to 1929 – APIs were not assigned to original wells
- 70000 series – Well spots pulled from old Farm line maps that the WVGES has access to
- 90000 series – Any sources that the WVGES has access that shows a well spot but has no additional supporting information. DEP does not have 90000 series on their maps.
- There can be duplication between wells in the 3 series
- Phil indicated that other Operators are providing a screenshot of the WVGES map with their planned well and using that for permits

RECEIVED
Office of Oil and Gas
Page 1 of 2
JAN 03 2017
WV Department of
Environmental Protection
05/12/2017

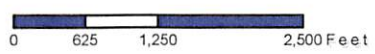
51-01911



- Legend**
- Well Locations (ims.wvgs.wvnet.edu)
 - Well Locations (www.dep.wv.gov)
 - WVDEP O & G Permits (tagis.dep.wv.gov)
 - Major Highways
 - Major Roads
 - Heaven Hill 2-7 HU
 - 500 Ft Buffer
 - COUNTIES
 - DISTRICTS



Heaven Hill Unit 2-7HU Meade District Marshall County, WV



Notes:
All locations are approximate and are for visualization purposes only.



05/12/2017

Conductor and Surface Casing Cement:

Premium NE-1 + 2% CaCl

- Premium NE-1 – Class A Portland API Spec
- CaCl – Calcium Chloride

Intermediate Casing:

Premium NE-1 + 1% CaCl + .25 lb/sk Cello Flake + .25% BA-10A + .75 gals/100sk FP-13L

- Premium NE-1 – Class A Portland API spec
- CaCl – Calcium Chloride
- Cello Flake – Fluid Loss Preventer
- BA-10A – Bonding Agent
- FP-13L – Anti-Foaming Agent

*Covering
FW + Coal*

Production Casing Cement:

Lead: *50:50 (Poz:Premium NE-1) + .2% R-3 + .2% MPA-170 + .75 gal/100sk FP-13L*

Tail: *Premium NE-1 + .5% R-3 + .1% ASA-301 + .25% MPA-170 + .35% BA-10A + .75 gal-100sk FP-13L + 60 lb/sk ASCA-1*

- Poz – Fly Ash
- Premium NE-1 – Class A Portland API spec
- R-3 – Cement Retarder
- MPA-170 – Gelling Agent
- FP-13L – Anti-Foaming Agent
- ASA-301 – Free Water Control Agent
- BA-10A – Bonding Agent
- ASCA-1 – Solubility Additive

RECEIVED
 Office of Oil and Gas
 JAN 08 2017
 WV Department of
 Environmental Protection

11610-15



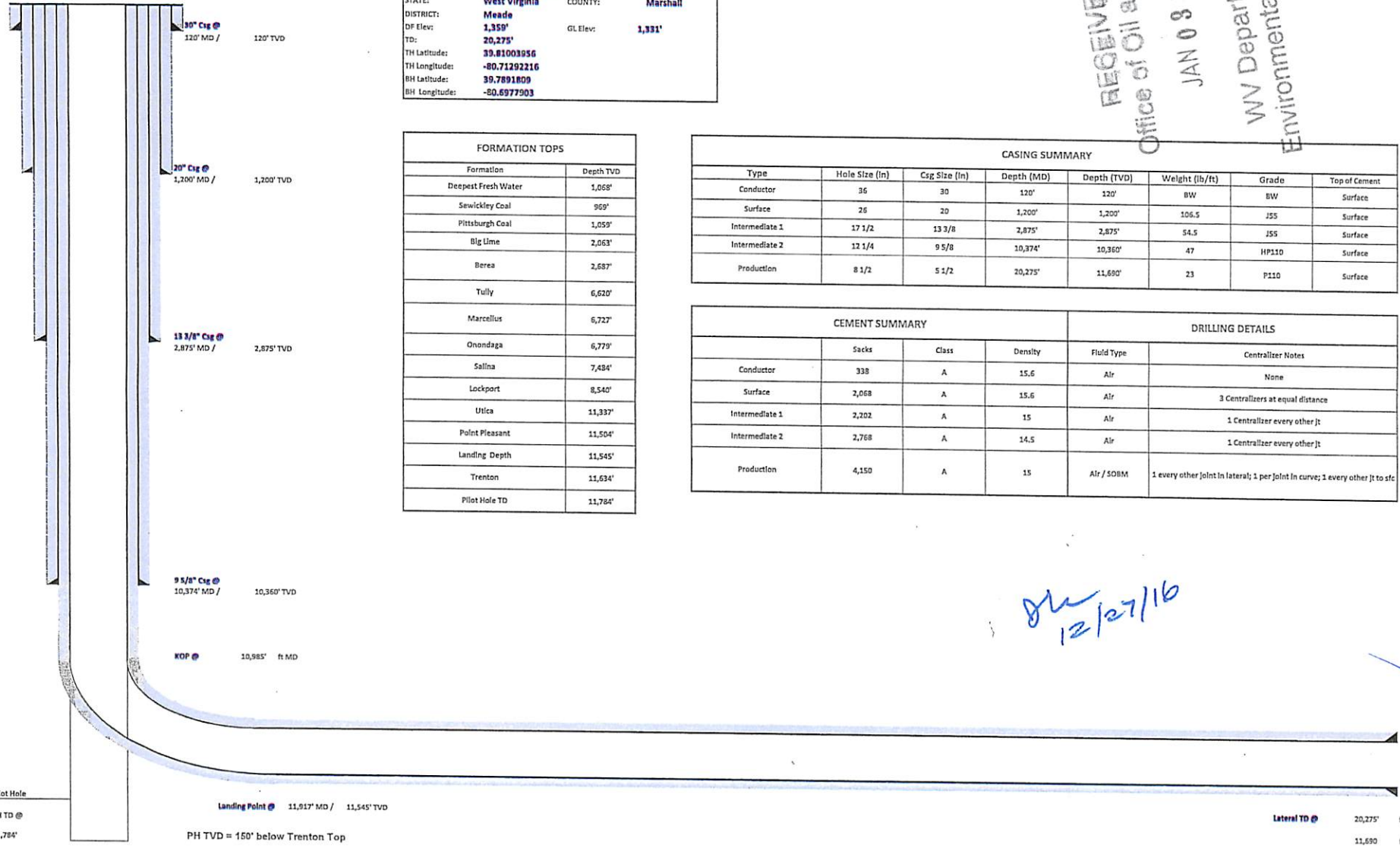
WELL NAME: **Heaven Hill 2-7HU**
 STATE: **West Virginia** COUNTY: **Marshall**
 DISTRICT: **Meade**
 DF Elev: **1,359'** GL Elev: **1,931'**
 TD:
 TH Latitude: **39.81003956**
 TH Longitude: **-80.71292216**
 BH Latitude: **39.7891809**
 BH Longitude: **-80.6977903**

RECEIVED
 Office of Oil and Gas
 JAN 08 2017
 WV Department of
 Environmental Protection

| FORMATION TOPS | |
|---------------------|-----------|
| Formation | Depth TVD |
| Deepest Fresh Water | 1,068' |
| Sewickley Coal | 969' |
| Pittsburgh Coal | 1,059' |
| Big Lime | 2,063' |
| Berea | 2,687' |
| Tully | 6,620' |
| Marcellus | 6,727' |
| Onondaga | 6,779' |
| Salina | 7,484' |
| Lockport | 8,540' |
| Utica | 11,337' |
| Point Pleasant | 11,504' |
| Landing Depth | 11,545' |
| Trenton | 11,634' |
| Pilot Hole TD | 11,784' |

| CASING SUMMARY | | | | | | | |
|----------------|----------------|---------------|------------|-------------|----------------|-------|---------------|
| Type | Hole Size (In) | Csg Size (In) | Depth (MD) | Depth (TVD) | Weight (lb/ft) | Grade | Top of Cement |
| Conductor | 36 | 30 | 120' | 120' | BW | BW | Surface |
| Surface | 26 | 20 | 1,200' | 1,200' | 106.5 | J55 | Surface |
| Intermediate 1 | 17 1/2 | 13 3/8 | 2,875' | 2,875' | 54.5 | J55 | Surface |
| Intermediate 2 | 12 1/4 | 9 5/8 | 10,374' | 10,360' | 47 | HP110 | Surface |
| Production | 8 1/2 | 5 1/2 | 20,275' | 11,690' | 23 | P110 | Surface |

| CEMENT SUMMARY | | | DRILLING DETAILS | | |
|----------------|-------|-------|------------------|-------------|---|
| | Sacks | Class | Density | Fluid Type | Centralizer Notes |
| Conductor | 338 | A | 15.6 | Air | None |
| Surface | 2,068 | A | 15.6 | Air | 3 Centralizers at equal distance |
| Intermediate 1 | 2,202 | A | 15 | Air | 1 Centralizer every other jt |
| Intermediate 2 | 2,768 | A | 14.5 | Air | 1 Centralizer every other jt |
| Production | 4,150 | A | 15 | Air / SOBMM | 1 every other joint in lateral; 1 per joint in curve; 1 every other jt to sfc |



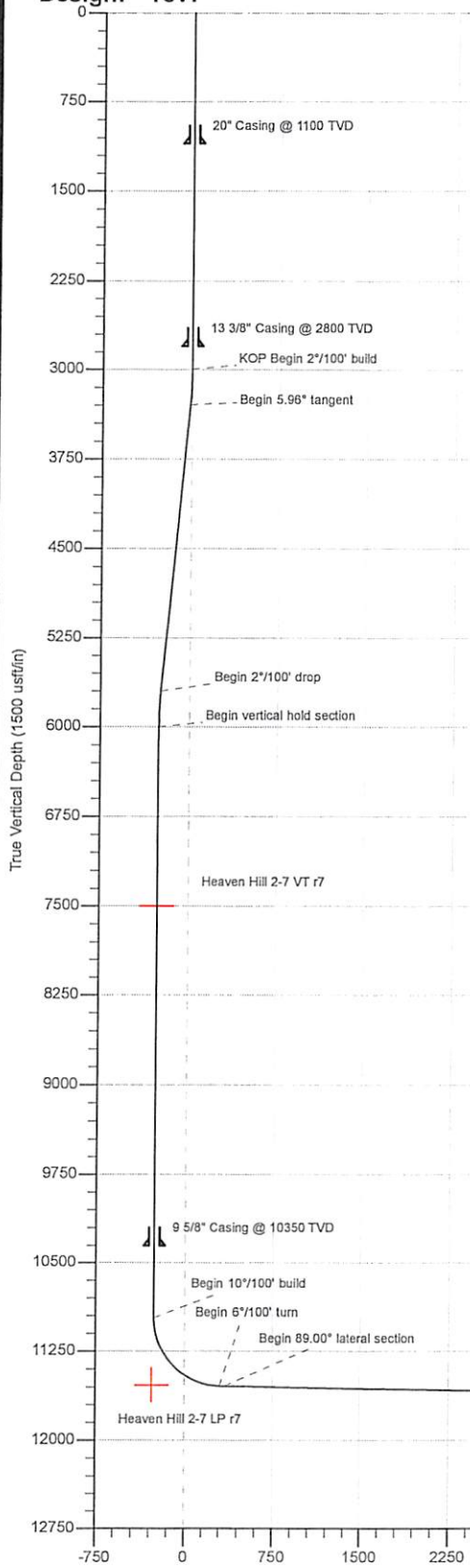
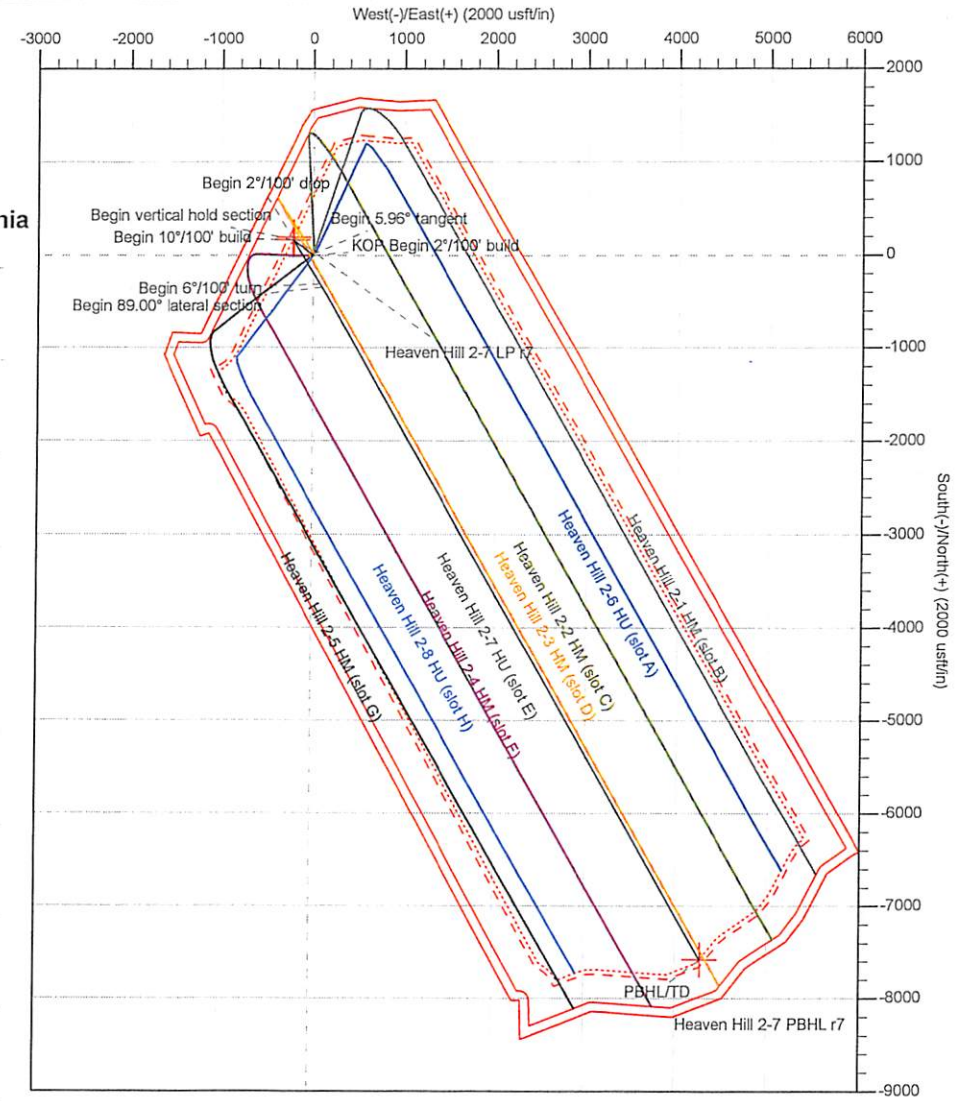
Handwritten: 8/12/27/16

Pilot Hole PH TD @ 11,784'
 Landing Point @ 11,545' TVD
 PH TVD = 150' below Trenton Top
 Lateral TD @ 20,275' ft MD
 11,690' ft TVD

51-0194



Tug Hill Operating LLC
Well: Heaven Hill 2-7 HU (slot E)
Site: Heaven Hill
Project: Marshall County, West Virginia
Design: rev7



SECTION DETAILS

| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | VSec | Annotation |
|-----|----------|-------|--------|----------|----------|---------|-------|--------|---------|------------------------------|
| 1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2 | 3000.00 | 0.00 | 0.00 | 3000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | KOP Begin 2"/100' build |
| 3 | 3298.08 | 5.96 | 306.21 | 3297.54 | 9.15 | -12.50 | 2.00 | 306.21 | -14.18 | Begin 5.96° tangent |
| 4 | 5716.07 | 5.96 | 306.21 | 5702.46 | 157.51 | -215.13 | 0.00 | 0.00 | -243.97 | Begin 2"/100' drop |
| 5 | 6014.15 | 0.00 | 147.50 | 6000.00 | 166.66 | -227.63 | 2.00 | 180.00 | -258.15 | Begin vertical hold section |
| 6 | 7514.15 | 0.00 | 147.50 | 7500.00 | 166.66 | -227.63 | 0.00 | 0.00 | -258.15 | |
| 7 | 10985.15 | 0.00 | 147.50 | 10971.00 | 166.66 | -227.63 | 0.00 | 147.50 | -258.15 | Begin 10"/100' build |
| 8 | 11875.15 | 89.00 | 147.50 | 11543.87 | -308.13 | 74.85 | 10.00 | 147.50 | 304.27 | Begin 6"/100' turn |
| 9 | 11916.81 | 89.00 | 150.00 | 11544.60 | -343.74 | 96.45 | 6.00 | 89.95 | 345.91 | Begin 89.00° lateral section |
| 10 | 20275.22 | 89.00 | 150.00 | 11690.00 | -7581.22 | 4275.05 | 0.00 | 0.00 | 8703.06 | PBHL/TD |

Surface Location: RKB=1331+28 @ 1359.00usft
 Universal Transverse Mercator (US Survey Feet)
 Zone 17N (84 W to 78 W)

Northing: 14457691.63 Easting: 1721035.50 Latitude: 39.81003950 Longitude: -80.71292210

Total Correction (M => G) To convert a Magnetic Direction to a Grid Direction, Subtract 8.89°

N-ZONE RECEIVED
 Office of Oil and Gas
 Magnetic Field
 Azimuths to Grid North: True North: -0.18°
 Magnetic North: -8.89°
 Magnetic Field Strength: 52355.2nT
 Dip Angle: 67.06°
 Date: 1/19/2016
 Model: IGRF2010

JAN 03 2017
 WV Department of Environmental Protection
 PBHL/TD
 Heaven Hill 2-7 PBHL r7

WW-9
(4/16)

API Number 47 - 051 - 01911
Operator's Well No. Heaven Hill Unit 2-7HU

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Tug Hill Operating, LLC OP Code 494510851

Watershed (HUC 10) Fish Creek Quadrangle Glen Easton 7.5'

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes No

Will a pit be used? Yes No

If so, please describe anticipated pit waste: AST Tanks with proper containment will be used for staging fresh water for frac and flow back water

Will a synthetic liner be used in the pit? Yes No If so, what ml.? AST Tanks will be used with proper containment

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection (UIC Permit Number UIC 2459, UIC 965, UIC 359, UIC 2D0732540, UIC 2D0732523)
- Reuse (at API Number _____)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain _____)

Will closed loop system be used? If so, describe: Yes - For Vertical and Horizontal Drilling

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Air for vertical / Oil for Horizontal

-If oil based, what type? Synthetic, petroleum, etc. Synthetic Oil Base

Additives to be used in drilling medium? Barite for weight

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. All drill cuttings to be disposed of in Wetzel County Sanitary Landfill

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) N/A

-Landfill or offsite name/permit number? Wetzel County Sanitary Landfil (SWF-1021 / WW0109185)

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature [Signature]

Company Official (Typed Name) David Patterson

Company Official Title Senior Vice President, Operations

RECEIVED
Office of Oil and Gas

JAN 03 2017

Subscribed and sworn before me this 22ND day of December, 20 16

Cynthia Hays Notary Public

My commission expires Dec 10, 2019



Tug Hill Operating, LLC

Proposed Revegetation Treatment: Acres Disturbed 32.98 Prevegetation pH 6.0

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch 2.5 Tons/acre

Seed Mixtures

Temporary

Permanent

| Seed Type | lbs/acre |
|-----------------|----------|
| Annual Ryegrass | 40 |
| | |
| | |

| Seed Type | lbs/acre |
|---------------|----------|
| Orchard Grass | 10 |
| Ladino Clover | 3 |
| | |

Attach:

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, include dimensions (L x W x D) of the pit, and dimensions (L x W), and area in acreage, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Jim Wilson

Comments: _____

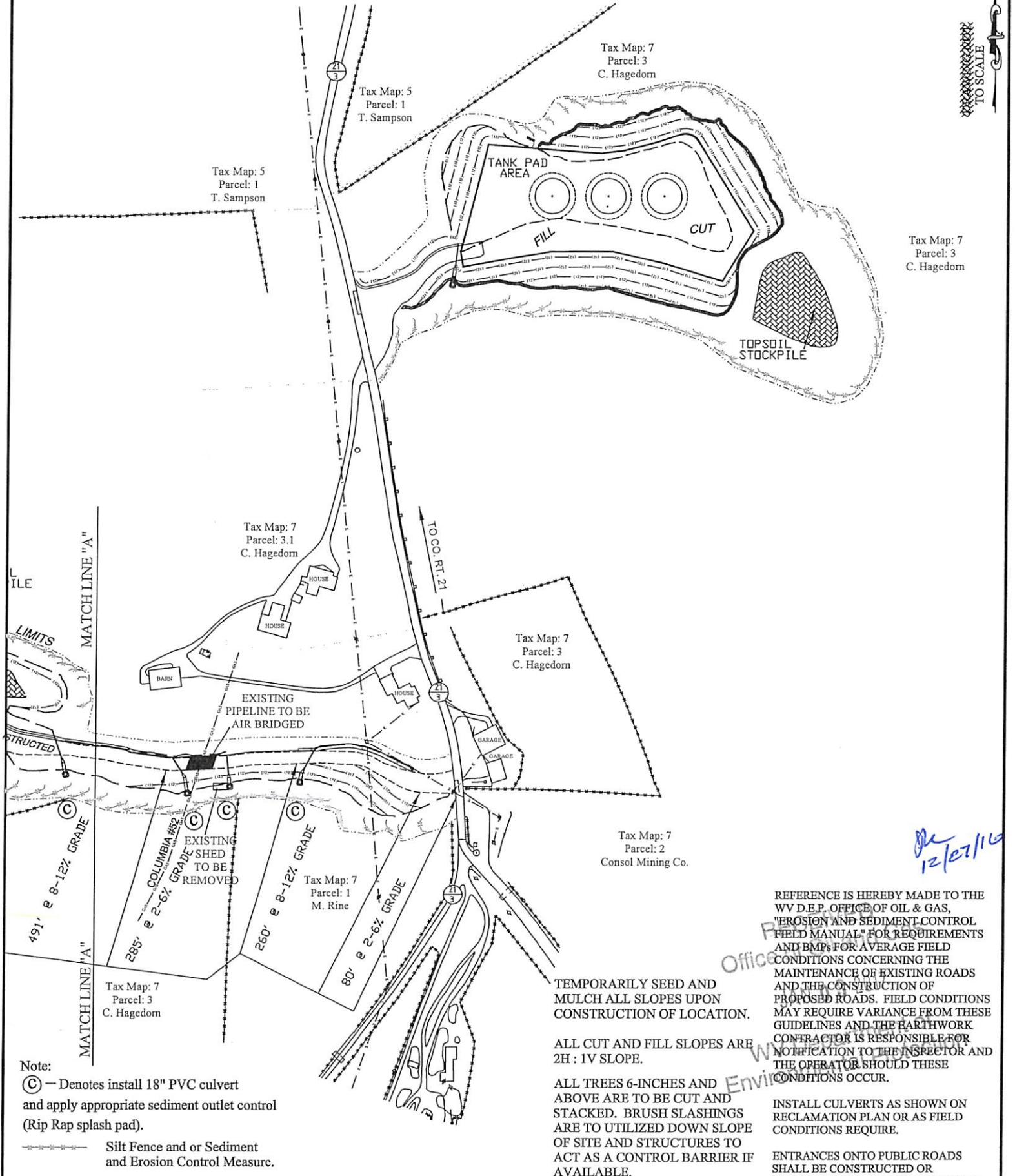
Title: Oil & Gas Inspector

Date: 12/27/16

Field Reviewed? () Yes () No

RECEIVED
Office of Oil and Gas
JAN 03 2017
WV Department of
Environmental Protection

PROPOSED HEAVEN HILL UNIT 2-7HU



Tax Map: 7
Parcel: 3
C. Hagedorn

Tax Map: 7
Parcel: 3
C. Hagedorn

Tax Map: 5
Parcel: 1
T. Sampson

Tax Map: 5
Parcel: 1
T. Sampson

Tax Map: 7
Parcel: 3.1
C. Hagedorn

Tax Map: 7
Parcel: 3
C. Hagedorn

Tax Map: 7
Parcel: 2
Consol Mining Co.

Tax Map: 7
Parcel: 1
M. Rine

Tax Map: 7
Parcel: 3
C. Hagedorn

JL
12/27/16

Note:
 (C) — Denotes install 18" PVC culvert and apply appropriate sediment outlet control (Rip Rap splash pad).
 --- Silt Fence and or Sediment and Erosion Control Measure.

TEMPORARILY SEED AND MULCH ALL SLOPES UPON CONSTRUCTION OF LOCATION.

ALL CUT AND FILL SLOPES ARE 2H : 1V SLOPE.

ALL TREES 6-INCHES AND ABOVE ARE TO BE CUT AND STACKED. BRUSH SLASHINGS ARE TO UTILIZED DOWN SLOPE OF SITE AND STRUCTURES TO ACT AS A CONTROL BARRIER IF AVAILABLE.

REFERENCE IS HEREBY MADE TO THE WV D.E.P. OFFICE OF OIL & GAS, "EROSION AND SEDIMENT CONTROL FIELD MANUAL" FOR REQUIREMENTS AND BMPs FOR AVERAGE FIELD CONDITIONS CONCERNING THE MAINTENANCE OF EXISTING ROADS AND THE CONSTRUCTION OF PROPOSED ROADS. FIELD CONDITIONS MAY REQUIRE VARIANCE FROM THESE GUIDELINES AND THE BATHWORK CONTRACTOR IS RESPONSIBLE FOR NOTIFICATION TO THE INSPECTOR AND THE OPERATOR SHOULD THESE CONDITIONS OCCUR.

INSTALL CULVERTS AS SHOWN ON RECLAMATION PLAN OR AS FIELD CONDITIONS REQUIRE.

ENTRANCES ONTO PUBLIC ROADS SHALL BE CONSTRUCTED OR MAINTAINED IN ACCORDANCE WITH WV D.O.T. REGULATIONS. ADDITIONAL PERMITS MAY BE REQUIRED.

57-01911



Well Site Safety Plan

Tug Hill Operating, LLC

ju
12/27/16

Well Name: Heaven Hill Unit 2-7HU

Pad Location: Heaven Hill Unit 2

Marshall County, West Virginia

UTM (meters), NAD83, Zone 17:

NORTHING -4,406,713.22

EASTING -524,572.67

December 2016

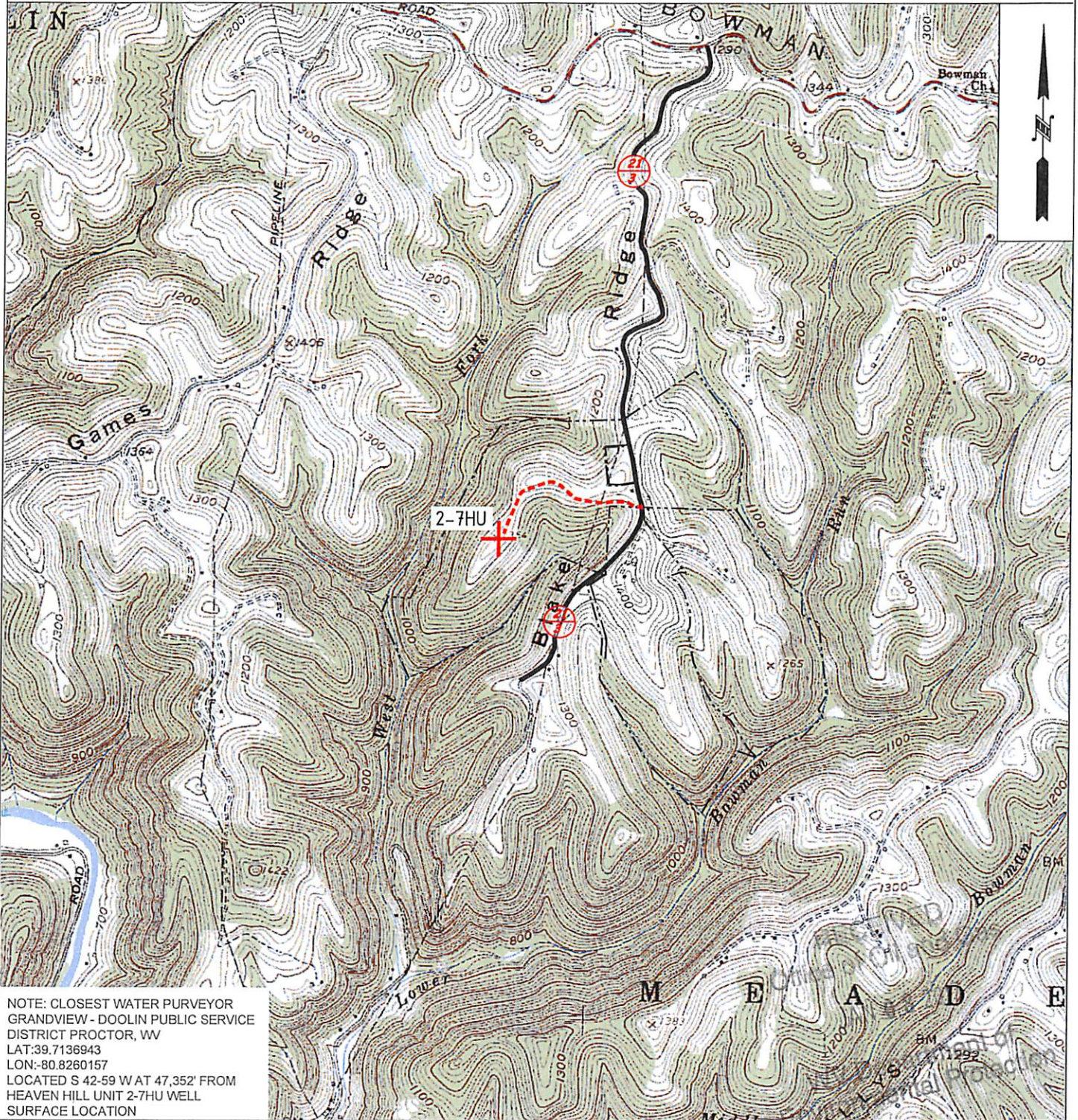
05/12/2017

51-01911

WW-9

SUPPLEMENT PG 2

PROPOSED HEAVEN HILL UNIT 2-7HU



NOTE: CLOSEST WATER PURVEYOR
 GRANDVIEW - DOOLIN PUBLIC SERVICE
 DISTRICT PROCTOR, WW
 LAT: 39.7136943
 LON: -80.8260157
 LOCATED S 42-59 W AT 47,352' FROM
 HEAVEN HILL UNIT 2-7HU WELL
 SURFACE LOCATION

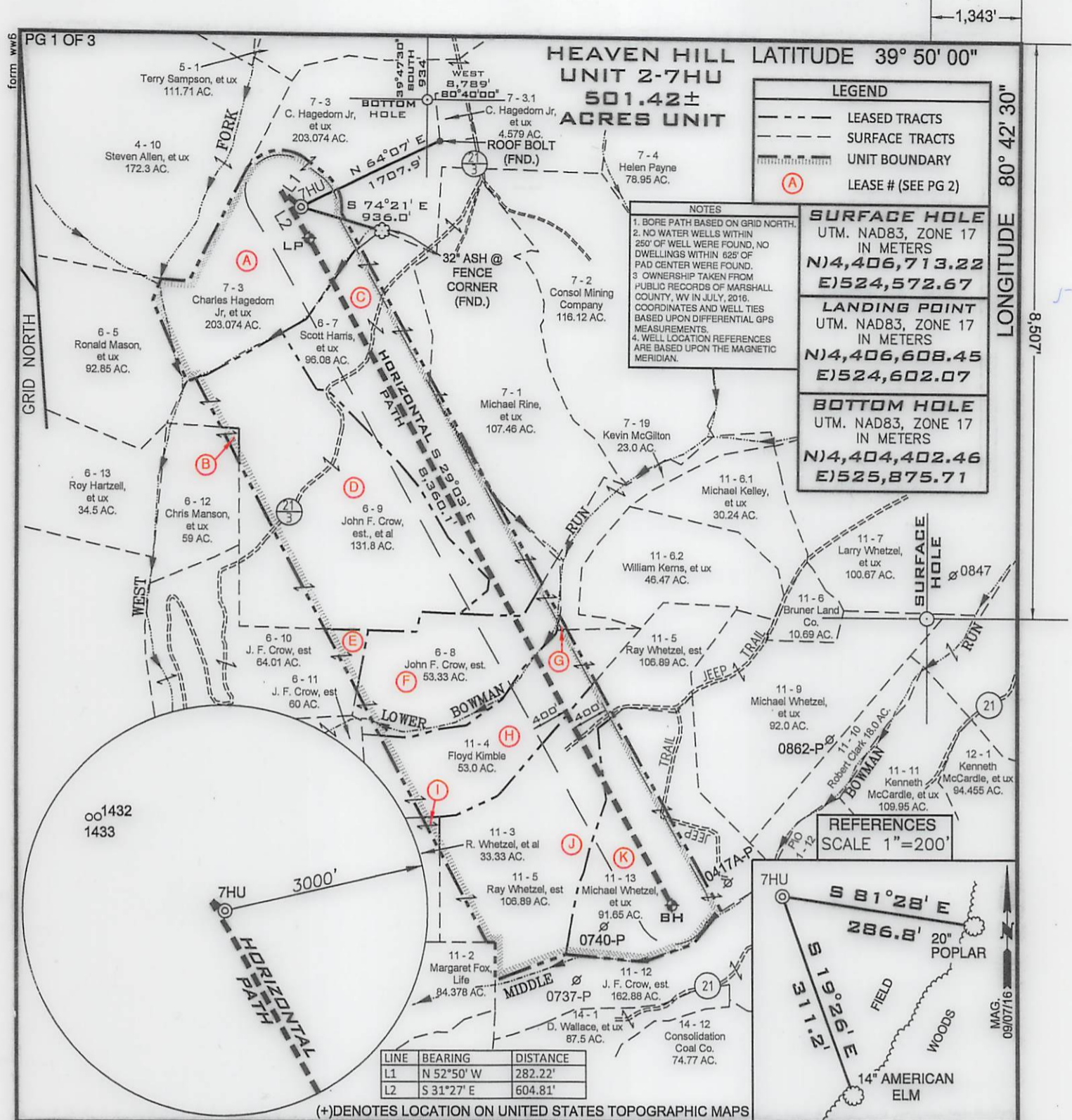


OPERATOR **163-697(CEC)**
 TUG HILL OPERATING, LLC
 380 SOUTHPONTE BLVD
 SUITE 200
 CANONSBURG, PA 15317

TOPO SECTION
 GLEN EASTON 7.5'
 SCALE:
 1" = 2000'

LEASE NAME
 HEAVEN HILL UNIT 2
 DATE:
 DATE: 12/20/16

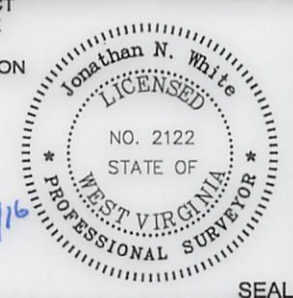
Handwritten notes:
 12/27/16
 05/12/2017



FILE NUMBER 163-697
 DRAWING NUMBER HHU2_WP_7HU
 SCALE 1" = 1500'
 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. Jonathan N. White
 2122



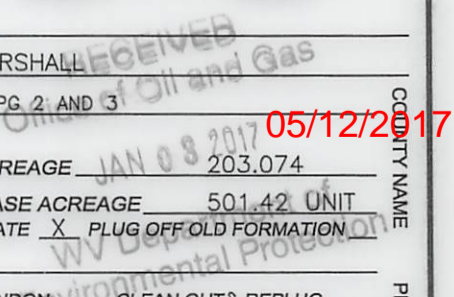
WVDEP
 OFFICE OF OIL & GAS
 601 57TH STREET, SE
 CHARLESTON, WV 25304



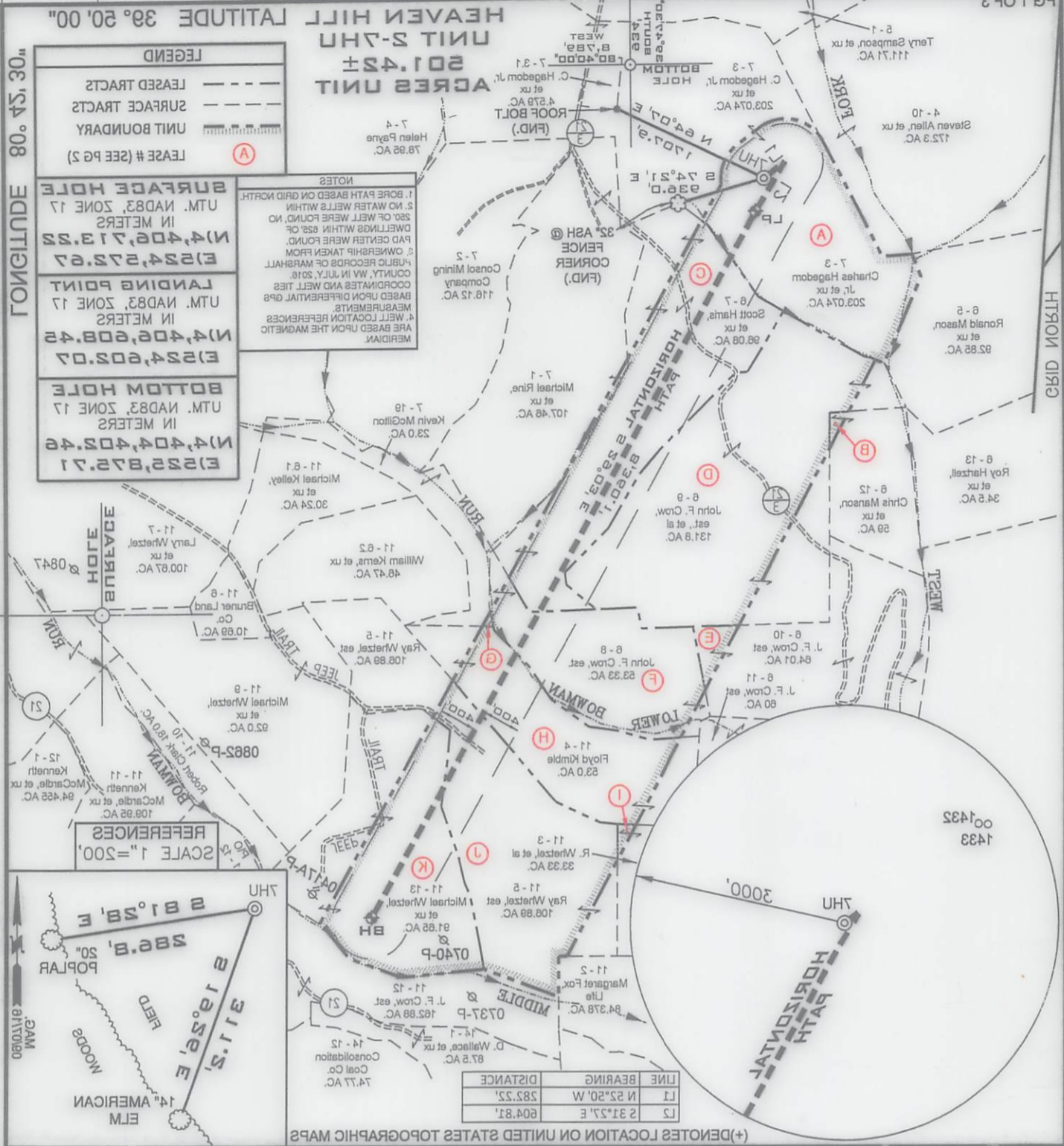
DATE: DECEMBER 20, 2016
 OPERATORS WELL NO. Heaven Hill Unit 2-7HU
 API WELL NO. 47-051-01911 H6A
 STATE WV COUNTY MARSHALL PERMIT 01911 H6A

LOCATION ELEVATION 1331' WATERSHED (HUC 10) FISH CREEK
 DISTRICT MEADE COUNTY MARSHALL
 QUADRANGLE GLEN EASTON 7.5' LEASE NUMBER SEE ATTACHED PG 2 AND 3

SURFACE OWNER CHARLES R. HAGEDORN, JR., ET UX ACREAGE 203.074
 OIL & GAS ROYALTY OWNER CHARLES R. HAGEDORN, JR., ET AL LEASE ACREAGE 501.42 UNIT
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE (SPECIFY) _____
 PLUG & ABANDON CLEAN OUT & REPLUG
 TARGET FORMATION POINT PLEASANT ESTIMATED DEPTH TVD 11,784' TMD 20,275'
 WELL OPERATOR TUG HILL OPERATING, LLC DESIGNATED AGENT DIANNA STAMPER
 ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 ADDRESS 5400 D BIG TYLER ROAD
FORT WORTH, TX 76107 CHARLESTON, WV 25313



COUNTY NAME
 PERMIT



FILE NUMBER 163-697
 DRAWING NUMBER HHU2_WP_7HU
 SCALE 1" = 1500'
 MINIMUM DEGREE OF ACCURACY 1/2500
 PROVEN SOURCE OF ELEVATION SUBMETER MAPPING
 GRADE GPS

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

STATE OF WEST VIRGINIA
 MOUNTAIN MEMBER LICENSE

DATE: DECEMBER 20, 2016
 OPERATORS WELL NO. Heaven Hill Unit 2-7HU
 API WELL NO. 47-051-0111HWA

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF "GAS") PRODUCTION STORAGE DEEP SHALLOW
 LOCATION ELEVATION 1321' WATERSHED (HUC 10) FISH CREEK
 DISTRICT MEADE COUNTY MARSHALL
 QUADRANGLE GLEN EASTON 7.5' LEASE NUMBER SEE ATTACHED PG 2 AND 3
 SURFACE OWNER CHARLES R. HAGEDORN, JR., ET UX ACREAGE 203.074
 OIL & GAS ROYALTY OWNER CHARLES R. HAGEDORN, JR., ET AL LEASE ACREAGE 501.42 UNIT
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE (SPECIFY) _____
 TARGET FORMATION POINT PLEASANT
 WELL OPERATOR TUG HILL OPERATING, LLC
 ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
 DESIGNATED AGENT CT CORPORATION SYSTEM DIANNA STAMPER
 ESTIMATED DEPTH TVD 11,784', TMD 20,275', CLEAN OUT & REPLUG
 PERMIT PLUG & ABANDON

PROFESSIONAL SURVEYOR
 STATE OF WEST VIRGINIA
 NO. 2122
 LICENSED
 Jonathan N. Wofford
 12/20/16

5/12/2017

**HEAVEN HILL UNIT 2-7HU
WELL PLAT LEASE INFORMATION**

| Lease No. | Tag | Parcel | Oil & Gas Royalty Owner | Deed Book | Deed Page |
|----------------|-----|--------|--|-----------|-----------|
| 10*15505 | A | 9-7-3 | RALPH E. WELLMAN | 686 | 412 |
| 10*15521 | A | 9-7-3 | VENANGO 21ST CENTURY ENERGY INC | 722 | 281 |
| 10*15608 | A | 9-7-3 | CHARLES R HAGEDORN JR | 816 | 423 |
| 10*47051.073.1 | A | 9-7-3 | VENANGO 21ST CENTURY ENERGY INC | 888 | 618 |
| 10*47051.073.2 | A | 9-7-3 | PATRIOT RESTORATIONS LLC | 908 | 541 |
| 10*47051.073.3 | A | 9-7-3 | TRIENERGY HOLDINGS, LLC | 878 | 330 |
| 10*15505 | A | 9-7-3 | RALPH E. WELLMAN | 686 | 412 |
| 10*15521 | A | 9-7-3 | VENANGO 21ST CENTURY ENERGY INC | 722 | 281 |
| 10*15608 | A | 9-7-3 | CHARLES R HAGEDORN JR | 816 | 423 |
| 10*47051.073.1 | A | 9-7-3 | VENANGO 21ST CENTURY ENERGY INC | 888 | 618 |
| 10*47051.073.2 | A | 9-7-3 | PATRIOT RESTORATIONS LLC | 908 | 541 |
| 10*47051.073.3 | A | 9-7-3 | TRIENERGY HOLDINGS, LLC | 878 | 330 |
| 10*15525 | B | 9-6-12 | RONALD KEITH MASON ET UX | 772 | 445 |
| 10*15541 | B | 9-6-12 | MARY RUTH FROHNAPFEL | 781 | 312 |
| 10*15542 | B | 9-6-12 | KENNETH D SIBURT | 781 | 218 |
| 10*15543 | B | 9-6-12 | SANDRA FROWEN | 781 | 307 |
| 10*15544 | B | 9-6-12 | VICKI J CHERRY A/K/A VICKIE L CHERRY | 793 | 318 |
| 10*15545 | B | 9-6-12 | JAMES B SIBURT ET UX | 793 | 332 |
| 10*15546 | B | 9-6-12 | ALAN K SIBURT ET UX | 793 | 325 |
| 10*15547 | B | 9-6-12 | RODNEY L SIBURT | 793 | 346 |
| 10*47051.255.0 | C | 9-6-7 | SCOTT C & CAROLYN R HARRIS | 879 | 296 |
| 10*15510 | D | 9-6-9 | ELAINE PHELPS ET VIR | 718 | 326 |
| 10*15511 | D | 9-6-9 | DAVID E CROW | 718 | 376 |
| 10*15512 | D | 9-6-9 | FRANCES COFFEY | 718 | 378 |
| 10*15513 | D | 9-6-9 | KAY KEYES | 718 | 330 |
| 10*15514 | D | 9-6-9 | L PAUL CROW | 718 | 336 |
| 10*15515 | D | 9-6-9 | DESIRE L CROW | 718 | 334 |
| 10*15516 | D | 9-6-9 | ROSE MARIE KIELGCZEWSKI | 718 | 354 |
| 10*15517 | D | 9-6-9 | DIANNE GELLNER & GARY GELLNER | 718 | 345 |
| 10*15518 | D | 9-6-9 | JAMES P HOLLIDAY AND JACQUELINE HOLLIDAY | 718 | 347 |
| 10*15519 | D | 9-6-9 | JOHN CROW | 726 | 580 |
| 10*15520 | D | 9-6-9 | TIMOTHY CROW | 726 | 582 |
| 10*47051.123.1 | D | 9-6-9 | LLOYD G BAKER | 865 | 389 |
| 10*47051.123.2 | D | 9-6-9 | JAMES P HOLLIDAY AND JACQUELINE HOLLIDAY | 873 | 143 |
| 10*15510 | E | 9-6-10 | ELAINE PHELPS ET VIR | 718 | 326 |
| 10*15511 | E | 9-6-10 | DAVID E CROW | 718 | 376 |
| 10*15512 | E | 9-6-10 | FRANCES COFFEY | 718 | 378 |
| 10*15513 | E | 9-6-10 | KAY KEYES | 718 | 330 |
| 10*15514 | E | 9-6-10 | L PAUL CROW | 718 | 336 |
| 10*15515 | E | 9-6-10 | DESIRE L CROW | 718 | 334 |
| 10*15516 | E | 9-6-10 | ROSE MARIE KIELGCZEWSKI | 718 | 354 |
| 10*15517 | E | 9-6-10 | DIANNE GELLNER & GARY GELLNER | 718 | 345 |
| 10*15518 | E | 9-6-10 | JAMES P HOLLIDAY AND JACQUELINE HOLLIDAY | 718 | 347 |
| 10*15519 | E | 9-6-10 | JOHN CROW | 726 | 580 |
| 10*15520 | E | 9-6-10 | TIMOTHY CROW | 726 | 582 |
| 10*47051.123.1 | E | 9-6-10 | LLOYD G BAKER | 865 | 389 |
| 10*47051.123.2 | E | 9-6-10 | JAMES P HOLLIDAY AND JACQUELINE HOLLIDAY | 873 | 143 |
| 10*15510 | F | 9-6-8 | ELAINE PHELPS ET VIR | 718 | 326 |
| 10*15511 | F | 9-6-8 | DAVID E CROW | 718 | 376 |
| 10*15512 | F | 9-6-8 | FRANCES COFFEY | 718 | 378 |
| 10*15513 | F | 9-6-8 | KAY KEYES | 718 | 330 |
| 10*15514 | F | 9-6-8 | L PAUL CROW | 718 | 336 |
| 10*15515 | F | 9-6-8 | DESIRE L CROW | 718 | 334 |
| 10*15516 | F | 9-6-8 | ROSE MARIE KIELGCZEWSKI | 718 | 354 |
| 10*15517 | F | 9-6-8 | DIANNE GELLNER & GARY GELLNER | 718 | 345 |
| 10*15518 | F | 9-6-8 | JAMES P HOLLIDAY AND JACQUELINE HOLLIDAY | 718 | 347 |
| 10*15519 | F | 9-6-8 | JOHN CROW | 726 | 580 |
| 10*15520 | F | 9-6-8 | TIMOTHY CROW | 726 | 582 |
| 10*47051.123.1 | F | 9-6-8 | LLOYD G BAKER | 865 | 389 |
| 10*47051.123.2 | F | 9-6-8 | JAMES P HOLLIDAY AND JACQUELINE HOLLIDAY | 873 | 143 |

05/12/2017

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

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

WELL PLAT LEASE INFORMATION
HEAVEN HILL UNIT 2-7HU

| Lease No. | Tag | Parcel | Oil & Gas Royalty Owner | Deed Book | Deed Page |
|----------------|-----|--------|--|-----------|-----------|
| 10*47051.123.2 | F | 9-8-8 | JAMES P HOLIDAY AND JACQUELINE HOLIDAY | 873 | 143 |
| 10*47051.123.1 | F | 9-8-8 | LLOYD G BAKER | 862 | 389 |
| 10*12520 | F | 9-8-8 | TIMOTHY CROW | 726 | 282 |
| 10*12519 | F | 9-8-8 | JOHN CROW | 726 | 280 |
| 10*12518 | F | 9-8-8 | JAMES P HOLIDAY AND JACQUELINE HOLIDAY | 718 | 347 |
| 10*12517 | F | 9-8-8 | DIANNE GELNER & GARY GELNER | 718 | 342 |
| 10*12516 | F | 9-8-8 | ROSE MARIE KIELGCEWSKI | 718 | 324 |
| 10*12515 | F | 9-8-8 | DESIRE L CROW | 718 | 334 |
| 10*12514 | F | 9-8-8 | L PAUL CROW | 718 | 336 |
| 10*12513 | F | 9-8-8 | KAY KEYES | 718 | 330 |
| 10*12512 | F | 9-8-8 | FRANCES COFFEY | 718 | 378 |
| 10*12511 | F | 9-8-8 | DAVID E CROW | 718 | 376 |
| 10*12510 | F | 9-8-8 | ELAINE PHELPS ET VIR | 718 | 326 |
| 10*47051.123.2 | E | 9-8-10 | JAMES P HOLIDAY AND JACQUELINE HOLIDAY | 873 | 143 |
| 10*47051.123.1 | E | 9-8-10 | LLOYD G BAKER | 862 | 389 |
| 10*12520 | E | 9-8-10 | TIMOTHY CROW | 726 | 282 |
| 10*12519 | E | 9-8-10 | JOHN CROW | 726 | 280 |
| 10*12518 | E | 9-8-10 | JAMES P HOLIDAY AND JACQUELINE HOLIDAY | 718 | 347 |
| 10*12517 | E | 9-8-10 | DIANNE GELNER & GARY GELNER | 718 | 342 |
| 10*12516 | E | 9-8-10 | ROSE MARIE KIELGCEWSKI | 718 | 324 |
| 10*12515 | E | 9-8-10 | DESIRE L CROW | 718 | 334 |
| 10*12514 | E | 9-8-10 | L PAUL CROW | 718 | 336 |
| 10*12513 | E | 9-8-10 | KAY KEYES | 718 | 330 |
| 10*12512 | E | 9-8-10 | FRANCES COFFEY | 718 | 378 |
| 10*12511 | E | 9-8-10 | DAVID E CROW | 718 | 376 |
| 10*12510 | E | 9-8-10 | ELAINE PHELPS ET VIR | 718 | 326 |
| 10*47051.073.2 | A | 9-7-3 | PATRIOT RESTORATIONS LLC | 908 | 241 |
| 10*47051.073.1 | A | 9-7-3 | VENANGO 21ST CENTURY ENERGY INC | 888 | 618 |
| 10*12508 | A | 9-7-3 | CHARLES R HAGDORN JR | 816 | 423 |
| 10*12521 | A | 9-7-3 | VENANGO 21ST CENTURY ENERGY INC | 722 | 281 |
| 10*12502 | A | 9-7-3 | RALPH E. WELLMAN | 686 | 412 |
| 10*47051.073.3 | A | 9-7-3 | TRIENERGY HOLDINGS, LLC | 878 | 330 |
| 10*47051.073.2 | A | 9-7-3 | PATRIOT RESTORATIONS LLC | 908 | 241 |
| 10*47051.073.1 | A | 9-7-3 | VENANGO 21ST CENTURY ENERGY INC | 888 | 618 |
| 10*12508 | A | 9-7-3 | CHARLES R HAGDORN JR | 816 | 423 |
| 10*12521 | A | 9-7-3 | VENANGO 21ST CENTURY ENERGY INC | 722 | 281 |
| 10*12502 | A | 9-7-3 | RALPH E. WELLMAN | 686 | 412 |
| 10*47051.073.3 | A | 9-7-3 | TRIENERGY HOLDINGS, LLC | 878 | 330 |
| 10*47051.073.2 | A | 9-7-3 | PATRIOT RESTORATIONS LLC | 908 | 241 |
| 10*47051.073.1 | A | 9-7-3 | VENANGO 21ST CENTURY ENERGY INC | 888 | 618 |
| 10*12508 | A | 9-7-3 | CHARLES R HAGDORN JR | 816 | 423 |
| 10*12521 | A | 9-7-3 | VENANGO 21ST CENTURY ENERGY INC | 722 | 281 |
| 10*12502 | A | 9-7-3 | RALPH E. WELLMAN | 686 | 412 |
| 10*12525 | B | 9-6-12 | RONALD KEITH MASON ET UX | 772 | 442 |
| 10*12541 | B | 9-6-12 | MARY RUTH FROHNAPFEL | 781 | 312 |
| 10*12542 | B | 9-6-12 | KENNETH D SIBURT | 781 | 218 |
| 10*12543 | B | 9-6-12 | SANDRA FROWEN | 781 | 307 |
| 10*12544 | B | 9-6-12 | VICKI J CHERY A/K/A VICKIE L CHERY | 793 | 318 |
| 10*12545 | B | 9-6-12 | JAMES B SIBURT ET UX | 793 | 332 |
| 10*12546 | B | 9-6-12 | ALAN K SIBURT ET UX | 793 | 322 |
| 10*12547 | B | 9-6-12 | RODNEY L SIBURT | 793 | 346 |
| 10*47051.222.0 | C | 9-6-7 | SCOTT C & CAROLYN R HARRIS | 879 | 296 |
| 10*12522 | D | 9-6-9 | ELAINE PHELPS ET VIR | 718 | 326 |
| 10*12521 | D | 9-6-9 | DAVID E CROW | 718 | 376 |
| 10*12522 | D | 9-6-9 | FRANCES COFFEY | 718 | 378 |
| 10*12523 | D | 9-6-9 | KAY KEYES | 718 | 330 |
| 10*12524 | D | 9-6-9 | L PAUL CROW | 718 | 336 |
| 10*12525 | D | 9-6-9 | DESIRE L CROW | 718 | 334 |
| 10*12526 | D | 9-6-9 | ROSE MARIE KIELGCEWSKI | 718 | 324 |
| 10*12527 | D | 9-6-9 | DIANNE GELNER & GARY GELNER | 718 | 342 |
| 10*12528 | D | 9-6-9 | JAMES P HOLIDAY AND JACQUELINE HOLIDAY | 718 | 347 |
| 10*12529 | D | 9-6-9 | JOHN CROW | 726 | 280 |
| 10*12520 | D | 9-6-9 | TIMOTHY CROW | 726 | 282 |
| 10*47051.123.1 | D | 9-6-9 | LLOYD G BAKER | 862 | 389 |
| 10*47051.123.2 | D | 9-6-9 | JAMES P HOLIDAY AND JACQUELINE HOLIDAY | 873 | 143 |
| 10*12510 | E | 9-6-10 | ELAINE PHELPS ET VIR | 718 | 326 |
| 10*12511 | E | 9-6-10 | DAVID E CROW | 718 | 376 |
| 10*12512 | E | 9-6-10 | FRANCES COFFEY | 718 | 378 |
| 10*12513 | E | 9-6-10 | KAY KEYES | 718 | 330 |
| 10*12514 | E | 9-6-10 | L PAUL CROW | 718 | 336 |
| 10*12515 | E | 9-6-10 | DESIRE L CROW | 718 | 334 |
| 10*12516 | E | 9-6-10 | ROSE MARIE KIELGCEWSKI | 718 | 324 |
| 10*12517 | E | 9-6-10 | DIANNE GELNER & GARY GELNER | 718 | 342 |
| 10*12518 | E | 9-6-10 | JAMES P HOLIDAY AND JACQUELINE HOLIDAY | 718 | 347 |
| 10*12519 | E | 9-6-10 | JOHN CROW | 726 | 280 |
| 10*12520 | E | 9-6-10 | TIMOTHY CROW | 726 | 282 |
| 10*47051.123.1 | E | 9-6-10 | LLOYD G BAKER | 862 | 389 |
| 10*47051.123.2 | E | 9-6-10 | JAMES P HOLIDAY AND JACQUELINE HOLIDAY | 873 | 143 |
| 10*12510 | F | 9-6-8 | ELAINE PHELPS ET VIR | 718 | 326 |
| 10*12511 | F | 9-6-8 | DAVID E CROW | 718 | 376 |
| 10*12512 | F | 9-6-8 | FRANCES COFFEY | 718 | 378 |
| 10*12513 | F | 9-6-8 | KAY KEYES | 718 | 330 |
| 10*12514 | F | 9-6-8 | L PAUL CROW | 718 | 336 |
| 10*12515 | F | 9-6-8 | DESIRE L CROW | 718 | 334 |
| 10*12516 | F | 9-6-8 | ROSE MARIE KIELGCEWSKI | 718 | 324 |
| 10*12517 | F | 9-6-8 | DIANNE GELNER & GARY GELNER | 718 | 342 |
| 10*12518 | F | 9-6-8 | JAMES P HOLIDAY AND JACQUELINE HOLIDAY | 718 | 347 |
| 10*12519 | F | 9-6-8 | JOHN CROW | 726 | 280 |
| 10*12520 | F | 9-6-8 | TIMOTHY CROW | 726 | 282 |
| 10*47051.123.1 | F | 9-6-8 | LLOYD G BAKER | 862 | 389 |
| 10*47051.123.2 | F | 9-6-8 | JAMES P HOLIDAY AND JACQUELINE HOLIDAY | 873 | 143 |

05/12/2017

WELL OPERATOR TUG HILL OPERATING, LLC
 DESIGNATED AGENT CT CORPORATION SYSTEM
 DIANNA STAMPER
 ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500
 FORT WORTH, TX 76107
 ADDRESS 2400 D BIG TYLER ROAD
 CHARLESTON, WV 25313

21-0111 H04

**HEAVEN HILL UNIT 2-7HU
WELL PLAT LEASE INFORMATION**

| Lease No. | Tag | Parcel | Oil & Gas Royalty Owner | Deed Book | Deed Page |
|----------------|-----|---------|-------------------------|-----------|-----------|
| 10*15667 | G | 9-7-19 | KEVIN E MCGILTON ET UX | 850 | 351 |
| 10*16517 | H | 9-11-4 | RHDK INVESTMENTS | 907 | 550 |
| 10*15561 | I | 9-11-3 | VICKIE MASON | 680 | 413 |
| 10*15562 | I | 9-11-3 | MARY A SOUTH | 682 | 231 |
| 10*15563 | I | 9-11-3 | MARK L WHETZAL | 682 | 544 |
| 10*15564 | I | 9-11-3 | RAY A WHETZAL JR | 682 | 548 |
| 10*15565 | I | 9-11-3 | ROBERT L WHETZAL | 682 | 552 |
| 10*15566 | I | 9-11-3 | SHARON L WHETZAL | 682 | 556 |
| 10*47051.108.1 | I | 9-11-3 | MICHAEL A WHETZEL | 885 | 51 |
| 10*47051.108.5 | I | 9-11-3 | BRENDA J WHETZEL | 885 | 55 |
| 10*47051.108.6 | I | 9-11-3 | TERRI MCCARDLE | 985 | 23 |
| 10*47051.108.7 | I | 9-11-3 | GARY FRANCIS WHETZAL | 895 | 26 |
| 10*15584 | J | 9-11-5 | VICKIE MASON | 686 | 239 |
| 10*15585 | J | 9-11-5 | SHARON L WHETZAL | 687 | 147 |
| 10*15586 | J | 9-11-5 | MARY A SOUTH | 690 | 615 |
| 10*15587 | J | 9-11-5 | ROBERT L WHETZAL | 690 | 559 |
| 10*15588 | J | 9-11-5 | RAY A WHETZAL JR | 693 | 571 |
| 10*15589 | J | 9-11-5 | MARK L WHETZAL | 693 | 576 |
| 10*47051.108.1 | J | 9-11-5 | MICHAEL A WHETZEL | 885 | 51 |
| 10*47051.108.5 | J | 9-11-5 | BRENDA J WHETZEL | 885 | 55 |
| 10*16258 | K | 9-11-13 | CHESTNUT HOLDINGS INC | 848 | 220 |

05/12/2017

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
HEAVEN HILL UNIT 2-2HU

| Lease No. | Tag | Parcel | Oil & Gas Royalty Owner | Deed Book | Deed Page |
|---------------|-----|---------|-------------------------|-----------|-----------|
| 10*16258 | K | 9-11-13 | CHESTNUT HOLDINGS INC | 848 | 250 |
| 10*47021.1082 | 1 | 9-11-2 | BRENDA J WHEZEL | 882 | 22 |
| 10*47021.1081 | 1 | 9-11-2 | MICHAEL A WHEZEL | 882 | 21 |
| 10*12589 | 1 | 9-11-2 | MARK L WHEZEL | 993 | 226 |
| 10*12588 | 1 | 9-11-2 | RAY A WHEZEL JR | 993 | 221 |
| 10*12587 | 1 | 9-11-2 | ROBERT L WHEZEL | 990 | 229 |
| 10*12586 | 1 | 9-11-2 | MARY A SOUTH | 990 | 212 |
| 10*12585 | 1 | 9-11-2 | SHARON L WHEZEL | 987 | 147 |
| 10*12584 | 1 | 9-11-2 | VICKIE MASON | 986 | 239 |
| 10*47021.1087 | 1 | 9-11-3 | GARY FRANCIS WHEZEL | 992 | 26 |
| 10*47021.1086 | 1 | 9-11-3 | TERRI MCCARDLE | 982 | 23 |
| 10*47021.1082 | 1 | 9-11-3 | BRENDA J WHEZEL | 882 | 22 |
| 10*47021.1081 | 1 | 9-11-3 | MICHAEL A WHEZEL | 882 | 21 |
| 10*12566 | 1 | 9-11-3 | SHARON L WHEZEL | 982 | 226 |
| 10*12565 | 1 | 9-11-3 | ROBERT L WHEZEL | 982 | 222 |
| 10*12564 | 1 | 9-11-3 | RAY A WHEZEL JR | 982 | 248 |
| 10*12563 | 1 | 9-11-3 | MARK L WHEZEL | 982 | 244 |
| 10*12562 | 1 | 9-11-3 | MARY A SOUTH | 982 | 231 |
| 10*12561 | 1 | 9-11-3 | VICKIE MASON | 980 | 413 |
| 10*16217 | H | 9-11-4 | RHDK INVESTMENTS | 907 | 250 |
| 10*12667 | G | 9-7-19 | KEVIN E MCGILTON ET UX | 820 | 321 |

21-01911 H6A

dw mto1

05/12/2017

WELL OPERATOR TUG HILL OPERATING, LLC
 DESIGNATED AGENT CT CORPORATION SYSTEM
 DIANNA STAMPER
 ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500
 FORT WORTH, TX 76102
 ADDRESS 2400 D BIG TYLER ROAD
 CHARLESTON, WV 25313

WW-6A1
(5/13)

Operator's Well No. Heaven Hill Unit 2-7HU

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

| Lease Name or Number | Grantor, Lessor, etc. | Grantee, Lessee, etc. | Royalty | Book/Page |
|----------------------|-----------------------|-----------------------|---------|-----------|
|----------------------|-----------------------|-----------------------|---------|-----------|

See Attached

**Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: Tug Hill Operating, LLC
 By: Jonathan White
 Its: Regulatory Analyst

RECEIVED
Office of Oil and Gas

JAN 03 2017

Page 1 of 4
 WV Department of
 Environmental Protection
 05/12/2017

| Lease Name or No. | Tag | Parcel | Grantor, Lessor, ect. | Grantee, Lessee, ect. | Royalty | Deed Book/Pg | | Assignment | Assignment | Assignment |
|-------------------|-----|--------|--|-------------------------|---------|--------------|-----|----------------------------|--------------------------|-----------------------------|
| 10*15505 | A | 9-7-3 | RALPH E. WELLMAN | TH EXPLORATION LLC | 1/8+ | 686 | 412 | N/A | N/A | N/A |
| 10*15521 | A | 9-7-3 | VENANGO 21ST CENTURY ENERGY INC | TRIENERGY HOLDINGS, LLC | 1/8+ | 722 | 281 | Tri Energy to NPAR: 24/196 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15608 | A | 9-7-3 | CHARLES R HAGEDORN JR | CHEVRON USA INC | 1/8+ | 816 | 423 | N/A | N/A | Chevron to Tug Hill: 36/148 |
| 10*47051.073.1 | A | 9-7-3 | VENANGO 21ST CENTURY ENERGY INC | TH EXPLORATION LLC | 1/8+ | 888 | 618 | N/A | N/A | N/A |
| 10*47051.073.2 | A | 9-7-3 | PATRIOT RESTORATIONS LLC | TH EXPLORATION LLC | 1/8+ | 908 | 541 | N/A | N/A | N/A |
| 10*47051.073.3 | A | 9-7-3 | TRIENERGY HOLDINGS, LLC | TH EXPLORATION LLC | 1/8+ | 878 | 330 | N/A | N/A | N/A |
| 10*15505 | A | 9-7-3 | RALPH E. WELLMAN | TH EXPLORATION LLC | 1/8+ | 686 | 412 | N/A | N/A | N/A |
| 10*15521 | A | 9-7-3 | VENANGO 21ST CENTURY ENERGY INC | TRIENERGY HOLDINGS, LLC | 1/8+ | 722 | 281 | Tri Energy to NPAR: 24/196 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15608 | A | 9-7-3 | CHARLES R HAGEDORN JR | CHEVRON USA INC | 1/8+ | 816 | 423 | N/A | N/A | Chevron to Tug Hill: 36/148 |
| 10*47051.073.1 | A | 9-7-3 | VENANGO 21ST CENTURY ENERGY INC | TH EXPLORATION LLC | 1/8+ | 888 | 618 | N/A | N/A | N/A |
| 10*47051.073.2 | A | 9-7-3 | PATRIOT RESTORATIONS LLC | TH EXPLORATION LLC | 1/8+ | 908 | 541 | N/A | N/A | N/A |
| 10*47051.073.3 | A | 9-7-3 | TRIENERGY HOLDINGS, LLC | TH EXPLORATION LLC | 1/8+ | 878 | 330 | N/A | N/A | N/A |
| 10*15525 | B | 9-6-12 | RONALD KEITH MASON ET UX | CHEVRON USA INC | 1/8+ | 772 | 445 | N/A | N/A | Chevron to Tug Hill: 36/148 |
| 10*15541 | B | 9-6-12 | MARY RUTH FROHNAPFEL | CHEVRON USA INC | 1/8+ | 781 | 312 | N/A | N/A | Chevron to Tug Hill: 36/148 |
| 10*15542 | B | 9-6-12 | KENNETH D SIBURT | CHEVRON USA INC | 1/8+ | 781 | 218 | N/A | N/A | Chevron to Tug Hill: 36/148 |
| 10*15543 | B | 9-6-12 | SANDRA FROWEN | CHEVRON USA INC | 1/8+ | 781 | 307 | N/A | N/A | Chevron to Tug Hill: 36/148 |
| 10*15544 | B | 9-6-12 | VICKI J CHERRY A/K/A VICKIE L CHERRY | CHEVRON USA INC | 1/8+ | 793 | 318 | N/A | N/A | Chevron to Tug Hill: 36/148 |
| 10*15545 | B | 9-6-12 | JAMES B SIBURT ET UX | CHEVRON USA INC | 1/8+ | 793 | 332 | N/A | N/A | Chevron to Tug Hill: 36/148 |
| 10*15546 | B | 9-6-12 | ALAN K SIBURT ET UX | CHEVRON USA INC | 1/8+ | 793 | 325 | N/A | N/A | Chevron to Tug Hill: 36/148 |
| 10*15547 | B | 9-6-12 | RODNEY L SIBURT | CHEVRON USA INC | 1/8+ | 793 | 346 | N/A | N/A | Chevron to Tug Hill: 36/148 |
| 10*47051.255.0 | C | 9-6-7 | SCOTT C & CAROLYN R HARRIS | TH EXPLORATION LLC | 1/8+ | 879 | 296 | N/A | N/A | N/A |
| 10*15510 | D | 9-6-9 | ELAINE PHELPS ET VIR | TRIENERGY HOLDINGS, LLC | 1/8+ | 718 | 326 | Tri Energy to NPAR: 24/430 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15511 | D | 9-6-9 | DAVID E CROW | TRIENERGY HOLDINGS, LLC | 1/8+ | 718 | 376 | Tri Energy to NPAR: 25/463 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15512 | D | 9-6-9 | FRANCES COFFEY | TRIENERGY HOLDINGS, LLC | 1/8+ | 718 | 378 | Tri Energy to NPAR: 24/430 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15513 | D | 9-6-9 | KAY KEYES | TRIENERGY HOLDINGS, LLC | 1/8+ | 718 | 330 | Tri Energy to NPAR: 24/430 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15514 | D | 9-6-9 | L PAUL CROW | TRIENERGY HOLDINGS, LLC | 1/8+ | 718 | 336 | Tri Energy to NPAR: 24/430 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15515 | D | 9-6-9 | DESIRE L CROW | TRIENERGY HOLDINGS, LLC | 1/8+ | 718 | 334 | Tri Energy to NPAR: 24/430 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15516 | D | 9-6-9 | ROSE MARIE KIELGCZEWSKI | TRIENERGY HOLDINGS, LLC | 1/8+ | 718 | 354 | Tri Energy to NPAR: 24/430 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15517 | D | 9-6-9 | DIANNE GELLNER & GARY GELLNER | TRIENERGY HOLDINGS, LLC | 1/8+ | 718 | 345 | Tri Energy to NPAR: 24/430 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15518 | D | 9-6-9 | JAMES P HOLLIDAY AND JACQUELINE HOLLIDAY | TRIENERGY HOLDINGS, LLC | 1/8+ | 718 | 347 | Tri Energy to NPAR: 24/430 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15519 | D | 9-6-9 | JOHN CROW | TRIENERGY HOLDINGS, LLC | 1/8+ | 726 | 580 | Tri Energy to NPAR: 25/449 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15520 | D | 9-6-9 | TIMOTHY CROW | TRIENERGY HOLDINGS, LLC | 1/8+ | 726 | 582 | Tri Energy to NPAR: 25/449 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*47051.123.1 | D | 9-6-9 | LLOYD G BAKER | TH EXPLORATION LLC | 1/8+ | 865 | 389 | N/A | N/A | N/A |
| 10*47051.123.2 | D | 9-6-9 | JAMES P HOLLIDAY AND JACQUELINE HOLLIDAY | TH EXPLORATION LLC | 1/8+ | 873 | 143 | N/A | N/A | N/A |
| 10*15510 | E | 9-6-10 | ELAINE PHELPS ET VIR | TRIENERGY HOLDINGS, LLC | 1/8+ | 718 | 326 | Tri Energy to NPAR: 24/430 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15511 | E | 9-6-10 | DAVID E CROW | TRIENERGY HOLDINGS, LLC | 1/8+ | 718 | 376 | Tri Energy to NPAR: 25/463 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15512 | E | 9-6-10 | FRANCES COFFEY | TRIENERGY HOLDINGS, LLC | 1/8+ | 718 | 378 | Tri Energy to NPAR: 24/430 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15513 | E | 9-6-10 | KAY KEYES | TRIENERGY HOLDINGS, LLC | 1/8+ | 718 | 330 | Tri Energy to NPAR: 24/430 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |

RECEIVED
 Office of Oil and Gas
 JAN 09 2011
 New York Department of Environmental Protection

SI-0191

| Lease Name or No. | Tag | Parcel | Grantor, Lessor, ect. | Grantee, Lessee, ect. | Royalty | Deed Book/Pg | Assignment | Assignment | Assignment |
|-------------------|-----|--------|--|---------------------------|---------|--------------|----------------------------|-------------------------------|-----------------------------|
| 10*15514 | E | 9-6-10 | L PAUL CROW | TRIENERGY HOLDINGS, LLC | 1/8+ | 718 336 | Tri Energy to NPAR: 24/430 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15515 | E | 9-6-10 | DESIRE L CROW | TRIENERGY HOLDINGS, LLC | 1/8+ | 718 334 | Tri Energy to NPAR: 24/430 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15516 | E | 9-6-10 | ROSE MARIE KIELGCZEWSKI | TRIENERGY HOLDINGS, LLC | 1/8+ | 718 354 | Tri Energy to NPAR: 24/430 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15517 | E | 9-6-10 | DIANNE GELLNER & GARY GELLNER | TRIENERGY HOLDINGS, LLC | 1/8+ | 718 345 | Tri Energy to NPAR: 24/430 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15518 | E | 9-6-10 | JAMES P HOLLIDAY AND JACQUELINE HOLLIDAY | TRIENERGY HOLDINGS, LLC | 1/8+ | 718 347 | Tri Energy to NPAR: 24/430 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15519 | E | 9-6-10 | JOHN CROW | TRIENERGY HOLDINGS, LLC | 1/8+ | 726 580 | Tri Energy to NPAR: 25/449 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15520 | E | 9-6-10 | TIMOTHY CROW | TRIENERGY HOLDINGS, LLC | 1/8+ | 726 582 | Tri Energy to NPAR: 25/449 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*47051.123.1 | E | 9-6-10 | LLOYD G BAKER | TH EXPLORATION LLC | 1/8+ | 865 389 | N/A | N/A | N/A |
| 10*47051.123.2 | E | 9-6-10 | JAMES P HOLLIDAY AND JACQUELINE HOLLIDAY | TH EXPLORATION LLC | 1/8+ | 873 143 | N/A | N/A | N/A |
| 10*15510 | F | 9-6-8 | ELAINE PHELPS ET VIR | TRIENERGY HOLDINGS, LLC | 1/8+ | 718 326 | Tri Energy to NPAR: 24/430 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15511 | F | 9-6-8 | DAVID E CROW | TRIENERGY HOLDINGS, LLC | 1/8+ | 718 376 | Tri Energy to NPAR: 25/463 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15512 | F | 9-6-8 | FRANCES COFFEY | TRIENERGY HOLDINGS, LLC | 1/8+ | 718 378 | Tri Energy to NPAR: 24/430 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15513 | F | 9-6-8 | KAY KEYES | TRIENERGY HOLDINGS, LLC | 1/8+ | 718 330 | Tri Energy to NPAR: 24/430 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15514 | F | 9-6-8 | L PAUL CROW | TRIENERGY HOLDINGS, LLC | 1/8+ | 718 336 | Tri Energy to NPAR: 24/430 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15515 | F | 9-6-8 | DESIRE L CROW | TRIENERGY HOLDINGS, LLC | 1/8+ | 718 334 | Tri Energy to NPAR: 24/430 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15516 | F | 9-6-8 | ROSE MARIE KIELGCZEWSKI | TRIENERGY HOLDINGS, LLC | 1/8+ | 718 354 | Tri Energy to NPAR: 24/430 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15517 | F | 9-6-8 | DIANNE GELLNER & GARY GELLNER | TRIENERGY HOLDINGS, LLC | 1/8+ | 718 345 | Tri Energy to NPAR: 24/430 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15518 | F | 9-6-8 | JAMES P HOLLIDAY AND JACQUELINE HOLLIDAY | TRIENERGY HOLDINGS, LLC | 1/8+ | 718 347 | Tri Energy to NPAR: 24/430 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15519 | F | 9-6-8 | JOHN CROW | TRIENERGY HOLDINGS, LLC | 1/8+ | 726 580 | Tri Energy to NPAR: 25/449 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*15520 | F | 9-6-8 | TIMOTHY CROW | TRIENERGY HOLDINGS, LLC | 1/8+ | 726 582 | Tri Energy to NPAR: 25/449 | NPAR to Chevron: 756/332 | Chevron to Tug Hill: 36/148 |
| 10*47051.123.1 | F | 9-6-8 | LLOYD G BAKER | TH EXPLORATION LLC | 1/8+ | 865 389 | N/A | N/A | N/A |
| 10*47051.123.2 | F | 9-6-8 | JAMES P HOLLIDAY AND JACQUELINE HOLLIDAY | TH EXPLORATION LLC | 1/8+ | 873 143 | N/A | N/A | N/A |
| 10*15667 | G | 9-7-19 | KEVIN E MCGILTON ET UX | CHEVRON USA INC | 1/8+ | 850 351 | N/A | N/A | Chevron to Tug Hill: 36/148 |
| 10*16517 | H | 9-11-4 | RHDK INVESTMENTS | TH EXPLORATION LLC | 1/8+ | 907 550 | N/A | N/A | N/A |
| 10*15561 | I | 9-11-3 | VICKIE MASON | CHESAPEAKE APPALACHIA LLC | 1/8+ | 680 413 | N/A | Chesapeake to Chevron: 30/461 | Chevron to Tug Hill: 36/148 |
| 10*15562 | I | 9-11-3 | MARY A SOUTH | CHESAPEAKE APPALACHIA LLC | 1/8+ | 682 231 | N/A | Chesapeake to Chevron: 30/461 | Chevron to Tug Hill: 36/148 |
| 10*15563 | I | 9-11-3 | MARK L WHETZAL | CHESAPEAKE APPALACHIA LLC | 1/8+ | 682 544 | N/A | Chesapeake to Chevron: 30/461 | Chevron to Tug Hill: 36/148 |
| 10*15564 | I | 9-11-3 | RAY A WHETZAL JR | CHESAPEAKE APPALACHIA LLC | 1/8+ | 682 548 | N/A | Chesapeake to Chevron: 30/461 | Chevron to Tug Hill: 36/148 |
| 10*15565 | I | 9-11-3 | ROBERT L WHETZAL | CHESAPEAKE APPALACHIA LLC | 1/8+ | 682 552 | N/A | Chesapeake to Chevron: 30/461 | Chevron to Tug Hill: 36/148 |
| 10*15566 | I | 9-11-3 | SHARON L WHETZAL | CHESAPEAKE APPALACHIA LLC | 1/8+ | 682 556 | N/A | Chesapeake to Chevron: 30/461 | Chevron to Tug Hill: 36/148 |
| 10*47051.108.1 | I | 9-11-3 | MICHAEL A WHETZEL | TH EXPLORATION LLC | 1/8+ | 885 51 | N/A | Chesapeake to Chevron: 30/461 | Chevron to Tug Hill: 36/148 |
| 10*47051.108.5 | I | 9-11-3 | BRENDA J WHETZEL | TH EXPLORATION LLC | 1/8+ | 885 55 | N/A | Chesapeake to Chevron: 30/461 | Chevron to Tug Hill: 36/148 |
| 10*47051.108.6 | I | 9-11-3 | TERRI MCCARDLE | TH EXPLORATION LLC | 1/8+ | 985 23 | N/A | Chesapeake to Chevron: 30/461 | Chevron to Tug Hill: 36/148 |
| 10*47051.108.7 | I | 9-11-3 | GARY FRANCIS WHETZAL | TH EXPLORATION LLC | 1/8+ | 895 26 | N/A | Chesapeake to Chevron: 30/461 | Chevron to Tug Hill: 36/148 |
| 10*15584 | J | 9-11-5 | VICKIE MASON | CHESAPEAKE APPALACHIA LLC | 1/8+ | 686 239 | N/A | Chesapeake to Chevron: 30/461 | Chevron to Tug Hill: 36/148 |
| 10*15585 | J | 9-11-5 | SHARON L WHETZAL | CHESAPEAKE APPALACHIA LLC | 1/8+ | 687 147 | N/A | Chesapeake to Chevron: 30/461 | Chevron to Tug Hill: 36/148 |
| 10*15586 | J | 9-11-5 | MARY A SOUTH | CHESAPEAKE APPALACHIA LLC | 1/8+ | 690 615 | N/A | Chesapeake to Chevron: 30/461 | Chevron to Tug Hill: 36/148 |
| 10*15587 | J | 9-11-5 | ROBERT L WHETZAL | CHESAPEAKE APPALACHIA LLC | 1/8+ | 690 559 | N/A | Chesapeake to Chevron: 30/461 | Chevron to Tug Hill: 36/148 |

Office of Oil and Gas
 Environmental Protection

| Lease Name or No. | Tag | Parcel | Grantor, Lessor, ect. | Grantee, Lessee, ect. | Royalty | Deed Book/Pg | Assignment | Assignment | Assignment |
|-------------------|-----|---------|-----------------------|---------------------------|---------|--------------|------------|-------------------------------|--|
| 10*15588 | J | 9-11-5 | RAY A WHEZAL JR | CHESAPEAKE APPALACHIA LLC | 1/8+ | 693 571 | N/A | Chesapeake to Chevron: 30/461 | Assignment Chevron to Tug Hill: 36/530 |
| 10*15589 | J | 9-11-5 | MARK L WHEZAL | CHESAPEAKE APPALACHIA LLC | 1/8+ | 693 576 | N/A | Chesapeake to Chevron: 30/461 | Assignment Chevron to Tug Hill: 36/530 |
| 10*47051.108.1 | J | 9-11-5 | MICHAEL A WHEZEL | TH EXPLORATION LLC | 1/8+ | 885 51 | N/A | N/A | N/A |
| 10*47051.108.5 | J | 9-11-5 | BRENDA J WHEZEL | TH EXPLORATION LLC | 1/8+ | 885 55 | N/A | N/A | N/A |
| 10*16258 | K | 9-11-13 | CHESTNUT HOLDINGS INC | Fossil Creek Ohio, LLC | 1/8+ | 848 220 | N/A | N/A | Assignment Fossil Creek to Tug Hill: 36/530 |

RECORDED
 Office of Oil and Gas
 JAN 08 2014
 WV Department of Environmental Protection
 854-21017

AFFIDAVIT

STATE OF TEXAS §
COUNTY OF TARRANT § SS

On this 18th day of October, 2016, before me, the undersigned authority, personally appeared David D. Kalish ("Affiant") who being first duly sworn under oath, deposes and saith:

- 1. TH Exploration, LLC, TH Exploration II, LLC and TH Exploration III, LLC are wholly owned subsidiaries of THQ Appalachia I, LLC.
2. Tug Hill Operating, LLC provides oil and gas operations services to THQ Appalachia I, LLC under an Operating Services Agreement dated July 23, 2014.
3. David D. Kalish, the Affiant, is the Vice President of Tug Hill Operating, LLC, THQ Appalachia I, LLC, TH Exploration, LLC, TH Exploration II, LLC and TH Exploration III, LLC, and;
3. Tug Hill Operating, LLC is authorized to operate and maintain the assets owned by THQ Appalachia I, LLC, including, as referenced above, TH Exploration, LLC, TH Exploration II, LLC, and TH Exploration III, LLC, including oil and gas leases, wells, pipelines, surface facilities, and other all other assets that support the business of THQ Appalachia I, LLC, and;
4. Specifically, Tug Hill Operating, LLC is authorized to submit and obtain well work permits and carry out all activities pursuant to such work permits for assets owned by TH Exploration, LLC, TH Exploration II, LLC, TH Exploration III, LLC.

FURTHER, AFFIANT SAITH NOT.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this 18th day of October, 2016.

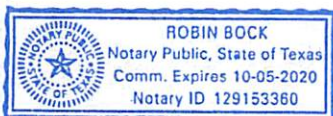
David D. Kalish
Affiant: David D. Kalish

JURAT

STATE OF TEXAS §
COUNTY OF TARRANT § SS

Sworn and subscribed to (or affirmed) before me on this, the 18th day of October, 2016, by David D. Kalish.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.



My Commission Expires: 10-05-2020
Signature/Notary Public: Robin Bock
Name/Notary Public (Print): Robin Bock

Vertical stamp: Carol S Hauert, METZEL County 10:29:27 AM, Instrument No 212093, Date Recorded 10/20/2016, Document Type AFFI, Pages Recorded 1, Book-Page 119-291, Recording Fee \$5.00, Additional \$6.00

RECEIVED
Office of Oil and Gas
JAN 10 2017
WV Department of Environmental Protection

51-01911
AB 24/196

Image Print

Page 2 of 2

REC-0024 MAR 21 196
STATE OF WEST VIRGINIA :
COUNTY OF MARSHALL :

ASSIGNMENT OF
OIL & GAS LEASES

KNOW ALL MEN BY THESE PRESENTS THAT

TRIENERGY HOLDINGS, LLC
412 Beaver Street, 2nd floor
Sewickley, PA 15143
("Assignor")

for and in consideration of Ten Dollars (\$10.00) and other valuable consideration, the receipt and sufficiency of which is hereby acknowledged, does hereby sell, assign, convey, transfer and set over unto:

NPAR, LLC
6802 W. Snowville Rd., Suite B
Brecksville, OH 44141
("Assignee")

A 100% WORKING INTEREST IN AND TO THOSE CERTAIN OIL AND GAS LEASES IN MARSHALL COUNTY, WEST VIRGINIA SET FORTH ON EXHIBIT "A", ATTACHED HERETO AND MADE A PART HEREOF (EACH INDIVIDUALLY A "LEASE" AND COLLECTIVELY THE "LEASES"); BUT EXCEPTING AND RESERVING UNTO ASSIGNOR IN AND TO EACH LEASE AN OVERRIDING ROYALTY EQUAL TO THE DIFFERENCE BETWEEN 10% AND THE LESSOR'S ROYALTY PROVIDED IN EACH LEASE, ON A LEASE BY LEASE BASIS IN ALL OIL, GAS, COALEBED METHANE GAS AND ASSOCIATED HYDROCARBONS PRODUCED, SAVED AND SOLD FROM THE LEASES, SUBJECT TO A PROPORTIONATE REDUCTION BASED ON PARTIAL LEASEHOLD INTEREST, AS DESCRIBED BELOW.

Assignor's overriding royalty interest received hereunder shall be calculated and paid in the same manner as the Lessor's royalty provided for in the subject LEASE. Furthermore, if any LEASE covers less than a full mineral interest in the lands described therein or if Assignor owns less than a full interest in a given LEASE, then Assignor's overriding royalty related thereto shall be proportionately reduced accordingly.

Assignor covenants with and warrants to Assignee, its successors and assigns, that Assignor is the lawful owner of the interests in each LEASE, that Assignor has good and right authority to sell and convey the same, and that the LEASES are free and clear of all encumbrances by, through or under Assignor.

Assignee, by the acceptance of this Assignment, hereby agrees to be bound by and fulfill all of the terms, conditions, limitations and covenants of the each LEASE. Assignor's overriding royalty reserved interest hereunder shall extend to any and all extensions or renewals of each LEASE that may be acquired by Assignee, its successors and assigns.

This Assignment shall extend and inure to the benefit of Assignor's and Assignee's respective heirs, executors, administrators, successors and assigns.

IN WITNESS WHEREOF, THE UNDERSIGNED HAVE SIGNED AND MADE DULY EFFECTIVE THIS INSTRUMENT THIS 24th DAY OF MARCH, 2011.

Witness:

ASSIGNOR
TRIENERGY HOLDINGS, LLC

Joseph B. Bojalec
President and Managing Partner

ASSIGNEE

Witness:

NPAR, LLC
Gordon O. Yoast
Chief Executive Officer

AB
LEGAL
CJS

<http://129.71.117.225/printframe.aspx>

RECEIVED
Office of Oil and Gas
02/29/2013

JAN 03 2017

WV Department of
Environmental Protection
05/12/2017

Pages Omitted

ASN 24/430

AP 2K5

BOOK 0024 PAGE 0430
STATE OF WEST VIRGINIA :
COUNTY OF MARSHALL :

ASSIGNMENT OF
OIL & GAS LEASES

KNOW ALL MEN BY THESE PRESENTS THAT

TRIENERGY HOLDINGS, LLC
412 Beaver Street, 2nd floor
Sewickley, PA 15143
("Assignor")

for and in consideration of Ten Dollars (\$10.00) and other valuable consideration, the receipt and sufficiency of which is hereby acknowledged, does hereby sell, assign, convey, transfer and set over unto:

NPAR, LLC
6802 W. Snowville Rd., Suite E
Brecksville, OH 44141
("Assignee")

Witness

A 100% WORKING INTEREST IN AND TO THOSE CERTAIN OIL AND GAS LEASES IN MARSHALL COUNTY, WEST VIRGINIA SET FORTH ON EXHIBIT "A", ATTACHED HERETO AND MADE A PART HEREOF (EACH INDIVIDUALLY A "LEASE" AND COLLECTIVELY THE "LEASES"); BUT EXCEPTING AND RESERVING UNTO ASSIGNOR IN AND TO EACH LEASE AN OVERRIDING ROYALTY EQUAL TO THE DIFFERENCE BETWEEN 20% AND THE LESSOR'S ROYALTY PROVIDED IN EACH LEASE, ON A LEASE BY LEASE BASIS, BUT IN NO EVENT SHALL ASSIGNOR'S OVERRIDING ROYALTY BE GREATER THAN FOUR PERCENT OF 8/8THS (4% OF 8/8THS) OR LESS THAN TWO PERCENT OF 8/8THS (2% OF 8/8THS) IN ALL OIL, GAS, COALBED METHANE GAS AND ASSOCIATED HYDROCARBONS PRODUCED, SAVED AND SOLD FROM THE LEASES, SUBJECT TO A PROPORTIONATE REDUCTION BASED ON PARTIAL LEASEHOLD INTEREST, AS DESCRIBED BELOW.

Assignor's overriding royalty interest reserved hereunder shall be calculated and paid in the same manner as the Lessor's royalty provided for in the subject LEASE. Furthermore, if any LEASE covers less than a full mineral interest in the lands described therein or if Assignor owns less than a full interest in a given LEASE, then Assignor's overriding royalty related thereto shall be proportionately reduced accordingly.

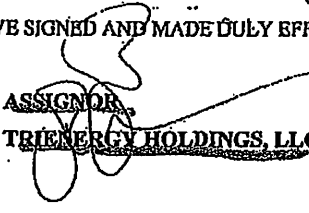
Assignor covenants with and warrants to Assignee, its successors and assigns, that Assignor is the lawful owner of the interests in each LEASE, that Assignor has good and right authority to sell and convey the same, and that the LEASES are free and clear of all encumbrances by, through or under Assignor.

Assignee, by the acceptance of this Assignment, hereby agrees to be bound by and fulfill all of the terms, conditions, limitations and covenants of the each LEASE. Assignor's overriding royalty reserved interest hereunder shall extend to any and all extensions or renewals of each LEASE that may be acquired by Assignee, its successors and assigns.

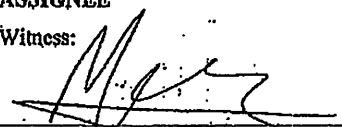
This Assignment shall extend and inure to the benefit of Assignor's and Assignee's respective heirs, executors, administrators, successors and assigns.

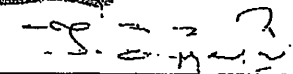
IN WITNESS WHEREOF, THE UNDERSIGNED HAVE SIGNED AND MADE DULY EFFECTIVE THIS INSTRUMENT THIS 28th DAY OF MAY, 2011.

Witness: 

ASSIGNOR
TRIENERGY HOLDINGS, LLC

Joseph E. Bojalad
President and Managing Partner

Jan Pest
MARSHALL County 11:45:09 AM
Instrument No 1306153
Date Recorded 06/13/2011
Document Type ASN
Pages Recorded 13
Book-Page 24-430
Recording Fee \$25.00
Additional \$7.00

ASSIGNEE
Witness: 

ASSIGNEE
NPAR, LLC


RECEIVED
Office of Oil and Gas

JAN 03 2017
WV Department of Environmental Protection
05/13/2017

STATE OF WEST VIRGINIA :
COUNTY OF MARSHALL :

ASSIGNMENT OF
OIL & GAS LEASES

KNOW ALL MEN BY THESE PRESENTS THAT

TRIENERGY HOLDINGS, LLC
412 Beaver Street, 2nd floor
Sewickley, PA 15143
("Assignor")

for and in consideration of Ten Dollars (\$10.00) and other valuable consideration, the receipt and sufficiency of which is hereby acknowledged, does hereby sell, assign, convey, transfer and set over unto:

NPAR, LLC
6802 W. Snowville Rd., Suite E
Brecksville, OH 44141
("Assignee")

~~A 100% WORKING INTEREST IN AND TO THOSE CERTAIN OIL AND GAS LEASES IN MARSHALL COUNTY, WEST VIRGINIA SET FORTH ON EXHIBIT "A", ATTACHED HERETO AND MADE A PART HEREOF (EACH INDIVIDUALLY A "LEASE" AND COLLECTIVELY THE "LEASES"); BUT EXCEPTING AND RESERVING UNTO ASSIGNOR IN AND TO EACH LEASE AN OVERRIDING ROYALTY EQUAL TO THE DIFFERENCE BETWEEN 20% AND THE LESSOR'S ROYALTY PROVIDED IN EACH LEASE, ON A LEASE BY LEASE BASIS; BUT IN NO EVENT SHALL ASSIGNOR'S OVERRIDING ROYALTY BE GREATER THAN FOUR PERCENT OF 8/8'S (4% of 8/8'S) OR LESS THAN TWO PERCENT OF 8/8'S (2% of 8/8'S) IN ALL OIL, GAS, COALBED METHANE GAS AND ASSOCIATED HYDROCARBONS PRODUCED, SAVED AND SOLD FROM THE LEASES, SUBJECT TO A PROPORTIONATE REDUCTION BASED ON PARTIAL LEASEHOLD INTEREST, AS DESCRIBED BELOW.~~

Assignor's overriding royalty interest reserved hereunder shall be calculated and paid in the same manner as the Lessor's royalty provided for in the subject LEASE. Furthermore, if any LEASE covers less than a full mineral interest in the lands described therein or if Assignor owns less than a full interest in a given LEASE, then Assignor's overriding royalty related thereto shall be proportionately reduced accordingly.

Assignor covenants with and warrants to Assignee, its successors and assigns, that Assignor is the lawful owner of the interests in each LEASE, that Assignor has good and right authority to sell and convey the same, and that the LEASES are free and clear of all encumbrances by, through or under Assignor.

Assignee, by the acceptance of this Assignment, hereby agrees to be bound by and fulfill all of the terms, conditions, limitations and covenants of the each LEASE; Assignor's overriding royalty interest reserved hereunder shall extend to any and all extensions or renewals of each LEASE that may be acquired by Assignee, its successors and assigns.

This Assignment shall extend and inure to the benefit of Assignor's and Assignee's respective heirs, executors, administrators, successors and assigns.

IN WITNESS WHEREOF, THE UNDERSIGNED HAVE SIGNED AND MADE DULY EFFECTIVE THIS INSTRUMENT THIS 3rd DAY OF August, 2011.

Witness:

Debra Reed

ASSIGNOR
TRIENERGY HOLDINGS, LLC

Joseph E. Bojalad
President and Managing Partner

TRIENERGY HOLDINGS, LLC
PO BOX 89
SEWICKLEY, PA 15143-0089

Jan Post
MARSHALL County 12:50:36 PM
Instrument No 1308986
Date Recorded 08/04/2011
Document Type ASN
Pages Recorded 10
Book-Page 25-463
Recording Fee \$10.00
Additional \$7.00

ASSIGNEE

Witness:

Janine A. ...

NPAR, LLC

Gordon O. Yonel
Chief Executive Officer

RECEIVED
Office of Oil and Gas

JAN 08 2017

8/5/2011
WV Department of
Environmental Protection

Pages Omitted

BOOK 25/449

ASN 25/449

BOOK 0025 PAGE 0449

STATE OF WEST VIRGINIA :
COUNTY OF MARSHALL :

ASSIGNMENT OF OIL & GAS LEASES

KNOW ALL MEN BY THESE PRESENTS THAT

TRIENERGY HOLDINGS, LLC
412 Beaver Street, 2nd floor
Sewickley, PA 15143
("Assignor")

for and in consideration of Ten Dollars (\$10.00) and other valuable consideration, the receipt and sufficiency of which is hereby acknowledged, does hereby sell, assign, convey, transfer and set over unto:

NPAR, LLC
6802 W. Snowville Rd., Suite E
Brecksville, OH 44141
("Assignee")

A 100% WORKING INTEREST IN AND TO THOSE CERTAIN OIL AND GAS LEASES IN MARSHALL COUNTY, WEST VIRGINIA SET FORTH ON EXHIBIT "A", ATTACHED HERETO AND MADE A PART HEREOF (EACH INDIVIDUALLY A "LEASE" AND COLLECTIVELY THE "LEASES"), BUT EXCEPTING AND RESERVING INTO ASSIGNOR IN AND TO EACH LEASE AN OVERRIDING ROYALTY EQUAL TO THE DIFFERENCE BETWEEN 20% AND THE LESSOR'S ROYALTY PROVIDED IN EACH LEASE ON A LEASE BY LEASE BASIS; BUT IN NO EVENT SHALL ASSIGNOR'S OVERRIDING ROYALTY BE GREATER THAN FOUR PERCENT OF 8/8THS (4% OF 8/8th) OR LESS THAN TWO PERCENT OF 8/8THS (2% OF 8/8th) IN ALL OIL, GAS, COALBED METHANE GAS AND ASSOCIATED HYDROCARBONS PRODUCED, SAVED AND SOLD FROM THE LEASES, SUBJECT TO A PROPORTIONATE REDUCTION BASED ON PARTIAL LEASEHOLD INTEREST, AS DESCRIBED BELOW.

Assignor's overriding royalty interest reserved hereunder shall be calculated and paid in the same manner as the Lessor's royalty provided for in the subject LEASE. Furthermore, if any LEASE covers less than a full mineral interest in the lands described therein or if Assignor owns less than a full interest in a given LEASE, then Assignor's overriding royalty related thereto shall be proportionately reduced accordingly.

Assignor covenants with and warrants to Assignee, its successors and assigns, that Assignor is the lawful owner of the interests in each LEASE, that Assignor has good and right authority to sell and convey the same, and that the LEASES are free and clear of all encumbrances by, through or under Assignor.

Assignee, by the acceptance of this Assignment, hereby agrees to be bound by and fulfill all of the terms, conditions, limitations and covenants of the each LEASE. Assignor's overriding royalty interest reserved hereunder shall extend to any and all extensions or renewals of each LEASE that may be acquired by Assignee, its successors and assigns.

This Assignment shall extend and inure to the benefit of Assignor's and Assignee's respective heirs, executors, administrators, successors and assigns.

IN WITNESS WHEREOF, THE UNDERSIGNED HAVE SIGNED AND MADE DULY EFFECTIVE THIS INSTRUMENT THIS 3rd DAY OF August, 2011.

Witness:

Debra Reid

ASSIGNOR
TRIENERGY HOLDINGS, LLC

Joseph E. Bojalad
President and Managing Partner

TRIENERGY HOLDINGS, LLC
PO BOX 89
SEWICKLEY, PA 15143-0089

ASSIGNEE

Witness:

Patricia A. Dier

Jan Pest
MARSHALL County 12:48:53 PM
Instrument No 1308985
Date Recorded 08/04/2011
Document Type ASN
Pages Recorded 14
Book-Page 25-449
Recording Fee \$14.00
Additional 47.00

NPAR, LLC

Gordon O. Yonel
Chief Executive Officer

RECEIVED
Office of Oil and Gas

8/3/2011

JAN 03 2017

WV Department of Environmental Protection

* Pages Omitted

BOOK 0756 PAGE 0332

JIM BOURBEAU LAND SERVICE INC.
11106 ST HWY 18
CORNEAULT LAKE, PA 16316-3620

Jan Pest
MARSHALL County 10:52:20 AM
Instrument No 1317416
Date Recorded 01/26/2012
Document Type O&G
Pages Recorded 65
Book-Page 756-332
Recording Fee \$65.00
Additional \$12.00

MARSHALL COUNTY, WEST VIRGINIA

CONVEYANCE

This Conveyance (this "Conveyance") is dated as of August 5, 2011 (the "Execution Date"), by and between NPAR, LLC, a Delaware limited liability company ("Grantor"), on the one part, and Chevron U.S.A. Inc., a Pennsylvania corporation ("Grantee"), on the other part. Each of Grantor and Grantee are sometimes referred to herein individually as a "Party" and collectively as the "Parties."

Capitalized terms used but not defined herein shall have the respective meanings set forth in that certain Purchase and Sale Agreement (the "PSA"), dated as of July 6, 2011, by and between Grantor and Grantee.

ARTICLE I CONVEYANCE

Section 1.1 Conveyance. Subject to the terms and conditions hereof, with effect as of 7:00 a.m.; Eastern Time, on April 1, 2011 (the "Effective Date"), Grantor, for and in consideration of the sum of Ten Dollars (\$10.00) cash and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, hereby sells, transfers and conveys unto Grantee, and Grantee hereby accepts from Grantor, all of Grantor's right, title and interest in and to the following (collectively the "Assets"); but excepting and excluding, in all such instances, the Excluded Assets):

(a) All oil and gas leases, oil, gas and mineral leases, subleases and other leaseholds, royalties, overriding royalties, net profits interests, mineral fee interests, carried interests and other rights to Hydrocarbons in place owned by Grantor in the Asset Areas, including those that are identified on Exhibit A-1 (collectively, the "Leases"), subject to the depth limitations and other restrictions that may be set forth in the Leases;

(b) All pooled, communitized or unitized acreage which includes all or a part of any Lease (the "Units"), and all tenements, hereditaments and appurtenances belonging to the Leases and Units;

(c) All oil, gas, water, carbon dioxide or injection wells located on the Leases or Units, whether producing, shut-in or temporarily abandoned, including the interests in the wells shown on Exhibit A-2 (the "Wells");

(d) All flowlines, pipelines, gathering systems and appurtenances thereto located on the Leases or Units or used, or held for use, in connection with the operation of the

JIN865779.1

RECEIVED
Office of Oil and Gas

JAN 03 2017

WV Department of
Environmental Protection
05/12/2017



December 21, 2016

WV Department of Environmental Protection
Office of Oil & Gas
601 57th Street, SE
Charleston, WV 25304
Attention: Laura Cooper

RE: Heaven Hill Unit 2-7HU

Subject: County Route 21/3 Road Crossing Letter

Dear Laura:

Tug Hill Operating, LLC (THO) hereby submits this letter as confirmation that THO has obtained the right to drill, extract and produce the minerals under Marshall County Route 21/3 in the area reflected on the Heaven Hill Unit 2-7HU well plat. THO has conducted a full title search in the relevant Court House to confirm its ownership under said County Route and is not currently aware of any recorded document that would suggest an ownership other than THO.

If your office has any questions or concerns regarding the contents of this letter, please do not hesitate to contact me directly at 304-689-7676, or by email at jwhite@tug-hilop.com.

Sincerely,

A handwritten signature in blue ink that reads "Jonathan White".

Jonathan White
Regulatory Analyst – Appalachia Region
Cell 304-689-7676
Email: jwhite@tug-hilop.com

**STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE CERTIFICATION**

Date of Notice Certification: 12/29/2016

API No. 47- 051 - 01911
Operator's Well No. Heaven Hill Unit 2-7HU
Well Pad Name: Heaven Hill Unit 2

Notice has been given:

Pursuant to the provisions in West Virginia Code § 22-6A, the Operator has provided the required parties with the Notice Forms listed below for the tract of land as follows:

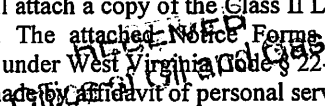
| | |
|---------------------------------------|--|
| State: <u>West Virginia</u> | UTM NAD 83 Easting: <u>524,572.67</u> |
| County: <u>Marshall</u> | UTM NAD 83 Northing: <u>4,406,713.22</u> |
| District: <u>Meade</u> | Public Road Access: <u>Blake Ridge Road (Co. Rt. 21/3)</u> |
| Quadrangle: <u>Glen Easton 7.5'</u> | Generally used farm name: <u>Charles R. Hagedorn, Jr., et ux</u> |
| Watershed: <u>(HUC 10) Fish Creek</u> | |

Pursuant to West Virginia Code § 22-6A-7(b), every permit application filed under this section shall be on a form as may be prescribed by the secretary, shall be verified and shall contain the following information: (14) A certification from the operator that (i) it has provided the owners of the surface described in subdivisions (1), (2) and (4), subsection (b), section ten of this article, the information required by subsections (b) and (c), section sixteen of this article; (ii) that the requirement was deemed satisfied as a result of giving the surface owner notice of entry to survey pursuant to subsection (a), section ten of this article six-a; or (iii) the notice requirements of subsection (b), section sixteen of this article were waived in writing by the surface owner; and Pursuant to West Virginia Code § 22-6A-11(b), the applicant shall tender proof of and certify to the secretary that the notice requirements of section ten of this article have been completed by the applicant.

| | |
|---|---|
| <p>Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p> | <p>OOG OFFICE USE ONLY</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> |
|---|---|

Required Attachments:

The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

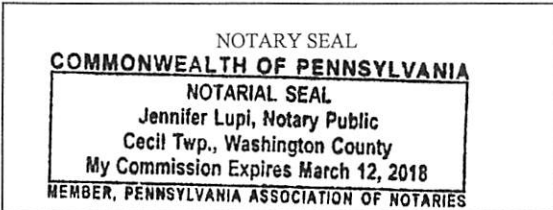

JAN 03 2017
 WV Department of
 Environmental Protection
 05/12/2017

Certification of Notice is hereby given:

THEREFORE, I Jonathan White, have read and understand the notice requirements within West Virginia Code § 22-6A. I certify that as required under West Virginia Code § 22-6A, I have served the attached copies of the Notice Forms, identified above, to the required parties through personal service, by registered mail or by any method of delivery that requires a receipt or signature confirmation. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Notice Certification and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator: Tug Hill Operating, LLC
By: Jonathan White *Jonathan White*
Its: Regulatory Analyst - Appalachia
Telephone: 724-338-2026

Address: 380 Southpointe Blvd, Southeointe Plaza II, Suite 200
Canonsburg, PA 15317
Facsimile: 724-338-2030
Email: jwhite@tug-hillop.com



Subscribed and sworn before me this 29th day of December 2016
Jennifer Lupi Notary Public
My Commission Expires March 12, 2018

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

RECEIVED
Office of Oil and Gas
JAN 03 2017
WV Department of
Environmental Protection
05/12/2017

**STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF APPLICATION**

Notice Time Requirement: notice shall be provided no later than the filing date of permit application.

Date of Notice: 12/29/2016 **Date Permit Application Filed:** 12/29/16

Notice of:

- PERMIT FOR ANY WELL WORK
- CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT

Delivery method pursuant to West Virginia Code § 22-6A-10(b)

- PERSONAL SERVICE
- REGISTERED MAIL
- METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to W. Va. Code § 22-6A-10(b) no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner. W. Va. Code R. § 35-8-5.7.a requires, in part, that the operator shall also provide the Well Site Safety Plan ("WSSP") to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Application Notice WSSP Notice E&S Plan Notice Well Plat Notice is hereby provided to:

SURFACE OWNER(s)

Name: Charles R. Hagedorn, Jr., ex ux
Address: 78 Hagedorn Drive
Glen Easton, WV 26039

Name: None
Address: _____

SURFACE OWNER(s) (Road and/or Other Disturbance)

Name: Michael J. Rine, et ux
Address: 1466 Blake Ridge Road
Glen Easton, WV 26039

Name: _____
Address: _____

SURFACE OWNER(s) (Impoundments or Pits)

Name: None
Address: _____

COAL OWNER OR LESSEE

Name: Murray Energy Corporation
Address: 46226 National Road
St. Clairsville, OH 43950

COAL OPERATOR

Name: Same as above coal owner
Address: _____

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)

Name: _____
Address: _____
*See supplement page 1A attached

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: None
Address: _____

*Please attach additional forms if necessary

RECEIVED
Office of Oil and Gas
JAN 09 2017
WV Department of Environmental Protection
01/12/2017

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-10(b), notice is hereby given that the undersigned well operator has applied for a permit for well work or for a certificate of approval for the construction of an impoundment or pit.

This Notice Shall Include:

Pursuant to W. Va. Code § 22-6A-10(b), this notice shall include: (1) copies of the application; (2) the erosion and sediment control plan required by section seven of this article; and (3) the well plat.

Pursuant to W. Va. Code § 22-6A-10(f), this notice shall include: (1) a statement of the time limits for filing written comments; (2) who may file written comments; (3) the name and address of the secretary for the purpose of filing the comments and obtaining additional information; and (4) a statement that the persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

Pursuant to W. Va. Code R. § 35-8-5.7.a, the operator shall provide the Well Site Safety Plan to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Pursuant to W. Va. Code R. § 35-8-15.2.c, this notice shall: (1) contain a statement of the surface owner's and water purveyor's right to request sampling and analysis; (2) advise the surface owner and water purveyor of the rebuttable presumption for contamination or deprivation of a fresh water source or supply; advise the surface owner and water purveyor that refusal to allow the operator to conduct a pre-drilling water well test constitutes a method to rebut the presumption of liability; (3) advise the surface owner and water purveyor of his or her independent right to sample and analyze any water supply at his or her own expense; advise the surface owner and water purveyor whether or not the operator will utilize an independent laboratory to analyze any sample; and (4) advise the surface owner and or water purveyor that he or she can obtain from the Chief a list of water testing laboratories in the subject area capable of and qualified to test water supplies in accordance with standard acceptable methods.

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Location Restrictions

Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2012, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items

RECEIVED
Office of Oil and Gas
JAN 10 2017
WV Department of
Environmental Protection
05/12/2017

examined in the study required by this subsection, the secretary shall have the authority to propose for promulgation legislative rules establishing guidelines and procedures regarding reasonable levels of noise, light, dust and volatile organic compounds relating to drilling horizontal wells, including reasonable means of mitigating such factors, if necessary.

Water Well Testing:

Pursuant to West Virginia Code § 22-6A-10(d), notification shall be made, with respect to surface landowners identified in subsection (b) or water purveyors identified in subdivision (5), subsection (b) of this section, of the opportunity for testing their water well. The operator shall provide an analysis to such surface landowner or water purveyor at their request.

Water Testing Laboratories:

Pursuant to West Virginia Code § 22-6A-10(i), persons entitled to notice pursuant to subsection (b) of this section may contact the department to ascertain the names and locations of water testing laboratories in the subject area capable and qualified to test water supplies in accordance with standard accepted methods. In compiling that list of names the department shall consult with the state Bureau for Public Health and local health departments. A surface owner and water purveyor has an independent right to sample and analyze any water supply at his or her own expense. The laboratory utilized by the operator shall be approved by the agency as being certified and capable of performing sample analyses in accordance with this section.

Rebuttable Presumption for Contamination or Deprivation of a Fresh Water Source or Supply:

W. Va. Code § 22-6A-18 requires that (b) unless rebutted by one of the defenses established in subsection (c) of this section, in any action for contamination or deprivation of a fresh water source or supply within one thousand five hundred feet of the center of the well pad for horizontal well, there is a rebuttable presumption that the drilling and the oil or gas well or either was the proximate cause of the contamination or deprivation of the fresh water source or supply. (c) In order to rebut the presumption of liability established in subsection (b) of this section, the operator must prove by a preponderance of the evidence one of the following defenses: (1) The pollution existed prior to the drilling or alteration activity as determined by a predrilling or prealteration water well test. (2) The landowner or water purveyor refused to allow the operator access to the property to conduct a predrilling or prealteration water well test. (3) The water supply is not within one thousand five hundred feet of the well. (4) The pollution occurred more than six months after completion of drilling or alteration activities. (5) The pollution occurred as the result of some cause other than the drilling or alteration activity. (d) Any operator electing to preserve its defenses under subdivision (1), subsection (c) of this section shall retain the services of an independent certified laboratory to conduct the predrilling or prealteration water well test. A copy of the results of the test shall be submitted to the department and the surface owner or water purveyor in a manner prescribed by the secretary. (e) Any operator shall replace the water supply of an owner of interest in real property who obtains all or part of that owner's supply of water for domestic, agricultural, industrial or other legitimate use from an underground or surface source with a comparable water supply where the secretary determines that the water supply has been affected by contamination, diminution or interruption proximately caused by the oil or gas operation, unless waived in writing by that owner. (f) The secretary may order the operator conducting the oil or gas operation to: (1) Provide an emergency drinking water supply within twenty-four hours; (2) Provide temporary water supply within seventy-two hours; (3) Within thirty days begin activities to establish a permanent water supply or submit a proposal to the secretary outlining the measures and timetables to be used in establishing a permanent supply. The total time in providing a permanent water supply may not exceed two years. If the operator demonstrates that providing a permanent replacement water supply cannot be completed within two years, the secretary may extend the time frame on case-by-case basis; and (4) Pay all reasonable costs incurred by the real property owner in securing a water supply. (g) A person as described in subsection (b) of this section aggrieved under the provisions of subsections (b), (e) or (f) of this section may seek relief in court... (i) Notwithstanding the denial of the operator of responsibility for the damage to the real property owner's water supply or the status of any appeal on determination of liability for the damage to the real property owner's water supply, the operator may not discontinue providing the required water service until authorized to do so by the secretary or a court of competent jurisdiction.

Written Comment:

Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary. All persons described in West Virginia Code § 22-6A-10(b) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

Chief, Office of Oil and Gas
Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
(304) 926-0450

RECEIVED
Office of Oil and Gas
JAN 09 2017

Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water. **NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.**

WV Department of
Environmental Protection

Time Limits and Methods for Filing Comments.

The law requires these materials to be served on or before the date the operator files its Application. You have **THIRTY (30) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Pursuant to West Virginia Code § 22-6A-11(c)(2), Any objections of the affected coal operators and coal seam owners and lessees shall be addressed through the processes and procedures that exist under sections fifteen, seventeen and forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article. The written comments filed by the parties entitled to notice under subdivisions (1), (2), (4), (5) and (6), subsection (b), section ten of this article shall be considered by the secretary in the permit issuance process, but the parties are not entitled to participate in the processes and proceedings that exist under sections fifteen, seventeen or forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article.

Comment Requirements

Your comments must be in writing and include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

Disclaimer: All comments received will be placed on our web site <http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx> and the applicant will automatically be forwarded an email notice that such comments have been submitted. The applicant will be expected to provide a response to comments submitted by any surface owner, water purveyor or natural gas storage operator noticed within the application.

Permit Denial or Condition

The Chief has the power to deny or condition a well work permit. Pursuant to West Virginia Code § 22-6A-8(d), the permit may not be issued or be conditioned, including conditions with respect to the location of the well and access roads prior to issuance if the director determines that:

- (1) The proposed well work will constitute a hazard to the safety of persons;
- (2) The plan for soil erosion and sediment control is not adequate or effective;
- (3) Damage would occur to publicly owned lands or resources; or
- (4) The proposed well work fails to protect fresh water sources or supplies.

A permit may also be denied under West Virginia Code § 22-6A-7(k), the secretary shall deny the issuance of a permit if the secretary determines that the applicant has committed a substantial violation of a previously issued permit for a horizontal well, including the applicable erosion and sediment control plan associated with the previously issued permit, or a substantial violation of one or more of the rules promulgated under this article, and in each instance has failed to abate or seek review of the violation within the time prescribed by the secretary pursuant to the provisions of subdivisions (1) and (2), subsection (a), section five of this article and the rules promulgated hereunder, which time may not be unreasonable.

Pursuant to West Virginia Code § 22-6A-10(g), any person entitled to submit written comments to the secretary pursuant to subsection (a), section eleven of this article, shall also be entitled to receive from the secretary a copy of the permit as issued or a copy of the order modifying or denying the permit if the person requests receipt of them as a part of the written comments submitted concerning the permit application. Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

RECEIVED
Office of Oil and Gas

JAN 03 2017

WV Department of
Environmental Protection
05/12/2017

Notice is hereby given by:

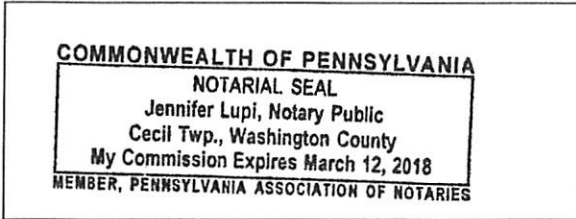
Well Operator: Tug Hill Operating, LLC
Telephone: 724-338-2026
Email: jwhite@tug-hilltop.com

Address: 380 Southpointe Blvd, Southpointe Plaza II, Suite 200
Canonsburg, PA 15317
Facsimile: 724-338-2030

Oil and Gas Privacy Notice:

Jonathan White

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at deprivacyofficer@wv.gov.



Subscribed and sworn before me this 29th day of Dec, 2016.

Jennifer Lupi Notary Public

My Commission Expires March 12, 2018

WW-6A

Supplement Pg. 1A

December 29, 2016
 Tug Hill Operating, LLC
 380 Southpointe BLVD
 Suite 200
 Canonsburg, PA 15317

WATER WELL REPORT

Well: Heaven Hill Unit 2-7HU
 District: Meade
 County: Marshall
 State: WV

There appears to be No (6) possible water sources within 2,000 feet of the above referenced well location.

| | | |
|---|--|---|
| House 1 TM 07 Par. 3.1 Charles R. Hagedorn Jr., et ux Phone 304-845-7332 78 Hagedorn Rd. Glen Easton, WV 26039 | House 2 TM 07 Par. 3.1 Charles R. Hagedorn Jr., et ux Phone 304-845-7332 78 Hagedorn Rd. Glen Easton, WV 26039 | House 3 TM 07 Par. 3 Charles R. Hagedorn Jr., et ux Phone 304-845-7332 78 Hagedorn Rd. Glen Easton, WV 26039 |
| House 4 TM 07 Par. 1 Michael Rine, et ux Phone 304-845-4437 1466 Blake Ridge Road Glen Easton, WV 26039 | Spring with House 4 TM 07 Par. 1 Michael Rine, et ux Phone 304-845-4437 1466 Blake Ridge Road Glen Easton, WV 26039 | House 5 TM 06 Par. 07 Scott & Carolyn Harris Phone 304-845-0747 1944 Blake Ridge Road Glen Easton, WV 26039 |

RECEIVED
Office of Oil and Gas

JAN 09 2017

WV Department of
Environmental Protection
05/12/2017

AGREEMENT
FOR
COAL WAIVER AND CONDITIONAL DRILLING ACTIVITY

This Agreement, effective this 29th day of July, 2016, by and between, CONSOLIDATION COAL COMPANY, a Delaware Corporation, and Murray American Energy, Inc., a Delaware Corporation, both of whose mailing address is 46226 National Road, St. Clairsville, OH 43905, hereinafter collectively referred to as "COMPANY,"

A N D

Tug Hill Operating, a Texas limited liability company, having a place of business at 1320 S. University Drive, Suite 500, Fort Worth, Texas 76107, hereinafter referred to as "TUG HILL." Company and Tug Hill are sometimes referred to herein, collectively, as the "Parties" and, individually, as a "Party."

PREAMBLE

WHEREAS, TUG HILL intends to apply to the West Virginia Department of Environmental Protection for a permit to drill gas wells listed in Table 1 on the pad known as the HEAVEN HILL UNIT 2 wells at a location in Meade District, Marshall County, West Virginia; and

WHEREAS, COMPANY through itself and/or any one or more of its affiliates, owns or controls the Pittsburgh #8 seam of coal at the proposed location of the proposed HEAVEN HILL UNIT 2 wells and said wells when drilled will penetrate the Pittsburgh #8 seam of coal; and

WHEREAS, TUG HILL has a regulatory obligation and responsibility to notify coal seam owners of its intent to drill and develop oil/gas wells through such coal seams; and

WHEREAS, TUG HILL has requested COMPANY to sign a WW-6AW Voluntary Statement of No Objection form, which COMPANY is willing to sign subject to the conditions set forth in this Agreement.

NOW, THEREFORE, in consideration of the commitments set forth herein and intending to be legally bound hereby the Parties do hereby agree as follows:

RECEIVED
Office of Oil and Gas

JAN 09 2017

/ of WV Department of
Environmental Protection

05/12/2017

1. The approved surface locations of the proposed HEAVEN HILL UNIT 2 wells are listed in Table 1 in WV State Plane North NAD 27 coordinate system. The HEAVEN HILL UNIT 2 wells shall only be drilled at these surface locations.

Table 1: Well Locations

| Well Name | Northing | Easting |
|------------------------|-----------|------------|
| Heaven Hill Unit 2-1HM | 479450.81 | 1659233.08 |
| Heaven Hill Unit 2-2HM | 479440.96 | 1659225.39 |
| Heaven Hill Unit 2-3HM | 479431.10 | 1659217.70 |
| Heaven Hill Unit 2-4HM | 479411.39 | 1659202.33 |
| Heaven Hill Unit 2-5HM | 479401.53 | 1659194.64 |
| Heaven Hill Unit 2-6HU | 479460.67 | 1659240.76 |
| Heaven Hill Unit 2-7HU | 479421.25 | 1659210.01 |
| Heaven Hill Unit 2-8HU | 479391.68 | 1659186.95 |

2. The proposed HEAVEN HILL UNIT 2 wells are located in an existing interior barrier of the active Marshall County Mine. Hence, the drilling of the proposed HEAVEN HILL UNIT 2 wells shall strictly follow the procedures set forth in the Agreement.
3. COMPANY shall develop procedures and submit well protection pillar permit applications to the applicable coal mining regulatory authorities to secure approval to drill the proposed HEAVEN HILL UNIT 2 near, around, or adjacent to existing mine workings. COMPANY will design the protection pillar to provide a minimum coal barrier of fifty feet (50') from its existing underground mining activities to the location of the active HEAVEN HILL UNIT 2 wells within the Pittsburgh #8 coal seam.
4. COMPANY shall provide TUG HILL with a copy of the procedures and well protection pillar permit applications for TUG HILL's review prior to submittal to the applicable coal mining regulatory agencies.
5. Once all the required approvals are received to drill the proposed HEAVEN HILL UNIT 2 wells near, around, or adjacent to the existing mine workings, TUG HILL may proceed with the drilling of HEAVEN HILL UNIT 2 wells in accordance to the procedures and requirements of this Agreement, provided that TUG HILL shall also comply with any and all requirements applicable to TUG HILL imposed by the coal mining regulatory agencies within the approvals, which procedures and requirements are articulated and contained herein.

RECEIVED
Office of Oil and Gas

JAN 03 2017

WV 064
Department of
Environmental Protection

05/12/2017

6. TUG HILL agrees that if a coal mining regulatory agency does not approve the proposed well protection pillar permit or the procedures and plans to drill the proposed HEAVEN HILL UNIT 2 wells near, around or adjacent to the existing mine workings, then the Parties will work together to determine an alternative protection pillar permit that meets the coal mining regulatory agency's approval. If the coal mining regulatory agency's approval is not thereafter acquired, then this Agreement is voided and is no longer in effect and COMPANY rescinds its consent to drill the HEAVEN HILL UNIT 2 wells.
7. TUG HILL shall provide COMPANY with written notification at least two (2) weeks prior to the commencement of well drilling activities to provide sufficient time for COMPANY to verify and approve the surveyed location of the proposed wells. TUG HILL and COMPANY shall maintain continued communication during the well drilling process.
8. Once the surveyed surface location is verified, TUG HILL may drill from the surface pad to a depth no closer than twenty feet (20') from the top of the Pittsburgh #8 coal seam.
9. TUG HILL shall then, at its expense, have a well deviation survey conducted in the well boring from the surface to the drilled depth approximately twenty feet (20') above the Pittsburgh #8 coal seam and shall promptly provide the certified results of the deviation survey to COMPANY. The well shall be limited to a total deviation not to exceed one percent (1%) to assure the well boring will penetrate through the Pittsburgh #8 coal seam within the area approved by the coal mining regulatory agencies.
10. TUG HILL shall use water, water sprays, drilling soap or other approved drilling fluids while drilling after the surface casing is installed through the Pittsburgh #8 coal seam and continue drilling with fluids until the steel coal protection casing is effectively installed and cemented in place below the Pittsburgh #8 coal seam in accordance with all rules, regulations, and approvals for the drilling operation.
11. If the drilled well boring is less than or equal to the required one percent (1%) maximum deviation, TUG HILL may proceed with its planned drilling activities in accordance to all applicable laws and regulations. TUG HILL and COMPANY shall continue to maintain communication through the completion of the well drilling and installation processes.
12. If the well boring deviation exceeds one percent (1%), TUG HILL may elect to take measures within the well boring above the coal seam to correct the well drilling deviation to assure the well boring will penetrate through the Pittsburgh #8 coal seam within the required one percent (1%) deviation area. If TUG HILL is unable to make the necessary corrections to limit the well deviation to one percent (1%), TUG HILL shall cease

RECEIVED
Office of Oil and Gas
JAN 03 2017
WV Department of
Environmental Protection
3 of 4
05/12/2017

drilling activities and, at its expense, grout the well boring completely from the bottom of the well boring to the surface using approved procedures to assure a uniform and complete sealing of the drilled well boring.

13. TUG HILL shall immediately provide all records and certified results of the deviation surveys to COMPANY.
14. COMPANY plans to mine its coal reserve utilizing full extraction techniques to fully mine and remove the entire coal seam in those areas where such mining is planned and COMPANY has acquired the legal property rights and regulatory permits to conduct such mining activities. Full extraction mining causes surface subsidence that may affect surface structures. The mining subsidence may also create lateral stresses within the geologic overburden above the coal seam.
 - a. TUG HILL accepts all responsibility to monitor, maintain, mitigate, and repair all of its facilities including wells, pipelines, compressor stations, all surface facilities, and appurtenant facilities from the effects of subsidence from the underground mining activities of COMPANY.
 - b. TUG HILL shall be solely responsible for all costs and expenses to monitor, maintain, mitigate and repair any and all of its facilities that are constructed and installed after the effective date of this Agreement from the effects of subsidence from the underground mining activities of COMPANY.
 - c. COMPANY and TUG HILL agree to employ the principals of common law property rights (the Party that does not have superior property rights is responsible) for all subsidence related costs and expenses relating to Tug Hill surface facilities that are in place and operational on the effective date of this Agreement. Tug Hill is not responsible for other subsidence related costs.
15. COMPANY and TUG HILL agree to fully cooperate and support each other's permitting and regulatory approval activity. Each Party agrees that it will not object to any permit submittal nor will it appeal any permit approval provided that the terms and conditions of this Agreement are followed.
16. This Agreement shall extend to and be binding upon the heirs, successors, assigns, legal representatives, affiliates and joint venture partners of the Parties hereto. This Agreement and the rights agreed and granted herein are assignable or transferable, in whole or in part by the Parties.

17. This Agreement represents the entire understanding of the Parties with respect to the matters referred to herein and supersedes all other understandings, written or oral, between the Parties with respect thereto.

18. No amendment, modification, or waiver of any provision of the Agreement shall be valid, unless in writing signed by both Parties.

In WITNESS WHEREOF, each of CONSOLIDATION COAL COMPANY, MURRAY AMERICAN ENERGY, INC. and TUG HILL OPERATING has executed this Agreement intending to be legally bound hereby.

WITNESS: [Signature]

CONSOLIDATION COAL COMPANY

By: [Signature]
Name: JASON D. WITT
Title: SECRETARY

WITNESS: [Signature]

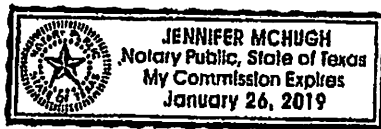
MURRAY AMERICAN ENERGY, INC.

By: [Signature]
Name: JASON D. WITT
Title: SECRETARY

WITNESS: [Signature]

TUG HILL OPERATING

By: [Signature]
Name: Sean K. Willis
Title: Vice President



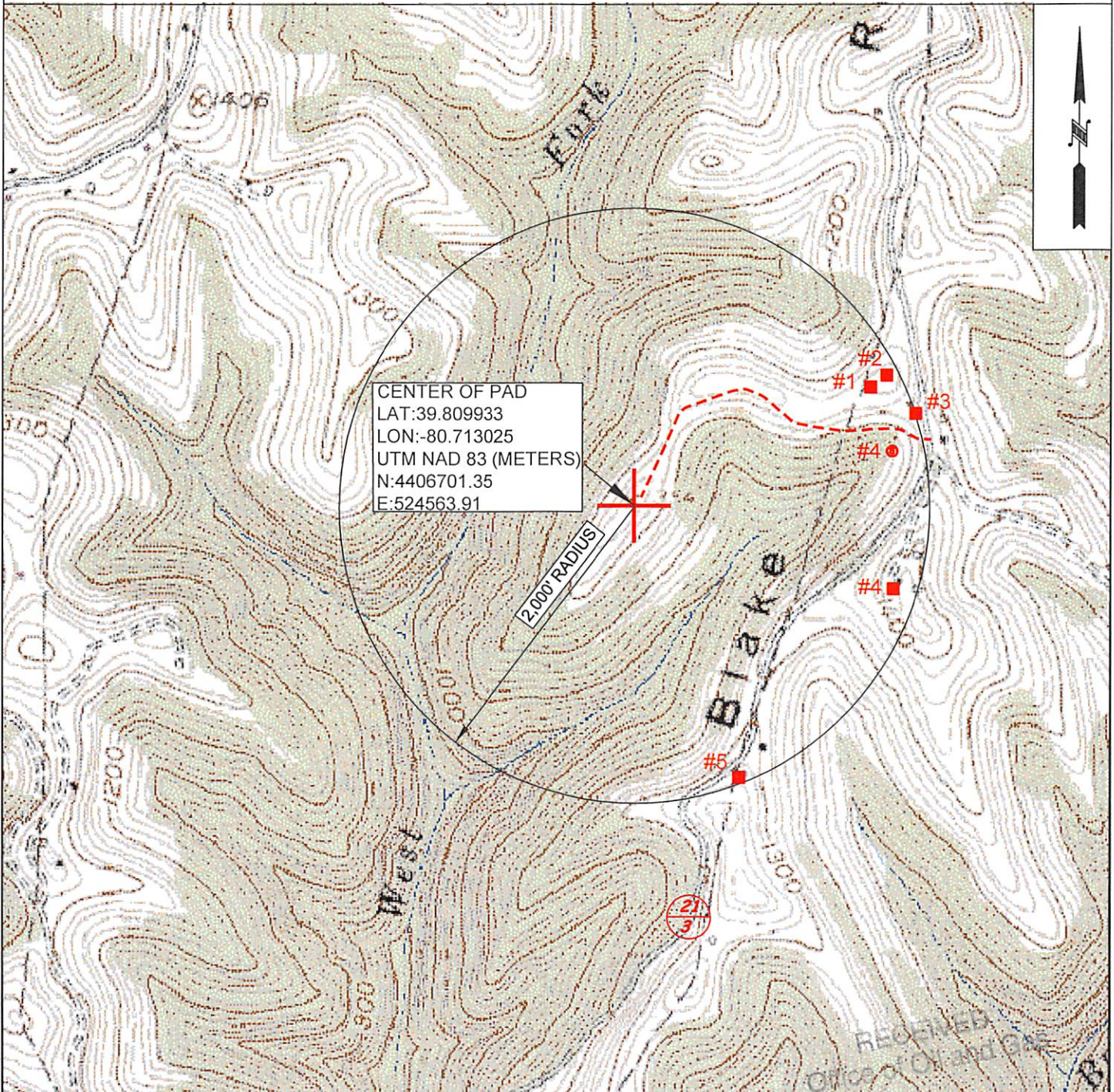
RECEIVED
Office of Oil and Gas
JAN 09 2017
WV Department of
Environmental Protection

WW-6A

PROPOSED HEAVEN HILL UNIT 2-7HU

SUPPLEMENT PG 1B

There appear to be (6) possible water sources within 2,000'.



| | | | | |
|---|------------------------------|--|----------------------------------|-----------------------------------|
|  | TUG HILL OPERATING | OPERATOR TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317 | TOPO SECTION GLEN EASTON 7.5' | UNIT NAME HEAVEN HILL UNIT 2 |
| | | SCALE: 1" = 1000' | DATE: DATE: 12/20/16 | RECEIVED Office of Oil and Gas |

05/12/2017

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF ENTRY FOR PLAT SURVEY

Notice Time Requirement: Notice shall be provided at least **SEVEN (7)** days but no more than **FORTY-FIVE (45)** days prior to entry

Date of Notice: April 14, 2016 **Date of Planned Entry:** April 25, 2016

Delivery method pursuant to West Virginia Code § 22-6A-10a

- PERSONAL SERVICE
- REGISTERED MAIL
- METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to West Virginia Code § 22-6A-10(a), Prior to filing a permit application, the operator shall provide notice of planned entry on to the surface tract to conduct any plat surveys required pursuant to this article. Such notice shall be provided at least seven days but no more than forty-five days prior to such entry to: (1) The surface owner of such tract; (2) to any owner or lessee of coal seams beneath such tract that has filed a declaration pursuant to section thirty-six, article six, chapter twenty-two of this code; and (3) any owner of minerals underlying such tract in the county tax records. The notice shall include a statement that copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, which statement shall include contact information, including the address for a web page on the Secretary's web site, to enable the surface owner to obtain copies from the secretary.

Notice is hereby provided to:

SURFACE OWNER(s)

Name: Charles R. Hagedorn

Address: 78 Hagedorn Drive
Glen Easton, WV 26039

Name: Michael J. Rine

Address: 1466 Blake Ridge Road
Glen Easton, WV 26039

Name: _____

Address: _____

COAL OWNER OR LESSEE

Name: Murray Energy Corporation

Address: 46226 National Road
St. Clairsville, OH 43950

MINERAL OWNER(s)

Name: JMK Irrevocable Trust

Address: 600 Texas Street, Suite 101
Fort Worth, TX 76102

*please attach additional forms if necessary

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-10(a), notice is hereby given that the undersigned well operator is planning entry to conduct a plat survey on the tract of land as follows:

| | |
|-------------------------------------|---|
| State: <u>West Virginia</u> | Approx. Latitude & Longitude: <u>Lat: 39.8098401, Long: -80.7132239</u> |
| County: <u>Marshall</u> | Public Road Access: <u>Blake Ridge Road (Co. Rt. 21/3)</u> |
| District: <u>Meade</u> | Watershed: <u>West Fork / HUC-10 Fish Creek</u> |
| Quadrangle: <u>Glen Easton 7.5'</u> | Generally used farm name: <u>Charles R. Hagedorn</u> |

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

Well Operator: Tug Hill Operating, LLC

Telephone: 724-338-2026

Email: jwhite@tug-hillop.com

Address: 380 Southpointe Blvd, Suite 200
Canonsburg, PA 15317

Facsimile: 724-338-2030

RECEIVED
Office of Oil and Gas
JAN 03 2017

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF ENTRY FOR PLAT SURVEY

Notice Time Requirement: Notice shall be provided at least **SEVEN (7)** days but no more than **FORTY-FIVE (45)** days prior to entry

Date of Notice: April 25, 2016 **Date of Planned Entry:** May 4, 2016

Delivery method pursuant to West Virginia Code § 22-6A-10a

- PERSONAL SERVICE
 REGISTERED MAIL
 METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to West Virginia Code § 22-6A-10(a), Prior to filing a permit application, the operator shall provide notice of planned entry on to the surface tract to conduct any plat surveys required pursuant to this article. Such notice shall be provided at least seven days but no more than forty-five days prior to such entry to: (1) The surface owner of such tract; (2) to any owner or lessee of coal seams beneath such tract that has filed a declaration pursuant to section thirty-six, article six, chapter twenty-two of this code; and (3) any owner of minerals underlying such tract in the county tax records. The notice shall include a statement that copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, which statement shall include contact information, including the address for a web page on the Secretary's web site, to enable the surface owner to obtain copies from the secretary.

Notice is hereby provided to:

SURFACE OWNER(s)

Name: Charles R. Hagedorn
Address: 78 Hagedorn Drive
Glen Easton, WV 26039

Name: Michael J. Rine
Address: 1466 Blake Ridge Road
Glen Easton, WV 26039

Name: _____
Address: _____

COAL OWNER OR LESSEE

Name: Murray Energy Corporation
Address: 46226 National Road
St. Clairsville, OH 43950

MINERAL OWNER(s)

Name: JMK Irrevocable Trust
Address: 600 Texas Street, Suite 101
Fort Worth, TX 76102

*please attach additional forms if necessary

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-10(a), notice is hereby given that the undersigned well operator is planning entry to conduct a plat survey on the tract of land as follows:

| | |
|-------------------------------------|---|
| State: <u>West Virginia</u> | Approx. Latitude & Longitude: <u>Lat: 39.8098401, Long: -80.7132239</u> |
| County: <u>Marshall</u> | Public Road Access: <u>Blake Ridge Road (Co. Rt. 21/3)</u> |
| District: <u>Meade</u> | Watershed: <u>West Fork / HUC-10 Fish Creek</u> |
| Quadrangle: <u>Glen Easton 7.5'</u> | Generally used farm name: <u>Charles R. Hagedorn</u> |

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

Well Operator: Tug Hill Operating, LLC

Telephone: 724-338-2026

Email: jwhite@tug-hillop.com

Address: 380 Southpointe Blvd, Suite 200
Canonsburg, PA 15317

Facsimile: 724-338-2030

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

RECEIVED
Office of Oil and Gas
JAN 08 2016
WV Department of
Environmental Protection
05/12/2017

WW-6A3 Notice of Entry for Plat Survey**Attachment 1 of 1****Mineral Owner(s):**

Name: Marcellus TX Minerals Partners, LTD
Address: 307 W 7th St.
Fort Worth, TX 76102

Name: Purpleburgh Ventures, LLC
Address: 306 W 7th St.
Fort Worth, TX 76102

Name: Charles R. Hagedorn
Address: 78 Hagedorn Drive
Glen Easton, WV 26039

Name: Venango 21st Century
Address: 301 Moon Clinton Road
Moon Township, PA 15108

Name: TriEnergy Holdings, LLC
Address: 412 Beaver Street, 2nd Floor
Sewickley, PA 15143

Name: Patriot Restoration
Address: 713 Sycamore Road Extension
Sewickley, PA 15143

Name: Ralph E. Wellman
Address: 2209 Bowman Ridge Rd.
Glen Easton, WV 26039

RECEIVED
Office of Oil and Gas
JAN 09 2017
WV Department of
Environmental Protection
05/12/2017

WW-6A3 Notice of Entry for Plat Survey**Attachment 1 of 1****Mineral Owner(s):**

Name: Marcellus TX Minerals Partners, LTD
Address: 5111 Broadway Street
San Antonio, TX 78209

Name: Purpleburgh Ventures, LLC
Address: 600 Texas Street, Suite 101
Fort Worth, TX 76102

Name: Charles R. Hagedorn
Address: 78 Hagedorn Drive
Glen Easton, WV 26039

Name: Venango 21st Century
Address: 301 Moon Clinton Road
Moon Township, PA 15108

Name: TriEnergy Holdings, LLC
Address: 412 Beaver Street, 2nd Floor
Sewickley, PA 15143

Name: Patriot Restoration
Address: 713 Sycamore Road Extension
Sewickley, PA 15143

Name: Ralph E. Wellman
Address: 1824 4th Street
Moundsville, WV 26041

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF PLANNED OPERATION

Notice Time Requirement: notice shall be provided no later than the **filing date of permit application.**

Date of Notice: 12/29/2016 **Date Permit Application Filed:** 12/30/2016

Delivery method pursuant to West Virginia Code § 22-6A-16(c)

CERTIFIED MAIL HAND
RETURN RECEIPT REQUESTED DELIVERY

Pursuant to W. Va. Code § 22-6A-16(c), no later than the date for filing the permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner whose land will be used for the drilling of a horizontal well notice of the planned operation. The notice required by this subsection shall include: (1) A copy of this code section; (2) The information required to be provided by subsection (b), section ten of this article to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. (d) The notices required by this section shall be given to the surface owner at the address listed in the records of the sheriff at the time of notice.

Notice is hereby provided to the SURFACE OWNER(s)
(at the address listed in the records of the sheriff at the time of notice):

Name: Charles R. Hagedorn, Jr., et ux
Address: 78 Hagedorn Drive
Glen Easton, WV 26039

Name: Michael J. Rine, et ux
Address: 1466 Blake Ridge Road
Glen Easton, WV 26039

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-16(c), notice is hereby given that the undersigned well operator has developed a planned operation on the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State: West Virginia UTM NAD 83 Easting: 524,572.67
County: Marshall Northing: 4,406,713.22
District: Meade Public Road Access: Blake Ridge Road (Co. Rt. 21/3)
Quadrangle: Glen Easton 7.5' Generally used farm name: Charles R. Hagedorn, Jr., et ux
Watershed: (HUC 10) Fish Creek

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(c), this notice shall include: (1) A copy of this code section; (2) The information required to be provided by **W. Va. Code § 22-6A-10(b)** to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Operator: Tug Hill Operating, LLC
Telephone: 724-338-2026
Email: jwhite@tug-hill.com

Address: 380 Southpointe Blvd, Southpointe Plaza II, Suite 200
Canonsburg, PA 15317
Facsimile: 724-338-2030

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

RECEIVED
Office of Oil and Gas
JAN 03 2017
WV Department of
Environmental Protection
05/12/2017



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

1900 Kanawha Boulevard East • Building Five • Room 110
 Charleston, West Virginia 25305-0430 • (304) 558-3505

Earl Ray Tomblin
 Governor

Paul A. Mattox, Jr., P. E.
 Secretary of Transportation/
 Commissioner of Highways

November 2, 2016

James A. Martin, Chief
 Office of Oil and Gas
 Department of Environmental Protection
 601 57th Street, SE
 Charleston, WV 25304

Subject: DOH Permit for the Heaven Hills Unit 2 Pad, Marshall County
Heaven Hills Unit 2-7HU Well site

Dear Mr. Martin,

This well site will be accessed from a DOH permits #06-2016-0284 & 0287 which have been issued to Tug Hill Operating, LLC for access to the State Road for a well site located off of Marshall County Route 21/3 SLS.

The operator has signed a STATEWIDE OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated January 3, 2012.

Very Truly Yours,

Gary K. Clayton, P.E.
 Regional Maintenance Engineer
 Central Office O&G Coordinator

Cc: Jonathan White
 Tug Hill Operating, LLC
 CH, OM, D-6
 File

RECEIVED
 Office of Oil and Gas
 JAN 03 2017
 WV Department of
 Environmental Protection 05/12/2017



PLANNED ADDITIVES TO BE USED IN FRACTURING OR STIMULATION

Well No. Heaven Hill Unit 2-7HU

| PRODUCT NAME: | CHEMICAL DESCRIPTION: | PRODUCT USE: | HAZARDOUS COMPONENT: |
|---------------|----------------------------------|------------------|--|
| GBW-20C | Hemicellulase Breaker | Breaker - Water | None |
| ALPHA 1427 | | Biocide | Glutaraldehyde – CAS#000111-30-8 Quaternary ammonium chloride CAS# 007173-51-5 Alky dimethyl benzyl ammonium Chloride (C12-16) – CAS#068424-85-1 Ethanol – CAS# 000064-17-5 Water – CAS# 007732-18-5 |
| FRAC SAND | Silica Sand (various Mesh sizes) | Proppant | Crystalline silica (quartz) CAS# 14808-60-7 |
| S-8C, Sand | Silica Sand (100 mesh) | Sand | Silica – CAS# 14808-60-7 |
| GW-3LDF | | Gellant - Water | Petroleum Distillate Blend – Proprietary, (Not Associated with Diesel Fuel) Guar gum – CAS# 009000-30-0 |
| FRW-18 | | Friction Reducer | Hydrotreated light distillate CAS# 064742-47-8 |
| Scaletrol | | Scale Inhibitor | Ethylene glycol – CAS# 000107-21-1 Diethylene glycol – CAS# 000111-46-6 |

RECEIVED
Office of Oil and Gas
JAN 03 2017
WV Department of
Environmental Protection
05/12/2017

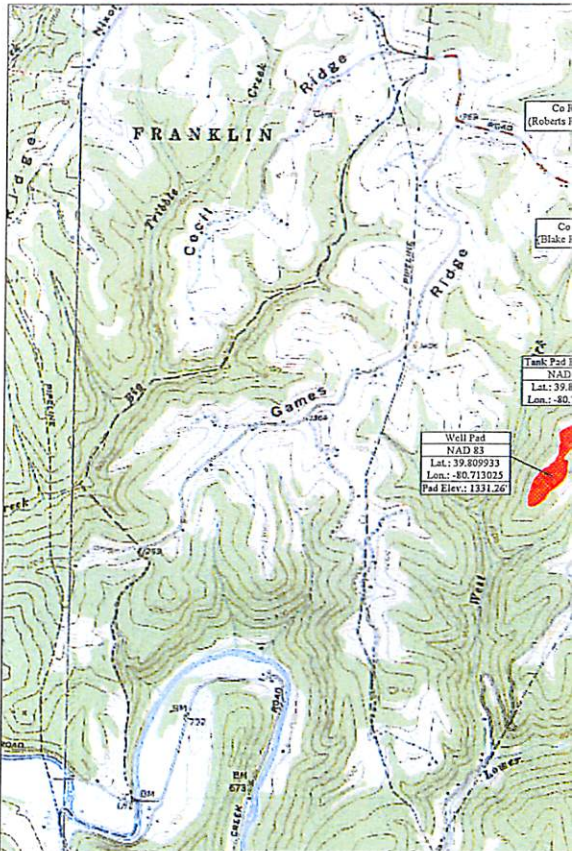
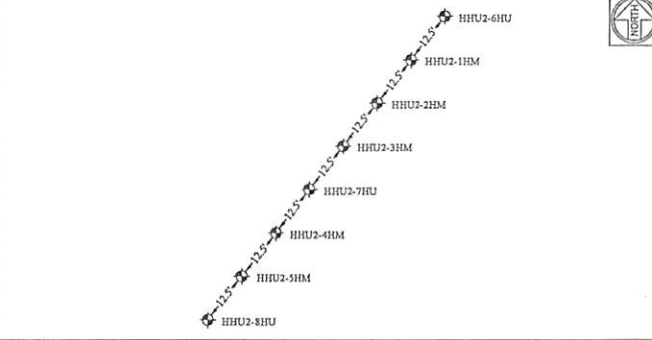
WEST VIRGINIA
COUNTY MAP



APPROVED
WVDEP OOG
WVS 11/2/2016

Exhibit A: Final D

| | | | | |
|---|--|---|---|---|
| <p>Well Pad Site Entrance WV-N NAD 83 N: 475901.89 WV-N NAD 83 E: 1629790.37 WV-N NAD 27 N: 475869.23 WV-N NAD 27 E: 1661227.19 Lat. NAD 83: 39.81344 Lon. NAD 83: -80.705763 Lat. NAD 27: 39.81267 Lon. NAD 27: -80.705955 UTM 17 NAD 83 N: 4406589.99 UTM 17 NAD 83 E: 525184.95</p> | <p>Center of CRP Pad WV-N NAD 83 N: 480282.56 WV-N NAD 83 E: 1628301.63 WV-N NAD 27 N: 480245.93 WV-N NAD 27 E: 1659738.49 Lat. NAD 83: 39.81233 Lon. NAD 83: -80.711093 Lat. NAD 27: 39.81246 Lon. NAD 27: -80.711272 UTM 17 NAD 83 N: 4406967.16 UTM 17 NAD 83 E: 524729.49 Pad Elev.: 1348.32'</p> | <p>Center of Well Pad WV-N NAD 83 N: 479419.37 WV-N NAD 83 E: 1627743.73 WV-N NAD 27 N: 479382.75 WV-N NAD 27 E: 1659180.61 Lat. NAD 83: 39.809933 Lon. NAD 83: -80.713025 Lat. NAD 27: 39.809855 Lon. NAD 27: -80.713217 UTM 17 NAD 83 N: 4405701.35 UTM 17 NAD 83 E: 524563.91 Pad Elev.: 1331.26'</p> | <p>Tank Pad Site Entrance WV-N NAD 83 N: 480909.64 WV-N NAD 83 E: 1629565.88 WV-N NAD 27 N: 480872.99 WV-N NAD 27 E: 1661002.89 Lat. NAD 83: 39.814091 Lon. NAD 83: -80.706610 Lat. NAD 27: 39.814014 Lon. NAD 27: -80.706802 UTM 17 NAD 83 N: 4407164.64 UTM 17 NAD 83 E: 525111.45</p> | <p>Center of Tank Pad WV-N NAD 83 N: 481104.59 WV-N NAD 83 E: 1630088.18 WV-N NAD 27 N: 481067.92 WV-N NAD 27 E: 1661524.98 Lat. NAD 83: 39.814645 Lon. NAD 83: -80.704761 Lat. NAD 27: 39.814568 Lon. NAD 27: -80.704933 UTM 17 NAD 83 N: 4407226.69 UTM 17 NAD 83 E: 525049.58 Pad Elev.: 1326.53'</p> |
|---|--|---|---|---|



| Well Table | | | |
|--|---|---|---|
| <p>HHU2-6HU WV-N NAD 83 N: 479497.28 WV-N NAD 83 E: 1627803.89 WV-N NAD 27 N: 479460.67 WV-N NAD 27 E: 1659240.76 Lat. NAD 83: 39.810149 Lon. NAD 83: -80.712814 Lat. NAD 27: 39.810072 Lon. NAD 27: -80.713006 UTM 17 NAD 83 (m) N: 4406725.39 UTM 17 NAD 83 (m) E: 524581.84</p> | <p>HHU2-1HM WV-N NAD 83 N: 479487.43 WV-N NAD 83 E: 1627796.20 WV-N NAD 27 N: 479450.81 WV-N NAD 27 E: 1659235.08 Lat. NAD 83: 39.810122 Lon. NAD 83: -80.711841 Lat. NAD 27: 39.810044 Lon. NAD 27: -80.713033 UTM 17 NAD 83 (m) N: 4406722.35 UTM 17 NAD 83 (m) E: 524579.55</p> | <p>HHU2-2HM WV-N NAD 83 N: 479477.57 WV-N NAD 83 E: 1627788.51 WV-N NAD 27 N: 479440.96 WV-N NAD 27 E: 1659235.59 Lat. NAD 83: 39.810094 Lon. NAD 83: -80.712868 Lat. NAD 27: 39.810017 Lon. NAD 27: -80.713060 UTM 17 NAD 83 (m) N: 4406719.31 UTM 17 NAD 83 (m) E: 524577.26</p> | <p>HHU2-3HM WV-N NAD 83 N: 479467.71 WV-N NAD 83 E: 1627780.82 WV-N NAD 27 N: 479431.10 WV-N NAD 27 E: 1659231.70 Lat. NAD 83: 39.810067 Lon. NAD 83: -80.712895 Lat. NAD 27: 39.809990 Lon. NAD 27: -80.713087 UTM 17 NAD 83 (m) N: 4406716.27 UTM 17 NAD 83 (m) E: 524574.97</p> |
| <p>HHU2-7HU WV-N NAD 83 N: 479457.86 WV-N NAD 83 E: 1627778.13 WV-N NAD 27 N: 479421.25 WV-N NAD 27 E: 1659210.01 Lat. NAD 83: -80.712040 Lon. NAD 83: -80.712916 Lat. NAD 27: 39.809962 Lon. NAD 27: -80.713114 UTM 17 NAD 83 (m) N: 4406713.22 UTM 17 NAD 83 (m) E: 524572.67</p> | <p>HHU2-4HM WV-N NAD 83 N: 479448.00 WV-N NAD 83 E: 1627765.45 WV-N NAD 27 N: 479411.39 WV-N NAD 27 E: 1659202.33 Lat. NAD 83: 39.810012 Lon. NAD 83: -80.712949 Lat. NAD 27: 39.809935 Lon. NAD 27: -80.713141 UTM 17 NAD 83 (m) N: 4406710.18 UTM 17 NAD 83 (m) E: 524570.38</p> | <p>HHU2-5HM WV-N NAD 83 N: 479438.15 WV-N NAD 83 E: 1627752.76 WV-N NAD 27 N: 479401.53 WV-N NAD 27 E: 1659194.64 Lat. NAD 83: 39.809985 Lon. NAD 83: -80.712916 Lat. NAD 27: 39.809968 Lon. NAD 27: -80.713167 UTM 17 NAD 83 (m) N: 4406707.14 UTM 17 NAD 83 (m) E: 524568.09</p> | <p>HHU2-8HU WV-N NAD 83 N: 479428.20 WV-N NAD 83 E: 1627750.07 WV-N NAD 27 N: 479391.68 WV-N NAD 27 E: 1659186.95 Lat. NAD 83: 39.809957 Lon. NAD 83: -80.713003 Lat. NAD 27: 39.809880 Lon. NAD 27: -80.713194 UTM 17 NAD 83 (m) N: 4406704.10 UTM 17 NAD 83 (m) E: 524565.80</p> |

Approach Routes:

From Moundsville, WV
Head South on State Rt 2. Turn Left onto State Rt 2 Alt (Round Bottom Hill Road) approximately 4 miles south of Moundsville, WV. Follow State Rt 2 Alt for 1.5 mi. Turn Right onto Co Rt 1/2 (Lindsay Lane). Follow Co Rt 1/2 for 1.8 mi. Turn Right onto Co Rt 21 (Roberts Ridge Rd). Follow Co Rt 21 for 1.4 mi. Co Rt 21 (Roberts Ridge Rd) becomes Co Rt 21 (Roberts Ridge St Joseph Rd). Follow Co Rt 21 for 4.4 mi. Turn Left onto Co Rt 21 (Roberts Ridge Rd). Follow Co Rt 21 for 1.1 mi. Turn Right onto Co Rt 3/4 (Blake Ridge Rd). Follow Co Rt 3/4 for 1.4 mi. The site entrance will be on the Right (West) side of the road.

| Site Locations (NAD 27) | | |
|-------------------------|---------------|----------------|
| Structure | Latitude (DD) | Longitude (DD) |
| Well Pad Site Entrance | 39.81267 | -80.70595 |
| Center of Well Pad | 39.809855 | -80.71321 |
| Tank Pad Site Entrance | 39.814014 | -80.70680 |
| Center of Tank Pad | 39.814568 | -80.70493 |

Project Contacts

| Tug Hill Operating | Survey and Engineer |
|---|--|
| <p>Jonathan White - Regulatory Analyst 774-485-2000 OIF. 304-689-7676 Cell</p> <p>Geoff Riedler - V.P. Production 817-632-5200 OIF.</p> <p>Tug Hill Operating, LLC 380 Southpointe Blvd Southpointe Plaza II, Suite 200 Cannonsburg, PA 15317</p> | <p>Kenneth Kelly 304-338-6983 OIF.</p> <p>John P. See 304-442-0220 OIF.</p> <p>Zachary Summerfield 304-338-6587 OIF.</p> <p>Geotechnical Engineer American Geotech, Inc. Kanti Patel 304-340-4277 OIF.</p> |

Environmental:
Wetland Delineations as provided by Allstar Ecology dated June 21, 2016

Topographic Information:
The topographic information shown herein is based on aerial photography by Blue Mountain Aerial Mapping, Burton, WV

MISS UTILITY OF
WEST VIRGINIA
1-800-245-4848
West Virginia State Law
Section XIV: Chapter 24-C requires
that you call two business days
before
you dig in the state of West Virginia.
IT'S THE LAW

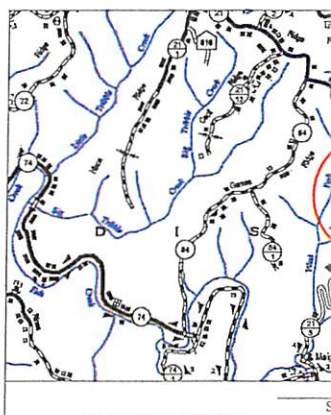


Tug Hill Operating will obtain an Encroachment Permit (Form MM-109) from the WV Department of Transportation, Division of Highways, prior to the commencement of any construction activities

The WV Mines Website was consulted. Previous (Current) mining activities are within the AOI.
(McElroy Mine, U-0033-83, McElroy Coal Co.)

WVDEP Website files show that there are no active and/or abandoned gas wells within the AOI

| Floodplain Conditions | |
|---|--------------|
| Do site construction activities take place in a floodplain: | NO |
| Permit needed from county floodplain coordinator: | NO |
| Flood Hazard Zone: | X |
| HEC-RAS Study completed: | N/A |
| Floodplain shown on drawings: | N/A |
| FIRM Map Number(s) for site: | 54051C 0175E |
| Average of construction in floodplain: | N/A |



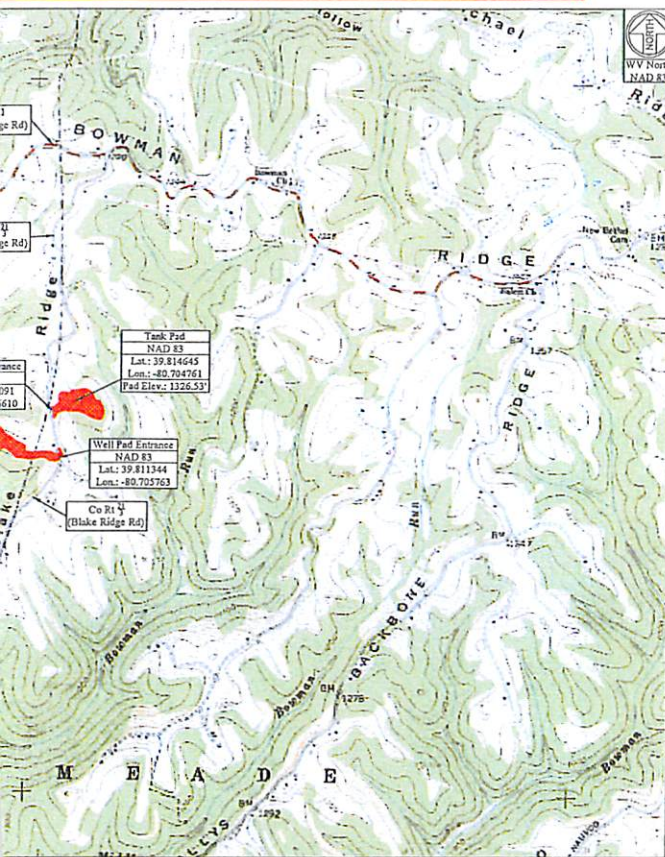
05/12/2017

Heaven Hill 2 Site

Construction Plan, &
 Sediment Control Plans
 Heaven Hill Operating
 Marshall County
 Meade District
 Elevation: 39.809933°
 Longitude: -80.713025°
 Middle Fish Creek Watershed

Pertinent Site Information
 Heaven Hill 2 Site
 Emergency Number: 304-845-1920
 Marshall County Emergency 911 (Moundsville, WV)
 Meade District, Marshall County, WV
 Watershed: Middle Fish Creek

Design: Issue for Permitting



WV State Plane Coordinate System
 North Zone, NAD 83
 Elevations Based on NAV88
 Established By Survey Grade GPS
 and OPUS Post-Processing

| Meade District - Marshall County | | | | | | | | |
|----------------------------------|-------------|----------|---------|----------|-------------|----------------|---------------|-----------------|
| Owner | TM - Parcel | Well Pad | CRP Pad | Tank Pad | Access Road | Topsoil/Excess | Add. Clearing | Total Disturbed |
| M. Rine | 7-1 | 0.00 | 0.00 | 0.00 | 0.21 | 0.00 | 0.47 | 0.68 |
| C. Hagedorn | 7-3 | 4.59 | 4.15 | 5.01 | 3.25 | 3.19 | 12.13 | 32.30 |
| Site Totals (Ac) | | 4.57 | 4.15 | 5.01 | 3.46 | 3.19 | 12.60 | 32.98 |

| Surface Owner | TM - Parcel | Road Length | Type |
|---------------|-------------|-------------|----------------------|
| M. Rine | 7-1 | 106.88' | Well Pad Access Road |
| C. Hagedorn | 7-3 | 2,265.19' | Well Pad Access Road |
| C. Hagedorn | 7-3 | 294.63' | Tank Pad Access Road |

| | |
|---------------------------|----------|
| Well Pad Construction | 4.57 Ac |
| CRP Pad Construction | 4.15 Ac |
| Tank Pad Construction | 5.01 Ac |
| Access Road Construction | 3.46 Ac |
| Topsoil / Excess Material | 3.19 Ac |
| Additional Clearing | 12.60 Ac |
| Total Disturbed Area | 32.98 Ac |

| | |
|----------------------------------|-----------|
| Total Wooded Acres Disturbed | 4.75 Ac |
| Total Linear Feet of Access Road | 2,666.70' |

| Description | Cut (CY) | Fill (CY) | Spoil (CY) | Borrow (CY) | Max. Slope | Length of Slope |
|-----------------------------------|--------------------|------------|------------|-------------------------|------------|-----------------|
| Well Pad | 36,542.99 | 21,043.07 | 15,499.91 | N/A | N/A | N/A |
| CRP Pad | 29,711.44 | 15,311.44 | 14,683.00 | N/A | N/A | N/A |
| Tank Pad | 36,755.05 | 26,758.30 | 9,996.75 | N/A | N/A | N/A |
| Well Pad Access Road | 2,962.46 | 17,045.22 | 14,082.76 | 10.00% | 579.50' | |
| Tank Pad Access Road | 1,198.90 | 830.39 | 368.51 | 8.00% | 48.29' | |
| Topsoil/Excess Material Stockpile | 0.00 | 30,527.37 | 30,527.37 | N/A | N/A | N/A |
| Totals | 107,170.83 | 111,915.79 | 39,865.17 | 44,610.13 | | |
| | Total Spoil (CY) = | | -4,744.96 | (Excess Spoil Capacity) | | |

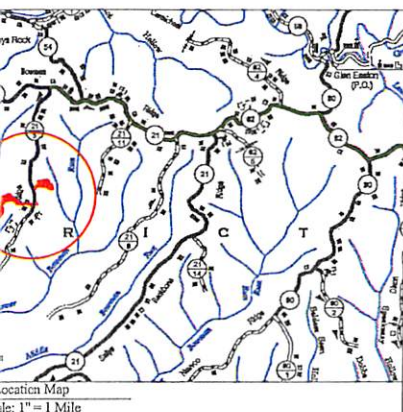
Quadrangle: Glen Easton
 District: Middle Fish Creek

| Structure | Latitude (DD) | Longitude (DD) |
|------------------------|---------------|----------------|
| Well Pad Site Entrance | 39.811344 | -80.705763 |
| Center of Well Pad | 39.809933 | -80.713025 |
| Tank Pad Site Entrance | 39.814091 | -80.705610 |
| Center of Tank Pad | 39.814645 | -80.704761 |

Well Location Restrictions

- All Pad construction complies with the following restrictions.
- *250' from an existing well or developed spring used for human or domestic animals.
- *625' from an occupied dwelling or barn greater than 2,500 SF used for poultry or dairy measured from the center of the pad.
- *100' from the edge of disturbance to wetlands, perennial streams, natural or artificial lake, pond or reservoir.
- *300' from the edge of disturbance to a naturally reproducing trout stream.
- *1,000' of a surface or ground water intake to a public water supply.

(Well Location Restrictions of WV Code 22-6A-12)



Design Certification

The drawings, construction notes and reference diagrams attached hereto have been prepared in accordance with the West Virginia Code of State Rules, Division of Environmental Protection, Office of Oil and Gas Section.

All Plans, Sheets, and/or Reference Diagrams included in this design constitute a complete set of plans. A complete set of plans is necessary to prepare the site in accordance with the design.

John P. See RPE 6051
 Kelly Surveying PLLC
 COA: CO4312-00

Date: 06/28/2016

Seal

As-Built Certification

This as-built certification certifies that the gas well drilling pad was constructed in reasonable close conformance with the design drawings. It is recommended that gas well drilling pads or included in the existing comprehensive maintenance and inspection program for gas well drilling pads or that a comprehensive maintenance and inspection program be developed to monitor the pads condition to insure the continued safe operation.

John P. See RPE 6051: _____ Date: _____

| Sheet | Description |
|-------|--|
| 1 | Cover Sheet |
| V1 | Schedule of Quantities |
| N1-N3 | Site Notes |
| 2 | Pre-Construction Site Conditions |
| 3 | Site Soil Map |
| 4 | Clearing Exhibit |
| 5 | Overall Plan View |
| 6-9 | E&S Plan View |
| 10 | Toe Key Exhibit |
| 11-14 | Plan View |
| 15-16 | Cross Sections - Well Pad |
| 17 | Cross Sections - Central Receiving Pad |
| 18-19 | Cross Sections - Tank Pad |
| 20-21 | Cross Sections - Well Pad Access Road |
| 22 | Cross Sections - Tank Pad Access Road |
| G1-G2 | Geotechnical Details |
| L1 | Landowner Disturbed Area Exhibit |
| S1-S2 | Site Reclamation |
| M1-M2 | Production Details |
| D1-D2 | Erosion and Sediment Control Details |
| R1 | Access Road Details |
| P1 | Pad Details |

Revision
 Date
 Design: WYDIEP Revisions

Date
 06-28-2016
 10-31-2016



THIS DOCUMENT
 PREPARED FOR
 TUG HILL
 OPERATING

Kelly Surveying
 P.O. Box 284
 Lansing, WV 26039
 (304) 533-0945

Cover Sheet
 Heaven Hill 2 Site
 Meade District
 Marshall County, WV

RECEIVED

JAN 0 9

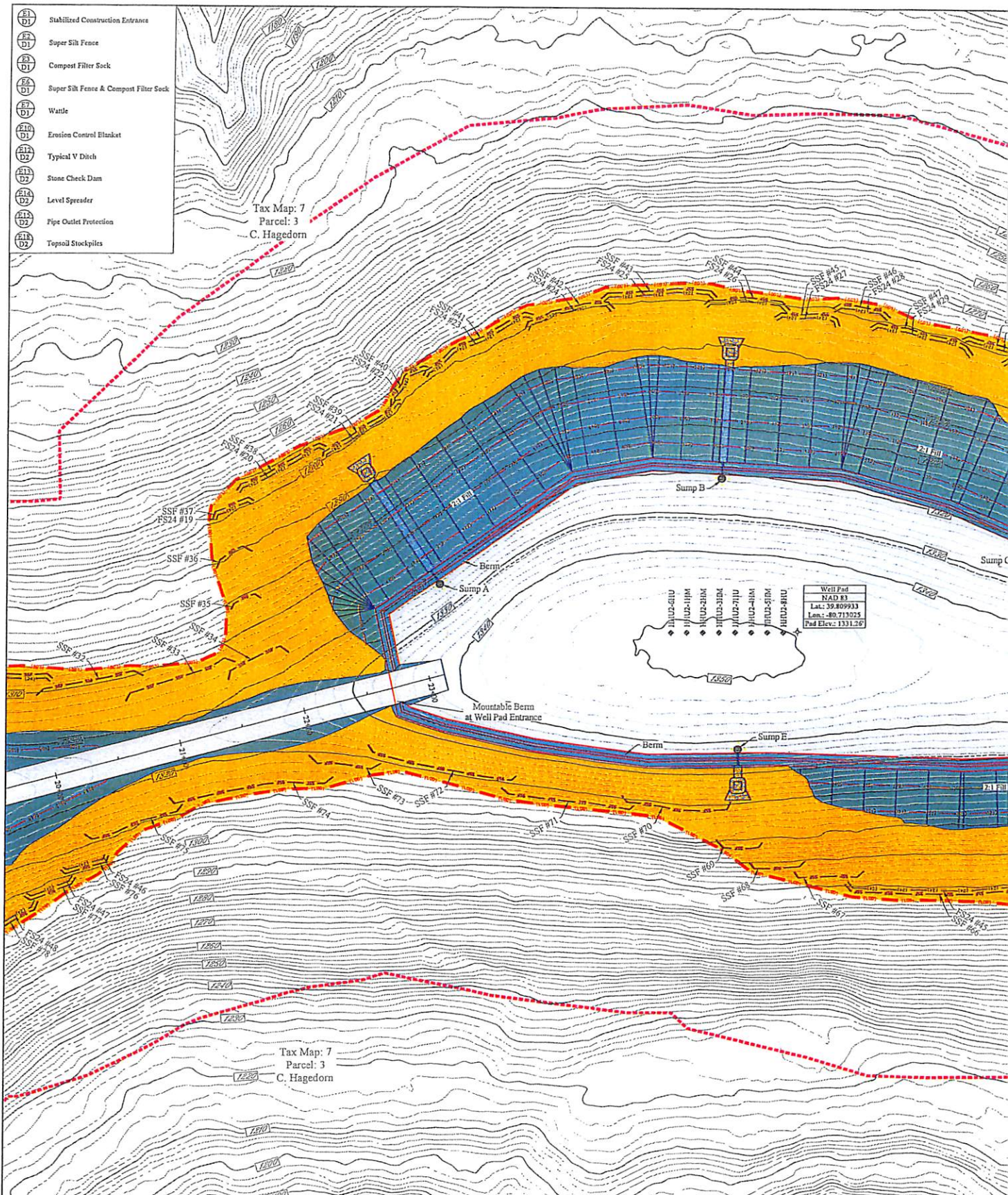
05/12/2017

Date: 06/28/2016
 Scale: As Shown
 Designed By: ZS
 Title No.
 Sheet 1 of 22

WV Department of Environmental Protection

- (E1 D1) Stabilized Construction Entrance
- (E2 D1) Super Silt Fence
- (E3 D1) Compost Filter Sock
- (E4 D1) Super Silt Fence & Compost Filter Sock
- (E7 D1) Wattle
- (E10 D1) Erosion Control Blanket
- (E12 D2) Typical V Ditch
- (E13 D2) Stone Check Dam
- (E14 D2) Level Spreader
- (E15 D2) Pipe Outlet Protection
- (E16 D2) Topsoil Stockpiles

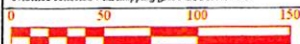
Tax Map: 7
Parcel: 3
C. Hagedorn



Tax Map: 7
Parcel: 3
C. Hagedorn

Well Pad
NAD 83
Lat.: 39.809933
Lon.: -80.713025
Pad Elev.: 1331.26

NOTE:
All surface boundary lines shown hereon are based on boundary evidence collected with mapping grade GPS receivers.



- Legend**
- Original Ground 2' Contour
 - Original Ground 10' Contour
 - Center of Structure
 - 12" Wattle
 - 24" Compost Filter Sock
 - Super Silt Fence
 - Limits of Disturbance
 - Area of Interest
 - Existing Gas Line
 - Existing Utility Pole/Line
 - Rock Lined Ditch
 - Erosion Control Blanket Lined Ditch
 - PEM Wetland
 - POW Wetland
 - PSS Wetland
 - Perennial Stream
 - Intermittent Stream
 - Ephemeral Stream
 - Seed and Mulch Area
 - Erosion Control Blanket Slope Area
 - Stone Check Dam

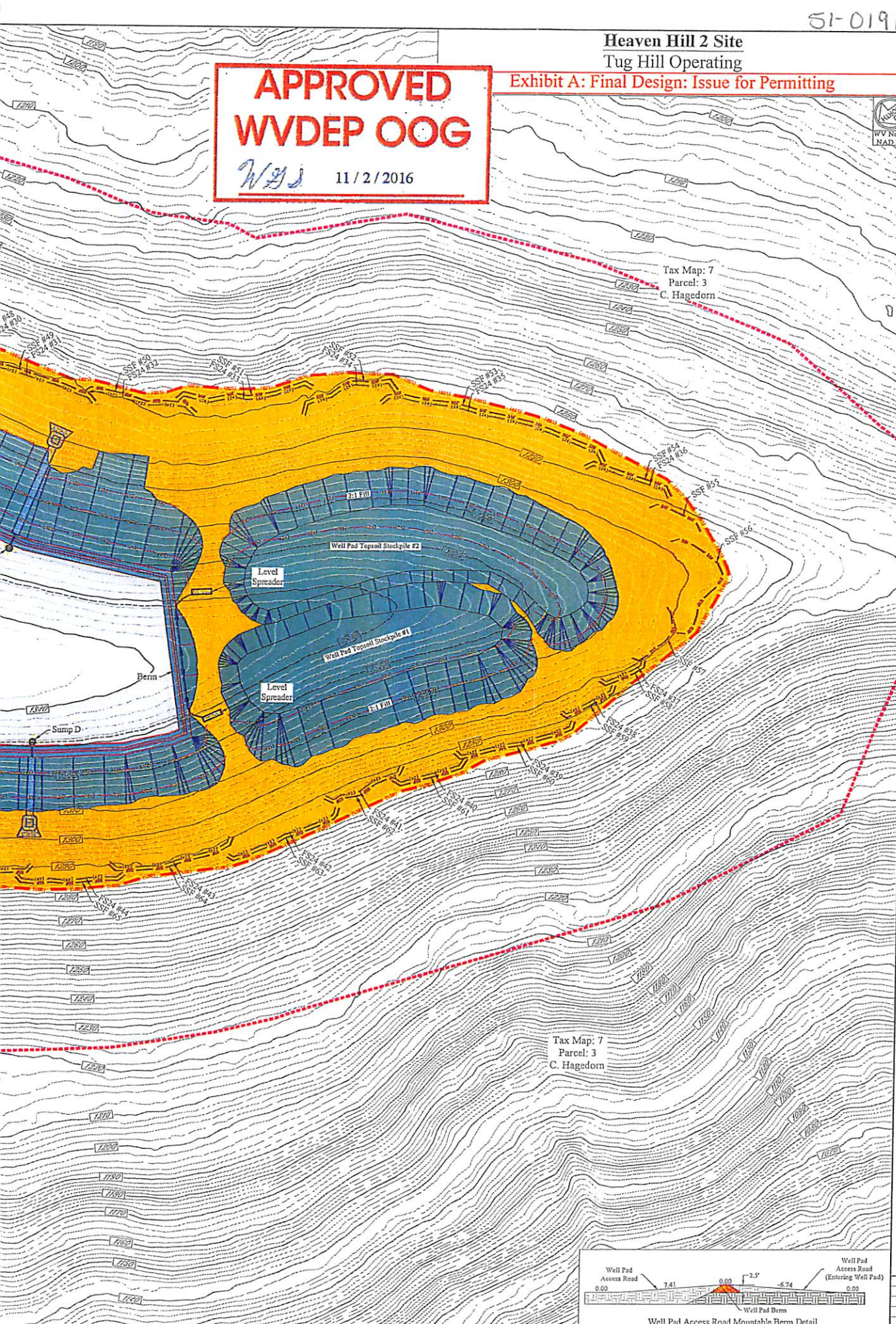
| Disturbed Area | |
|---|------------------|
| Well Pad Construction | 4.57 Ac |
| CRP Pad Construction | 4.15 Ac |
| Tank Pad Construction | 5.01 Ac |
| Access Road Construction | 3.46 Ac |
| Topsoil / Excess Material | 3.19 Ac |
| Additional Clearing | 12.69 Ac |
| Total Disturbed Area | 33.98 Ac |
| Total Wooded Acres Disturbed | 4.73 Ac |
| Total Linear Feet of Access Road | 2,606.70' |

| Access Road | | | |
|-------------|-------------|----------------------|---------------|
| TM - Parcel | Road Length | Type | Surface Owner |
| 7-1 | 106.88' | Well Pad Access Road | M. Rice |
| 7-3 | 2,205.19' | Well Pad Access Road | C. Hagedorn |
| 7-3 | 294.63' | Tank Pad Access Road | C. Hagedorn |

05/12/2017

APPROVED
WVDEP OOG

WJS 11/2/2016



Tax Map: 7
Parcel: 3
C. Hagedorn

Tax Map: 7
Parcel: 3
C. Hagedorn

| Revision | Date |
|-------------------------|------------|
| Design | 06-28-2016 |
| Design: WVDEP Revisions | 10-11-2016 |

TUG HILL
OPERATING



THIS DOCUMENT
PREPARED FOR
TUG HILL
OPERATING

Kelly Surveying
P.O. Box 254
Delmar, WV 26034
(304) 338-6925

Erosion and Sediment Control Plan
Heaven Hill 2 Site
Meade District
Marshall County, WV



| |
|------------------|
| Date: 06/28/2016 |
| Scale: As Shown |
| Designed By: ZS |
| File No. |
| Sheet 8 of 22 |