

#### 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

Harold D. Ward, Cabinet Secretary www.dep.wv.gov

#### Tuesday, October 18, 2022 PERMIT MODIFICATION APPROVAL Horizontal 6A / New Drill

TUG HILL OPERATING, LLC 380 SOUTHPOINTE BOULEVARD, PLAZA II SUITE 200 CANONSBURG, PA 15317

Re: Permit Modification Approval for ELMER N-15HU

47-103-03503-00-00

Extend Lateral, Horizontal Leg Length 500.02' to 16889.37', Total Measured Depth 13058' to 29152'. updated lease chain

#### TUG HILL OPERATING, LLC

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

If there are any questions, please feel free to contact me at (304) 926-0450.

Operator's Well Number: ELMER N-15HU

Farm Name: ELNORA TUTTLE

U.S. WELL NUMBER: 47-103-03503-00-00

Horizontal 6A New Drill

Date Modification Issued: 10/18/2022

Promoting a healthy environment.



#### west virginia department of environmental protection

Oil and Gas Conservation Commission 601 57th Street SE, Charleston, WV 25304 304-414-1239

Randall M. Albert, Chairman dep.wv.gov

October 12, 2022

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

RE: Application for Deep Well Permit - API #47-103-03503

COMPANY: Tug Hill Operating, LLC

FARM: <u>Elnora Tuttle</u> <u>Elmer N-15HU</u> Modification

COUNTY: Wetzel DISTRICT: Proctor QUAD: Wileyville

The deep well review of the application for the above company is <u>Approved to drill to Trenton for</u> Point Pleasant completion. Pooling Docket 308-312

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? Yes, but withdrawn.
- 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: \*\*yes
- 4. Provided a plat showing that the productive interval of the well meets the requirements of the Rules of the Commission W. Va. C.S.R. § 39-1-4.2.

Sincerely,

Susan Rose Administrator

\*\*Elmer N-18HU 47-103-03467; Elmer N-17HU 47-103-03505; Elmer N-16HU 47-103-03504; Elmer N-14HU 47-103-03502; Burch Ridge S-6HU 47-051-02193; Burch Ridge S-7HU 47-051-02194; McMasters S-16HU 47-051-02337; McMasters S-17HU 47-051-02338; McMasters S-18HU 47-051-02339; McMasters S-19HU 47-051-02340; Hillrock S-12HU 47-051-02272; Hillrock S-13HU 47-051-02273; Hillrock S-14HU 47-051-02262; Hillrock S-15HU 47-051-02263; Simms U-5H 47-051-0731

| API NO. 47- 103 | _ 03503               |
|-----------------|-----------------------|
| OPERATOR W      | VELL NO. Elmer N-15HU |
| Well Pad Na     | me: Elmer             |

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

| 1) Well Operator: Tug Hill Operator  | erating, LLC      | 494510851  | Wetzel            | Proctor        | Wileyville 7.5'            |
|--|-------------------|--|-------------------|----------------|----------------------------|
| 2% 201 -2 % 14 m 15 m  |                   | Operator ID  | County            | District       | Quadrangle                 |
| 2) Operator's Well Number: Elr   | ner N-15HU        | Well P   | ad Name: Eln      | ner            |                            |
| 3) Farm Name/Surface Owner:  | Elnora Tuttle     | Public Ro  | oad Access: P     | roctor Creel   | Road                       |
| 4) Elevation, current ground:  | 1,308.03' I       | Elevation, propose   | d post-constru    | ction: 1,276   | .50'                       |
| 5) Well Type (a) Gas X Other   | Oil _             | Un   | derground Sto     | rage           |                            |
| 7  | llow<br>izontal X | Deep   | X                 |                | ch#<br>058359              |
| 6) Existing Pad: Yes or No No  |                   |  | _                 |                | \$2500°                    |
| 7) Proposed Target Formation(s) Point Pleasant is the target formation                 |                   | The second secon |                   |                | ure of approx. 7,500 psi.  |
| 8) Proposed Total Vertical Dept  | h: 11,901'        |  |                   |                |                            |
| 9) Formation at Total Vertical D   | epth: Trenton     |  |                   |                |                            |
| 10) Proposed Total Measured D  | epth: 29,152'     |  |                   |                |                            |
| 11) Proposed Horizontal Leg Le   | ngth: 16,889.3    | 37'  |                   |                |                            |
| 12) Approximate Fresh Water S  | trata Depths:     | 70; 1,009'   |                   |                |                            |
| <ul><li>13) Method to Determine Fresh</li><li>14) Approximate Saltwater Dept</li></ul> |                   | Based on the depth   | of Pittsburgh Coa | al seam, per W | VGES mapping contou        |
| 15) Approximate Coal Seam De   | pths: Sewickle    | y Coal - 909' and  | l Pittsburgh C    | oal - 1,003'   | 1                          |
| 16) Approximate Depth to Possi   | ble Void (coal n  | nine, karst, other):   | None anticip      | pated          |                            |
| 17) Does Proposed well location directly overlying or adjacent to                      |                   |  | 1                 | No X           |                            |
| (a) If Yes, provide Mine Info:   | Name:             |  |                   |                |                            |
|  | Depth:            |  |                   |                |                            |
|  | Seam:             |  |                   |                | REGISTED<br>Office of Cons |
|  | Owner:            |  |                   |                | AUT 1 9 7072               |
|  |                   |  |                   |                |                            |

WV Dominion of Protection

| PI  | NO. | 47- | 103 | - | 03503 |
|-----|-----|-----|-----|---|-------|
| 171 | NO. | 4/- | 100 | - | 00000 |

OPERATOR WELL NO. Elmer N-15HU

Well Pad Name: Elmer

18)

## CASING AND TUBING PROGRAM

| ТҮРЕ             | Size<br>(in) | New<br>or<br>Used | Grade  | Weight per ft. (lb/ft) | FOOTAGE: For<br>Drilling (ft) | INTERVALS:<br>Left in Well<br>(ft) | CEMENT:<br>Fill-up<br>(Cu. Ft.)/CTS |
|------------------|--------------|-------------------|--------|------------------------|-------------------------------|------------------------------------|-------------------------------------|
| Conductor        | 30"          | NEW               | BW     | BW                     | 120'                          | 120'                               | 259ft^3(CTS)                        |
| Fresh Water/Coal | 20"          | NEW               | J55    | 106.5#                 | 1,125'                        | 1,125' 🗸                           | 1,802ft^3(CTS)                      |
| Intermediate 1   | 13 3/8"      | NEW               | J55    | 54.5#                  | 2,950'                        | 2,950' 🗸                           | 2,079ft^3(CTS)                      |
| Intermediate 2   | 9 5/8"       | NEW               | HPP110 | 47#                    | 10,611'                       | 10,611'                            | 3,470ft^3(CTS)                      |
| Production       | 5 1/2"       | NEW               | P110   | 23#                    | 29,152'                       | 29,152'                            | 6,859ft^3(CTS)                      |
| Tubing           | 2 7/8"       | NEW               | P110   | 6.5#                   |                               | 11,291'                            |                                     |
| Liners           |              |                   | -      |                        |                               |                                    |                                     |

Hermet L Sugal 7-28-22

| TYPE         | Size (in) | Wellbore<br>Diameter (in) | Wall<br>Thickness<br>(in) | Burst Pressure (psi) | Anticipated Max. Internal Pressure (psi) | Cement<br>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        | 1.33                     |
| Production   | 5 1/2"    | 8 1/2"                    | .415                      | 16,510               | 13,208                                   | SEE #24        | 1.17/1.19                |
| Tubing       | 2 7/8"    |                           |                           | 14,530               | 11,624                                   |                |                          |
| Liners       |           |                           |                           |                      |  |                |                          |

## **PACKERS**

| Kind:       | N/A |                             |
|-------------|-----|-----------------------------|
| Sizes:      | N/A |                             |
| Depths Set: | N/A | RECEIVED Office of Owand Ga |

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| WW-6B   |  |
|---------|--|
| (10/14) |  |

API NO. 47- 103 - 03503

OPERATOR WELL NO. Elmer N-15HU

Well Pad Name: Elmer

| 19) | Describe propose | d well work | , including the | drilling and | plugging bac | k 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(10,789'). Drill curve and lateral per proposed well plan, run and cement production casing. Perform DBL 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 42,300,000 lb. proppant and 760,000 bbl of water. Max rate = 80bpm; max psi = 9,000#.

- 21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 26.11 acres
- 22) Area to be disturbed for well pad only, less access road (acres): 7.63 acres

#### 23) Describe centralizer placement for each casing string:

Will run 3 centralizers on surface casing at equal distance. Intermediate strings 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:

Sfc - Premium NE-1 + 2% CaCl; Int1 - Premium NE-1 + 1.5% CaCL + Flake; Int2 - 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; Kick Plug - Class H Cement + 1% CD-32 + .7% Sodium Metasilicate + .1% R-3 + .75 gal/100sk FP-13L; Prod - 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

## 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

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\*Note: Attach additional sheets as needed.



30" Csg @ 120' MD / 120' TVD

> 20" Csg @ 1,125' MD /

1,125' TVD

13 3/8" Csg @ 2,950' MD / 2,950' TVD

9 5/8" Csg @ 10,611' MD / 10,504' TVD

KOP @ 10,791' € MD

Pilot Hole

PHTD @

11,901

WELL NAME: Elmer N-15HU STATE: COUNTY: Wetzel DISTRICT: Proctor DF Elev: 1,277 GL Elev: 1,277 29,152 TH Latitude: 39.69391799 TH Longitude: -80.73761049 BH Latitude: 39.733791 BH Longitude: -80.771272

| FORMATION TO        | rs.       |  |
|---------------------|-----------|--|
| Formation           | Depth TVD |  |
| Deepest Fresh Water | 1,009'    |  |
| Sewickley Coal      | 909'      |  |
| Pittsburgh Coal     | 1,003     |  |
| Blg Lime            | 2,175     |  |
| Berea               | 2,817*    |  |
| Tully               | 6,729'    |  |
| Marcellus           | 6,810'    |  |
| Onondaga            | 6,860'    |  |
| Salina              | 7,450     |  |
| Lockport            | 8,590'    |  |
| Utica               | 11,397    |  |
| Point Pleasant      | 11,632'   |  |
| Landing Depth       | 11,682'   |  |
| Trenton             | 11,751'   |  |
| Pilat Hale TD       | 11,901    |  |

| CASING SUMMARY |                |               |            |             |                |        |              |  |
|----------------|----------------|---------------|------------|-------------|----------------|--------|--------------|--|
| Туре           | Hole Size (in) | Csg Size (in) | Depth (MD) | Depth (TVD) | Weight (lb/ft) | Grade  | Top of Cemen |  |
| Conductor      | 36             | 30            | 120'       | 120'        | BW             | BW     | Surface      |  |
| Surface        | 26             | 20            | 1,125'     | 1,125'      | 106.5          | JSS    | Surface      |  |
| Intermediate 1 | 17 1/2         | 13 3/8        | 2,950'     | 2,950'      | 54.5           | JS5    | Surface      |  |
| Intermediate 2 | 12 1/4         | 9 5/8         | 10,611'    | 10,504      | 47             | HPP110 | Surface      |  |
| Production     | 8 1/2          | 5 1/2         | 29,152     | 11,388'     | 23             | HCP110 | Surface      |  |

|                | CEMENT SUM | MARY  |               | DRILLING DETAILS |  |  |
|----------------|------------|-------|---------------|------------------|--|--|
| Туре           | Sacks      | Class | Density (ppg) | Fluid Type       | Centralizer Notes  |  |
| Conductor      | 338        | A     | 15.6          | Air              | None   |  |
| Surface        | 1,943      | A     | 15.6          | Air              | 3 Centralizers at equal distance   |  |
| Intermediate 1 | 2,253      | A     | 15.6          | Air              | 1 Centralizer every other joint  |  |
| Intermediate 2 | 3,150      | A     | 14.5          | Air              | 1 Centralizer every other joint  |  |
| Production     | 7,076      | А     | 16.5          | Air / SOBM       | Levery other joint in lateral; 1 per joint in curve; 1 every other joi<br>to surface |  |

Lateral TD @

29,152' ft MD

11,388 ft TVD

Landing Point @ 12,266' MD / 11,682' TVD

PH TVD = 150' below Trenton Top

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VVV Department of Environmental Protection



## Tug Hill Operating, LLC Casing and Cement Program

#### Elmer N-15HU

## Casing

|                | String  | Grade  | Bit Size | Depth (Measured) | Cement Fill Up |
|----------------|---------|--------|----------|------------------|----------------|
| Conductor      | 30"     | BW     | 36"      | 120'             | CTS            |
| Surface        | 20"     | J55    | 26"      | 1,125'           | CTS            |
| Intermediate 1 | 13 3/8" | J55    | 17 1/2"  | 2,950'           | CTS            |
| Intermediate 2 | 9 5/8"  | HPP110 | 12 1/4"  | 10,611'          | CTS            |
| Production     | 5 1/2"  | HCP110 | 8 1/2"   | 29,152'          | CTS            |

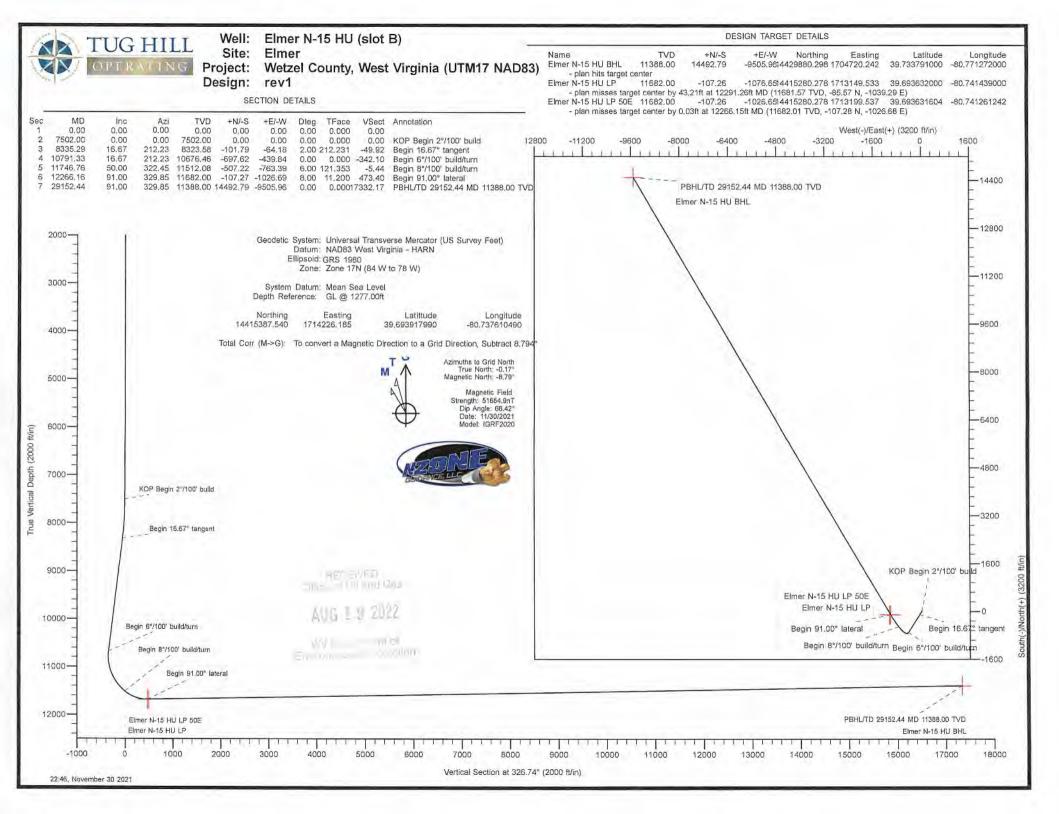
## Cement

| Conductor:      | Premium NE-1 + 2% bwoc CaC12 + 46.5% Fresh Water – Conductor Cement mixed at 15.6 ppg, Y=1.2  |
|-----------------|---|
| Surface:        | Premium NE-1 + 2% bwoc CaC12 + 46.5% Fresh Water – Surface Cement mixed at 15.6 ppg, Y=1.2  |
| Intermediate 1: | Premium NE-1 + 1% bwoc CaC12 + 46.5% Fresh Water – Intermediate Cement mixed at 15.6 ppg, Y=1.2   |
| Intermediate 2: | Premium NE-1 + 1% bwoc CaC12 + 46.5% Fresh Water – Intermediate Cement mixed at 14.5 ppg, Y=1.35  |
| Kick Off Plug:  | Class H Cement + 1% CD-32 + .7% Sodium Metasilicate + .1% R-3 + .75 gal/100sk FP-13L - KOP Plug   |
| Production:     | 50:50 Poz: Premium NE-1 + .1% bwoc ASA-301 + 60lb/sk ASCA-1 + .35% bwoc BA-10A + .25% bwoc MPA-170, 44 lb sack + .5% bwoc R-3 + .75 gals/100sk FP-13L — Production Cement mixed at 16.5 ppg, Y = 1.03 |

Office of Oil raid Gas

AUG 1 9 2022

WY Department of Environmental Protection





Database:

DB Dec2220 v16

Company:

Tug Hill Operating LLC

Project:

Wetzel County, West Virginia (UTM17 NAD83)

Site:

Well: Elmer N-15 HU (slot B)

Wellbore:

Original Hole

Design:

rev1

Local Co-ordinate Reference:

TVD Reference:

MD Reference: North Reference:

Survey Calculation Method:

Well Elmer N-15 HU (slot B)

GL@ 1277.00ft GL @ 1277.00ft

Grid

Minimum Curvature

Project

Wetzel County, West Virginia (UTM17 NAD83)

Map System:

Universal Transverse Mercator (US Survey Feet)

NAD83 West Virginia - HARN

Geo Datum: Map Zone:

Site

Well

Zone 17N (84 W to 78 W)

System Datum:

Mean Sea Level

Elmer

Site Position: From:

Lat/Long

Northing: Easting:

14,415,313.835 usft 1,714,207.744 usft Latitude:

ft

39.693715720 Longitude:

Position Uncertainty:

Elmer N-15 HU (slot B)

Slot Radius:

Wellhead Elevation:

11/30/2021

13-3/16 "

-80.737676810

0.00 ft

Well Position

Wellbore

+N/-S

+E/-W

0.00 ft Northing: 0.00 ft Easting:

14,415,387.540 usft 1,714,226,184 usft Latitude: Longitude:

Ground Level:

66,424

39.693917990 -80.737610490 1,277.00 ft

**Position Uncertainty** Grid Convergence:

Original Hole

Magnetics **Model Name** 

rev1

Sample Date

0.00 ft

Declination (°)

-8.626

Dip Angle (°)

Field Strength

(nT) 51,654.86104830

Design

Audit Notes:

Version:

Phase:

PLAN

Tie On Depth:

0.00

Vertical Section:

Depth From (TVD) (ft) 0.00

+N/-S (ft) 0.00

+E/-W (ft) 0.00

Direction (°) 326.74

Plan Survey Tool Program

Date

IGRF2020

Depth From Depth To (ft)

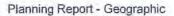
0.00

(ft) Survey (Wellbore) 29,152.44 rev1 (Original Hole) **Tool Name** 

Remarks

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| Measured Depth (ft) | Inclination (°) | Azimuth | Vertical<br>Depth<br>(ft) | +N/-S<br>(ft) | +E/-W<br>(ft) | Dogleg<br>Rate<br>(°/100ft) | Build<br>Rate<br>(°/100ft) | Turn<br>Rate<br>(°/100ft) | TFO (°) | Target           |
|---------------------|-----------------|---------|---------------------------|---------------|---------------|-----------------------------|----------------------------|---------------------------|---------|------------------|
| 0.00                | 0.00            | 0.00    | 0.00                      | 0.00          | 0.00          | 0.00                        | 0.00                       | 0.00                      | 0.000   |                  |
| 7,502.00            | 0.00            | 0.00    | 7,502.00                  | 0.00          | 0.00          | 0.00                        | 0.00                       | 0.00                      | 0.000   |                  |
| 8,335,29            | 16.67           | 212.23  | 8,323.58                  | -101.79       | -64.18        | 2.00                        | 2.00                       | 0.00                      | 212.231 |                  |
| 10,791.33           | 16.67           | 212.23  | 10,676.46                 | -697.62       | -439.84       | 0.00                        | 0.00                       | 0.00                      | 0.000   |                  |
| 11,746.76           | 50.00           | 322.45  | 11,512,08                 | -507.22       | -763,39       | 6.00                        | 3.49                       | 11.54                     | 121.353 |                  |
| 12,266.16           | 91.00           | 329.85  | 11,682.01                 | -107.27       | -1,026.69     | 8.00                        | 7.89                       | 1.43                      | 11.200  |                  |
| 29,152.44           | 91.00           | 329.85  | 11,388.00                 | 14,492.79     | -9,505.96     | 0.00                        | 0.00                       | 0.00                      | 0.000   | Elmer N-15 HU BH |





Database: Company: DB\_Dec2220\_v16
Tug Hill Operating LLC

Project: Wetzel County, West Virginia (UTM17 NAD83)

Site: Elmer

Well: Elmer N-15 HU (slot B)

Wellbore: Original Hole Design: rev1

Local Co-ordinate Reference:

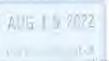
TVD Reference: MD Reference: North Reference:

Survey Calculation Method:

Well Elmer N-15 HU (slot B)

GL @ 1277.00ft GL @ 1277.00ft Grid

Minimum Curvature



| nned Survey               |                 |         |                           |               |               |                           |  |              |             |
|---------------------------|-----------------|---------|---------------------------|---------------|---------------|---------------------------|--|--------------|-------------|
| Measured<br>Depth<br>(ft) | Inclination (°) | Azimuth | Vertical<br>Depth<br>(ft) | +N/-S<br>(ft) | +E/-W<br>(ft) | Map<br>Northing<br>(usft) | Map<br>Easting<br>(usft)   | Latitude     | Longitude   |
| 0,00                      | 0.00            | 0,00    | 0.00                      | 0.00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39,693917990 | -80.7376104 |
| 100.00                    | 0.00            | 0,00    | 100.00                    | 0.00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39.693917990 | -80,7376104 |
| 200,00                    | 0.00            | 0.00    | 200.00                    | 0.00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39.693917990 | -80.737610  |
| 300.00                    | 0.00            | 0.00    | 300.00                    | 0.00          | 0.00          | 14,415,387.540            | 1,714,226,184  | 39.693917990 | -80.737610  |
| 400.00                    | 0.00            | 0.00    | 400,00                    | 0.00          | 0,00          | 14,415,387.540            | 1,714,226.184  | 39.693917990 | -80.737610  |
| 500.00                    | 0,00            | 0.00    | 500.00                    | 0.00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39.693917990 | -80.737610  |
| 600.00                    | 0.00            | 0.00    | 600.00                    | 0.00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39.693917990 | -80,737610  |
| 700.00                    | 0.00            | 0.00    | 700.00                    | 0.00          | 0.00          | 14,415,387.540            | 1,714,226,184  | 39.693917990 | -80,737610  |
| 800.00                    | 0.00            | 0.00    | 800.00                    | 0.00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39.693917990 | -80.737610  |
| 900.00                    | 0.00            | 0.00    | 900.00                    | 0.00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39.693917990 | -80.737610  |
| 1,000.00                  | 0.00            | 0.00    | 1,000,00                  | 0.00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39.693917990 | -80.737610  |
| 1,100.00                  | 0.00            | 0.00    | 1,100.00                  | 0,00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39.693917990 | -80.737610  |
| 1,200.00                  | 0.00            | 0.00    | 1,200.00                  | 0.00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39,693917990 | -80.737610  |
| 1,300.00                  | 0.00            | 0.00    | 1,300,00                  | 0.00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39.693917990 | -80,737610  |
| 1,400.00                  | 0.00            | 0.00    | 1,400.00                  | 0.00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39.693917990 | -80.737610  |
| 1,500.00                  | 0.00            | 0.00    | 1,500.00                  | 0.00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39.693917990 | -80.737610  |
| 1,600.00                  | 0.00            | 0.00    | 1,600.00                  | 0.00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39,693917990 | -80.737610  |
| 1,700.00                  | 0.00            | 0.00    | 1,700.00                  | 0.00          | 0.00          | 14,415,387,540            | 1,714,226.184  | 39,693917990 | -80.737610  |
| 1,800.00                  | 0.00            | 0.00    | 1,800.00                  | 0.00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39.693917990 | -80.737610  |
| 1,900.00                  | 0.00            | 0.00    | 1,900.00                  | 0.00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39.693917990 | -80.737610  |
| 2,000,00                  | 0.00            | 0,00    | 2,000.00                  | 0.00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39,693917990 | -80.737610  |
| 2,100.00                  | 0.00            | 0.00    | 2,100.00                  | 0.00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39,693917990 | -80.737610  |
| 2,200.00                  | 0.00            | 0.00    | 2,200.00                  | 0.00          | 0.00          | 14,415,387,540            | 1,714,226.184  | 39.693917990 | -80.737610  |
| 2,300.00                  | 0.00            | 0.00    | 2,300.00                  | 0.00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39,693917990 | -80.737610  |
| 2,400,00                  | 0.00            | 0.00    | 2,400.00                  | 0.00          | 0.00          | 14,415,387,540            | 1,714,226,184  | 39.693917990 | -80.737610  |
| 2,500.00                  | 0.00            | 0.00    | 2,500.00                  | 0.00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39,693917990 | -80.737610  |
| 2,600.00                  | 0.00            | 0.00    | 2,600.00                  | 0.00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39.693917990 | -80.737610  |
| 2,700.00                  | 0.00            | 0.00    | 2,700.00                  | 0.00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39.693917990 | -80.737610  |
| 2,800.00                  | 0.00            | 0.00    | 2,800.00                  | 0.00          | 0.00          | 14,415,387,540            | 1,714,226,184  | 39.693917990 | -80.737610  |
| 2,900.00                  | 0.00            | 0.00    | 2,900.00                  | 0.00          | 0.00          | 14,415,387,540            | 1,714,226.184  | 39,693917990 | -80,737610  |
| 3,000.00                  | 0.00            | 0.00    | 3,000.00                  | 0.00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39.693917990 | -80,737610  |
| 3,100.00                  | 0.00            | 0.00    | 3,100.00                  | 0.00          | 0.00          | 14,415,387.540            | 1,714,226,184  | 39.693917990 | -80.737610  |
| 3,200.00                  | 0.00            | 0.00    | 3,200.00                  | 0.00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39.693917990 | -80.737610  |
| 3,300.00                  | 0.00            | 0.00    | 3,300.00                  | 0.00          | 0.00          | 14,415,387,540            | 1,714,226,184  | 39.693917990 | -80.737610  |
| 3,400.00                  | 0.00            | 0.00    | 3,400.00                  | 0.00          | 0.00          | 14,415,387,540            | 1,714,226.184  | 39.693917990 | -80.737610  |
| 3,500.00                  | 0.00            | 0.00    | 3,500.00                  | 0.00          | 0.00          |                           | 1,714,226.184  | 39,693917990 | -80.737610  |
| 3,600.00                  | 0.00            | 0.00    | 3,600.00                  | 0.00          | 0.00          | 14,415,387.540            |  | 39,693917990 | -80.737610  |
| 3,700.00                  | 0.00            | 0.00    | 3,700.00                  | 0.00          |               | 14,415,387.540            | 1,714,226.184<br>1,714,226.184   |              |             |
| 3,800.00                  | 0.00            | 0.00    |                           | 0.00          | 0.00          | 14,415,387,540            | The state of the s | 39,693917990 | -80.737610  |
|                           |                 |         | 3,800.00                  |               | 0.00          | 14,415,387.540            | 1,714,226.184  | 39.693917990 | -80.737610  |
| 3,900.00<br>4,000.00      | 0.00            | 0.00    | 3,900.00<br>4,000.00      | 0.00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39.693917990 | -80.737610  |
| 4,100.00                  | 0.00            |         | 4,100.00                  | 0,00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39,693917990 | -80.737610  |
| 4,200.00                  | 0.00            | 0.00    | 4,700.00                  | 0,00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39,693917990 | -80.737610  |
| 4,300.00                  | 0.00            | 0.00    | 4,300.00                  | 0.00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39.693917990 | -80.737610  |
| 4,400.00                  | 0.00            | 0.00    |                           |               | 0.00          | 14,415,387.540            | 1,714,226,184  | 39.693917990 | -80.737610  |
| 4,500.00                  | 0.00            | 0.00    | 4,400.00                  | 0.00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39.693917990 | -80.737610  |
|                           |                 |         | 4,500.00                  | 0.00          | 0.00          | 14,415,387,540            | 1,714,226.184  | 39.693917990 | -80.737610  |
| 4,600.00                  | 0,00            | 0.00    | 4,600.00                  | 0.00          | 0.00          | 14,415,387.540            | 1,714,226,184  | 39.693917990 | -80.737610  |
| 4,700.00                  | 0.00            | 0.00    | 4,700.00                  | 0.00          | 0.00          | 14,415,387,540            | 1,714,226.184  | 39.693917990 | -80.737610  |
| 4,800.00                  | 0.00            | 0.00    | 4,800.00                  | 0.00          | 0,00          | 14,415,387.540            | 1,714,226,184  | 39.693917990 | -80.737610  |
| 4,900.00                  | 0.00            | 0.00    | 4,900.00                  | 0.00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39,693917990 | -80.737610  |
| 5,000.00                  | 0.00            | 0.00    | 5,000.00                  | 0.00          | 0.00          | 14,415,387.540            | 1,714,226.184  | 39.693917990 | -80.737610  |
| 5,100.00                  | 0.00            | 0.00    | 5,100.00                  | 0.00          | 0.00          | 14,415,387,540            | 1,714,226.184  | 39.693917990 | -80,737610  |
| 5,200.00                  | 0.00            | 0.00    | 5,200.00                  | 0.00          | 0.00          | 14,415,387.540            | 1,714,226,184  | 39.693917990 | -80,737610  |
| 5,300.00                  | 0.00            | 0.00    | 5,300.00                  | 0.00          | 0.00          | 14,415,387,540            | 1,714,226.184  | 39.693917990 | -80,737610  |
| 5,400.00                  | 0.00            | 0.00    | 5,400.00                  | 0.00          | 0.00          | 14,415,387,540            | 1,714,226.184  | 39.693917990 | -80,737610  |



Database:

DB\_Dec2220\_v16

Company:

Tug Hill Operating LLC Wetzel County, West Virginia (UTM17 NAD83)

Project: Site:

Well:

Elmer N-15 HU (slot B)

Wellbore:

Design:

Original Hole

rev1

Local Co-ordinate Reference:

TVD Reference: MD Reference:

North Reference:

Survey Calculation Method:

Well Elmer N-15 HU (slot B) GL @ 1277,00ft

GL @ 1277,00ft

Grid

Minimum Curvature

AUG 1 0 70EZ

| Measured<br>Depth | Inclination     | Azimuth | Vertical<br>Depth | +N/-S   | +E/-W   | Map<br>Northing | Map<br>Easting |              |              |
|-------------------|-----------------|---------|-------------------|---------|---------|-----------------|----------------|--------------|--------------|
| (ft)              | (°)             | (°)     | (ft)              | (ft)    | (ft)    | (usft)          | (usft)         | Latitude     | Longitude    |
| 5,500.00          | 0,00            | 0.00    | 5,500.00          | 0.00    | 0.00    | 14,415,387.540  | 1,714,226,184  | 39.693917990 | -80.737610   |
| 5,600.00          | 0.00            | 0.00    | 5,600.00          | 0.00    | 0,00    | 14,415,387.540  | 1,714,226,184  | 39.693917990 | -80.737610   |
| 5,700.00          | 0.00            | 0.00    | 5,700.00          | 0.00    | 0.00    | 14,415,387,540  | 1,714,226.184  | 39,693917990 | -80.737610   |
| 5,800.00          | 0.00            | 0.00    | 5,800.00          | 0.00    | 0.00    | 14,415,387.540  | 1,714,226.184  | 39.693917990 | -80,737610   |
| 5,900.00          | 0.00            | 0.00    | 5,900.00          | 0.00    | 0.00    | 14,415,387.540  | 1,714,226,184  | 39.693917990 | -80.737610   |
| 6,000.00          | 0.00            | 0.00    | 6,000.00          | 0.00    | 0.00    | 14,415,387.540  | 1,714,226.184  | 39.693917990 | -80,737610   |
| 6,100.00          | 0.00            | 0.00    | 6,100.00          | 0.00    | 0.00    | 14,415,387.540  | 1,714,226.184  | 39,693917990 | -80.737610   |
| 6,200.00          | 0.00            | 0.00    | 6,200,00          | 0.00    | 0.00    | 14,415,387.540  | 1,714,226,184  | 39.693917990 | -80.73761    |
| 6,300.00          | 0.00            | 0.00    | 6,300.00          | 0.00    | 0.00    | 14,415,387.540  | 1,714,226,184  | 39.693917990 | -80.73761    |
| 6,400.00          | 0.00            | 0.00    | 6,400.00          | 0.00    | 0.00    | 14,415,387.540  | 1,714,226.184  | 39,693917990 | -80.737610   |
| 6,500.00          | 0.00            | 0.00    | 6,500.00          | 0.00    | 0.00    | 14,415,387,540  | 1,714,226.184  | 39.693917990 | -80,73761    |
| 6,600.00          | 0.00            | 0.00    | 6,600.00          | 0.00    | 0.00    | 14,415,387.540  | 1,714,226.184  | 39,693917990 | -80.737610   |
| 6,700.00          | 0.00            | 0.00    | 6,700,00          | 0.00    | 0.00    | 14,415,387.540  | 1,714,226,184  | 39,693917990 | -80.737610   |
| 6,800.00          | 0.00            | 0.00    | 6,800.00          | 0.00    | 0.00    | 14,415,387.540  | 1,714,226.184  | 39.693917990 | -80,73761    |
| 6,900.00          | 0.00            | 0.00    | 6,900.00          | 0.00    | 0.00    | 14,415,387.540  | 1,714,226.184  | 39.693917990 | -80.73761    |
| 7,000.00          | 0.00            | 0.00    | 7,000.00          | 0.00    | 0.00    | 14,415,387.540  | 1,714,226.184  | 39.693917990 | -80.73761    |
| 7,100.00          | 0,00            | 0,00    | 7,100.00          | 0,00    | 0.00    | 14,415,387,540  | 1,714,226.184  | 39,693917990 | -80.73761    |
| 7,200.00          | 0.00            | 0.00    | 7,200.00          | 0.00    | 0.00    | 14,415,387.540  | 1,714,226,184  | 39.693917990 | -80,737610   |
| 7,300.00          | 0.00            | 0.00    | 7,300.00          | 0.00    | 0.00    | 14,415,387.540  | 1,714,226.184  | 39.693917990 | -80.73761    |
| 7,400.00          | 0.00            | 0.00    | 7,400.00          | 0.00    | 0.00    | 14,415,387.540  | 1,714,226.184  | 39.693917990 | -80.737610   |
| 7,502,00          | 0.00            | 0.00    | 7,502.00          | 0.00    | 0.00    | 14,415,387,540  | 1,714,226.184  | 39,693917990 | -80.737610   |
|                   | in 2°/100' buil |         | 1,000.00          | 5.55    | 0.55    | 71,710,007,016  | 111.111/22.201 |              | 30934,217811 |
| 7,600.00          | 1,96            | 212.23  | 7,599,98          | -1.42   | -0.89   | 14,415,386.122  | 1,714,225.290  | 39.693914103 | -80.737613   |
| 7,700.00          | 3.96            | 212.23  | 7,699.84          | -5.79   | -3.65   | 14,415,381.754  | 1,714,222,536  | 39.693902130 | -80.73762    |
| 7,800.00          | 5.96            | 212.23  | 7,799.46          | -13.10  | -8.26   | 14,415,374,441  | 1,714,217.926  | 39.693882082 | -80.73763    |
| 7,900.00          | 7.96            | 212.23  | 7,898.72          | -23.35  | -14.72  | 14,415,364.191  | 1,714,211.463  | 39.693853985 | -80,73766    |
| 8,000.00          | 9.96            | 212.23  | 7,997.50          | -36.52  | -23.03  | 14,415,351.017  | 1,714,203.157  | 39.693817872 | -80.737692   |
| 8,100.00          | 11.96           | 212.23  | 8,095.67          | -52.60  | -33.17  | 14,415,334.936  | 1,714,193.018  | 39.693773788 | -80.737728   |
| 8,200.00          | 13.96           | 212.23  | 8,193.11          | -71.57  | -45.13  | 14,415,315.965  | 1,714,181.057  | 39.693721786 | -80.73777    |
| 8,300.00          | 15.96           | 212.23  | 8,289.72          | -93.41  | -58.89  | 14,415,294.130  | 1,714,167,290  | 39.693661929 | -80.73782    |
| 8,335.29          | 16.67           | 212.23  | 8,323.58          | -101.79 | -64.18  | 14,415,285.746  | 1,714,162.005  | 39.693638947 | -80.737839   |
|                   |                 | 212.23  | 0,323,30          | -101.79 | -04, 10 | 14,415,265.746  | 1,714,102,005  | 39.093030947 | -60.75766    |
|                   | .67° tangent    | 240.00  | 0.005.50          | 447.40  | 74.00   | 31.445.070.047  | 1711450400     | 22 222505044 | 00.707070    |
| 8,400.00          | 16.67           | 212.23  | 8,385,58          | -117,49 | -74.08  | 14,415,270.047  | 1,714,152,106  | 39.693595911 | -80,73787    |
| 8,500,00          | 16,67           | 212,23  | 8,481.38          | -141.75 | -89.37  | 14,415,245.787  | 1,714,136.811  | 39,693529410 | -80.737929   |
| 8,600.00          | 16,67           | 212.23  | 8,577.18          | -166.01 | -104.67 | 14,415,221.528  | 1,714,121.516  | 39.693462909 | -80,73798-   |
| 8,700.00          | 16.67           | 212.23  | 8,672.98          | -190.27 | -119.96 | 14,415,197.269  | 1,714,106.221  | 39.693396407 | -80.738038   |
| 8,800.00          | 16.67           | 212.23  | 8,768.78          | -214.53 | -135.26 | 14,415,173.009  | 1,714,090.925  | 39.693329906 | -80.738093   |
| 8,900.00          | 16.67           | 212.23  | 8,864.58          | -238.79 | -150,55 | 14,415,148.750  | 1,714,075.630  | 39.693263405 | -80.73814    |
| 9,000.00          | 16.67           | 212.23  | 8,960,38          | -263.05 | -165.85 | 14,415,124.490  | 1,714,060.335  | 39.693196903 | -80.73820    |
| 9,100.00          | 16.67           | 212.23  | 9,056.18          | -287.31 | -181.15 | 14,415,100.231  | 1,714,045.039  | 39,693130402 | -80.73825    |
| 9,200.00          | 16.67           | 212.23  | 9,151,98          | -311,57 | -196.44 | 14,415,075,971  | 1,714,029.744  | 39.693063901 | -80,738312   |
| 9,300,00          | 16.67           | 212,23  | 9,247,78          | -335.83 | -211.74 | 14,415,051.712  | 1,714,014.449  | 39,692997399 | -80.738366   |
| 9,400.00          | 16.67           | 212.23  | 9,343.58          | -360.09 | -227.03 | 14,415,027.452  | 1,713,999.154  | 39.692930898 | -80.73842    |
| 9,500.00          | 16.67           | 212.23  | 9,439.37          | -384.35 | -242,33 | 14,415,003,193  | 1,713,983.858  | 39.692864396 | -80.738475   |
| 9,600.00          | 16.67           | 212.23  | 9,535,17          | -408.61 | -257.62 | 14,414,978.934  | 1,713,968,563  | 39,692797895 | -80,738530   |
| 9,700.00          | 16.67           | 212.23  | 9,630.97          | -432,87 | -272,92 | 14,414,954,674  | 1,713,953,268  | 39,692731393 | -80,738585   |
| 9,800.00          | 16.67           | 212.23  | 9,726.77          | -457.13 | -288.21 | 14,414,930.415  | 1,713,937.973  | 39.692664892 | -80.738639   |
| 9,900.00          | 16.67           | 212.23  | 9,822.57          | -481.39 | -303.51 | 14,414,906.155  | 1,713,922,677  | 39.692598390 | -80.738694   |
| 10,000.00         | 16.67           | 212,23  | 9,918.37          | -505.65 | -318,80 | 14,414,881.896  | 1,713,907.382  | 39.692531888 | -80.738749   |
| 10,100.00         | 16.67           | 212.23  | 10,014.17         | -529,90 | -334.10 | 14,414,857.636  | 1.713,892.087  | 39.692465387 | -80.738803   |
| 10,200.00         | 16.67           | 212.23  | 10,109.97         | -554.16 | -349.39 | 14,414,833.377  | 1,713,876.792  | 39.692398885 | -80.738858   |
| 10,300.00         | 16,67           | 212.23  | 10,205.77         | -578.42 | -364,69 | 14,414,809,117  | 1,713,861.496  | 39.692332383 | -80,738912   |
| 10,400.00         | 16,67           | 212,23  | 10,301.57         | -602.68 | -379.98 | 14,414,784.858  | 1,713,846.201  | 39.692265882 | -80.738967   |
| 10,500.00         | 16,67           | 212.23  | 10,397.37         | -626.94 | -395.28 | 14,414,760.599  | 1,713,830.906  | 39,692199380 | -80.73902    |





Database: Company: DB\_Dec2220\_v16 Tug Hill Operating LLC

Project:

Wetzel County, West Virginia (UTM17 NAD83)

Site:

Well:

Elmer N-15 HU (slot B)

Wellbore:

Original Hole

Design: rev1

Local Co-ordinate Reference:

TVD Reference: MD Reference: North Reference:

Survey Calculation Method:

Well Elmer N-15 HU (slot B)
GL @ 1277.00ft

GL @ 1277.00ft

Grid

Minimum Curvature

AUG-T-9 TOTA

| Measured      |                 |                  | Vertical               |                      |                        | Map                              | Мар                            |                              |                          |
|---------------|-----------------|------------------|------------------------|----------------------|------------------------|----------------------------------|--------------------------------|------------------------------|--------------------------|
| Depth<br>(ft) | Inclination (°) | Azimuth<br>(°)   | Depth<br>(ft)          | +N/-S<br>(ft)        | +E/-W<br>(ft)          | Northing<br>(usft)               | Easting<br>(usft)              | Latitude                     | Longitude                |
| 10,600.00     | 16.67           | 212,23           | 10,493.17              | -651.20              | -410.57                | 14,414,736,339                   | 1,713,815.611                  | 39,692132878                 | -80.739076               |
| 10,700,00     | 16.67           | 212.23           | 10,588.97              | -675.46              | -425.87                | 14,414,712.080                   | 1,713,800.315                  | 39,692066376                 | -80.73913                |
| 10,791.33     | 16.67           | 212.23           | 10,676.46              | -697.62              | -439.84                | 14,414,689.924                   | 1,713,786.346                  | 39.692005641                 | -80,73918                |
| Begin 6°      | /100' build/tur | n                |                        |                      |                        |                                  |                                |                              |                          |
| 10,800.00     | 16.40           | 213.80           | 10,684.77              | -699,69              | -441.18                | 14,414,687.855                   | 1,713,785.002                  | 39,691999969                 | -80.739186               |
| 10,850.00     | 15.13           | 223.82           | 10,732.90              | -710.28              | -449.63                | 14,414,677.280                   | 1,713,776.555                  | 39.691970995                 | -80,73921                |
| 10,900.00     | 14.36           | 235.24           | 10,781.26              | -718.51              | -459.24                | 14,414,669.035                   | 1,713,766.941                  | 39.691948429                 | -80,73925                |
| 10,950.00     | 14.19           | 247.41           | 10,829.73              | -724.40              | -470.00                | 14,414,663,144                   | 1,713,756.184                  | 39.691932335                 | -80.73928                |
| 11,000.00     | 14.63           | 259.35           | 10,878.17              | -727.92              | -481.87                | 14,414,659,621                   | 1,713,744.315                  | 39,691922756                 | -80,73933                |
| 11,050.00     | 15.64           | 270.20           | 10,926.44              | -729.06              | -494.82                | 14,414,658.477                   | 1,713,731.367                  | 39.691919718                 | -80.73937                |
| 11,100.00     | 17.10           | 279.51           | 10,974.42              | -727.83              | -508.81                | 14,414,659,716                   | 1,713,717.374                  | 39.691923230                 | -80.739426               |
| 11,150.00     | 18.92           | 287.23           | 11,021.98              | -724.21              | -523.81                | 14,414,663,332                   | 1,713,702.376                  | 39.691933282                 | -80.739480               |
| 11,200.00     | 21.01           | 293,56           | 11,068.97              | -718.22              | -539.77                | 14,414,669,318                   | 1,713,686.412                  | 39,691949847                 | -80.739536               |
| 11,250.00     | 23.29           | 298.75           | 11,115,29              | -709,89              | -556.66                | 14,414,677.655                   | 1,713,669.528                  | 39.691972879                 | -80,739596               |
| 11,300.00     | 25.70           | 303.03           | 11,160.79              | -699.22              | -574.42                | 14,414,688.322                   | 1,713,651.768                  | 39,692002315                 | -80.73965                |
| 11,350.00     | 28.23           | 306.62           | 11,205.35              | -686.25              | -593.00                | 14,414,701,289                   | 1,713,633.183                  | 39.692038074                 | -80.73972                |
| 11,400.00     | 30.83           | 309.65           | 11,248.85              | -671.02              | -612.36                | 14,414,716.520                   | 1,713,613.823                  | 39.692080059                 | -80.739794               |
| 11,450.00     | 33.49           | 312,25           | 11,291.18              | -653.57              | -632.45                | 14,414,733.975                   | 1,713,593.740                  | 39,692128154                 | -80,73986                |
| 11,500.00     | 36.20           | 314.50           | 11,332.21              | -633.94              | -653.20                | 14,414,753.604                   | 1,713,572.991                  | 39.692182227                 | -80,73993                |
| 11,550.00     | 38.95           | 316.48           | 11,371.84              | -612.19              | -674.55                | 14,414,775.354                   | 1,713,551.631                  | 39.692242130                 | -80.740014               |
| 11,600,00     | 41.73           | 318.23           | 11,409,94              | -588,38              | -696.47                | 14,414,799.166                   | 1,713,529.720                  | 39,692307700                 | -80.74009                |
| 11,650.00     | 44.53           | 319.81           | 11,446.43              | -562.57              | -718.87                | 14,414,824.975                   | 1,713,507.317                  | 39.692378756                 | -80,74017                |
| 11,700.00     | 47.35           | 321.23           | 11,481.20              | -534.83              | -741.70                | 14,414,852.708                   | 1,713,484.484                  | 39,692455103                 | -80.740252               |
| 11,746.76     | 50.00           | 322.45           | 11,512.08              | -507.22              | -763.39                | 14,414,880,321                   | 1,713,462.796                  | 39.692531109                 | -80.740329               |
| Begin 8°      | /100' build/tur | n                |                        |                      |                        |                                  |                                |                              |                          |
| 11,750.00     | 50.25           | 322,52           | 11,514.16              | -505,25              | -764.90                | 14,414,882,293                   | 1,713,461.282                  | 39.692536535                 | -80,74033                |
| 11,800.00     | 54,18           | 323,47           | 11,544.78              | -473.69              | -788.68                | 14,414,913.848                   | 1,713,437,508                  | 39.692623385                 | -80.740419               |
| 11,850.00     | 58.12           | 324.33           | 11,572.63              | -440.14              | -813.13                | 14,414,947.397                   | 1,713,413.053                  | 39.692715716                 | -80.740508               |
| 11,900.00     | 62,06           | 325.13           | 11,597.56              | -404,76              | -838,15                | 14,414,982.777                   | 1,713,388.037                  | 39.692813079                 | -80.740594               |
| 11,950.00     | 66,00           | 325,86           | 11,619.45              | -367.73              | -863.60                | 14,415,019.815                   | 1,713,362.582                  | 39.692914999                 | -80,74068                |
| 12,000.00     | 69.95           | 326.56           | 11,638.19              | -329.21              | -889.37                | 14,415,058.331                   | 1,713,336.812                  | 39.693020980                 | -80.74077                |
| 12,050.00     | 73.90           | 327.21           | 11,653.70              | -289.40              | -915,34                | 14,415,098.137                   | 1,713,310.851                  | 39.693130505                 | -80.740867               |
| 12,100.00     | 77.85           | 327.85           | 11,665,90              | -248,50              | -941.36                | 14,415,139.039                   | 1,713,284,827                  | 39.693243042                 | -80.740959               |
| 12,150.00     | 81,81           | 328,46           | 11,674,72              | -206,70              | -967.32                | 14,415,180.838                   | 1,713,258.867                  | 39.693358040                 | -80.74105                |
| 12,200.00     | 85.76           | 329.06           | 11,680.14              | -164.21              | -993.09                | 14,415,223.330                   | 1,713,233.097                  | 39.693474941                 | -80.741142               |
| 12,250.00     | 89.72           | 329,66           | 11,682.11              | -121.23              | -1,018.54              | 14,415,266.309                   | 1,713,207.642                  | 39.693593175                 | -80.741232               |
| 12,266.16     | 91.00           | 329.85           | 11,682.01              | -107.27              | -1,026,69              | 14,415,280.272                   | 1,713,199,501                  | 39.693631587                 | -80.74126                |
|               | .00° lateral    |                  |                        |                      |                        |                                  |                                |                              |                          |
| 12,300.00     | 91,00           | 329,85           | 11,681.42              | -78.01               | -1,043.68              | 14,415,309.527                   | 1,713,182,511                  | 39,693712065                 | -80.741321               |
| 12,400,00     | 91.00           | 329.85           | 11,679,67              | 8.45                 | -1,093.89              | 14,415,395.988                   | 1,713,132.297                  | 39,693949911                 | -80.741499               |
| 12,500.00     | 91.00           | 329.85           | 11,677.93              | 94.91                | -1,144.10              | 14,415,482.449                   | 1,713,082,083                  | 39.694187757                 | -80,741676               |
| 12,600.00     | 91.00           | 329.85           | 11,676.19              | 181.37               | -1,194.32              | 14,415,568.910                   | 1,713,031.869                  | 39.694425603                 | -80.741854               |
| 12,700.00     | 91.00           | 329.85           | 11,674.45              | 267.83               | -1,244.53              | 14,415,655.371                   | 1,712,981.655                  | 39.694663448                 | -80.74203                |
| 12,800.00     | 91.00           | 329.85           | 11,672.71              | 354.29               | -1,294.75              | 14,415,741.832                   | 1,712,931.441                  | 39.694901293                 | -80.742209               |
| 12,900.00     | 91.00           | 329.85           | 11,670.97              | 440.75               | -1,344.96              | 14,415,828.292                   | 1,712,881.227                  | 39,695139138                 | -80.742387               |
| 13,000.00     | 91.00           | 329.85           | 11,669.23              | 527.21               | -1,395.17              | 14,415,914.753                   | 1,712,831.013                  | 39.695376982                 | -80.742564               |
| 13,100.00     | 91.00           | 329.85           | 11,667.49              | 613.68               | -1,445.39              | 14,416,001.214                   | 1,712,780.800                  | 39.695614826                 | -80.742742               |
| 13,200.00     | 91.00           | 329.85           | 11,665.75              | 700.14               | -1,495,60              | 14,416,087.675                   | 1,712,730.586                  | 39.695852670                 | -80.742920               |
| 13,300.00     | 91.00           | 329.85           | 11,664.01              | 786.60               | -1,545.82              | 14,416,174,136                   | 1,712,680,372                  | 39,696090514                 | -80.743097               |
| 13,400.00     | 91.00           | 329.85           | 11,662,26              | 873.06               | -1,596.03              | 14,416,260,597                   | 1,712,630.158                  | 39,696328357                 | -80.743275               |
| 13,500.00     | 91.00           | 329.85           | 11,660.52              | 959.52               | -1,646.24              | 14,416,347.058                   | 1,712,579.944                  | 39.696566200                 | -80.743452               |
| 13,600.00     | 91.00           | 329.85           | 11,658.78              | 1,045.98             | -1,696.46              | 14,416,433,519                   | 1,712,529,730                  | 39.696804043                 | -80.743630               |
| 13,700.00     | 91,00<br>91.00  | 329.85<br>329.85 | 11,657.04<br>11,655.30 | 1,132,44<br>1,218,90 | -1,746.67<br>-1,796.89 | 14,416,519,980<br>14,416,606,441 | 1,712,479,516<br>1,712,429.302 | 39,697041885<br>39,697279727 | -80.743808<br>-80.743985 |



Database:

DB\_Dec2220\_v16
Tug Hill Operating LLC

Company: Project:

Wetzel County, West Virginia (UTM17 NAD83)

Site:

Elmer

Well: Elmer N-15 HU (slot B)

Wellbore:

Original Hole

Design: rev1

Local Co-ordinate Reference:

TVD Reference:

MD Reference: North Reference:

Survey Calculation Method:

Well Elmer N-15 HU (slot B)

AMERICAN VICE

GL @ 1277,00ft GL @ 1277.00ft

Grid

Minimum Curvature

Planned Survey Measured Vertical Мар Мар Depth Inclination Azimuth Depth +N/-S +E/-W Northing Easting (usft) (usft) Longitude (ft) (ft) (ft) (ft) Latitude (°) (°) 39.697517569 -80.744163537 329.85 11,653.56 14,416,692,902 1,712,379,088 13,900.00 91.00 1.305.36 -1 847.10 39.697755411 -80.744341176 91.00 329.85 11,651.82 1,391.83 -1,897,31 14,416,779.363 1,712,328.874 14.000.00 39.697993252 -80.744518817 14,100.00 91.00 329.85 11,650.08 1,478.29 -1.947.5314,416,865,823 1,712,278.660 39.698231093 -80.744696460 14,200.00 91.00 329.85 11,648.34 1,564.75 -1.997.7414,416,952,284 1,712,228,446 -80.744874103 329.85 11,646.59 1,651.21 -2,047,96 14,417,038.745 1,712,178.232 39.698468934 91.00 14,300,00 14,400.00 91,00 329.85 11,644.85 1.737.67 -2,098.17 14,417,125.206 1,712,128.019 39.698706775 -80.745051748 -80.745229394 39.698944615 14,500.00 91.00 329.85 11,643.11 1,824.13 -2.148.38 14,417,211.667 1,712,077.805 39.699182455 -80,745407041 329.85 1.910.59 -2.198.60 14,417,298.128 1,712,027,591 91.00 11,641.37 14,600,00 39.699420295 -80.745584689 14,700.00 91.00 329,85 11,639.63 1,997.05 -2,248.81 14,417,384.589 1,711,977.377 -80.745762338 91.00 329.85 11,637.89 2,083.51 -2,299.03 14,417,471.050 1,711,927.163 39 699658134 14,800.00 329.85 -2 349 24 1,711,876,949 39.699895973 -80.745939989 14,900.00 91.00 11,636.15 2 169 98 14,417,557,511 -80.746117641 91.00 329.85 11,634.41 2,256.44 -2,399.45 14,417,643.972 1,711,826.735 39,700133812 15,000.00 2,342.90 -2,449.67 14,417,730.433 1,711,776.521 39.700371651 -80.746295294 15,100.00 91.00 329.85 11,632,67 39.700609489 -80.746472949 15,200,00 91.00 329.85 11,630.92 2,429.36 -2,499.88 14,417,816.893 1,711,726.307 91 00 329.85 11,629.18 2.515.82 -2 550 10 14,417,903.354 1 711 676 093 39.700847327 -80.746650604 15,300.00 -80.746828261 91.00 329.85 11,627.44 2,602.28 -2,600.3114,417,989.815 1,711,625.879 39.701085165 15,400.00 -80.747005919 15,500,00 91.00 329.85 11,625.70 2,688.74 -2,650.5214,418,076.276 1,711,575.665 39.701323002 -80.747183578 2.775.20 39 701560839 329.85 11.623.96 -2.700.741.711.525.451 15,600,00 91.00 14,418,162,737 15,700,00 91.00 329.85 11,622.22 2,861.66 -2,750.95 14.418.249.198 1,711,475.238 39.701798676 -80.747361239 329.85 11,620.48 -2,801.17 39.702036513 -80.747538901 15,800.00 91.00 2,948.12 14,418,335.659 1,711,425.024 -80.747716563 39,702274349 15,900.00 91.00 329,85 11,618.74 3,034.59 -2,851,38 14,418,422.120 1,711,374.810 329.85 39.702512185 -80.747894228 16,000,00 91.00 11.617.00 3,121.05 -2 901 59 14.418.508.581 1,711,324.596 16,100.00 91.00 329.85 11,615.25 3,207.51 -2.951.81 14,418,595.042 1,711,274.382 39.702750021 -80.748071893 -80.748249559 16,200.00 91.00 329.85 11,613.51 3,293.97 -3,002.02 14,418,681.503 1,711,224.168 39.702987857 -80.748427227 329.85 39.703225692 16,300.00 91.00 11,611,77 3 380 43 -3 052 24 14,418,767.964 1.711.173.954 -80.748604896 16,400.00 91.00 329.85 11,610.03 3,466.89 -3,102.45 14,418,854,424 1,711,123,740 39,703463527 16,500.00 91.00 329.85 11,608.29 3,553,35 -3,152.66 14,418,940.885 1,711,073.526 39.703701362 -80.748782566 -80.748960238 39,703939196 16,600.00 91.00 329.85 11.606.55 3.639.81 -3,202.88 14,419,027.346 1,711,023.312 329.85 -3,253.09 1.710,973.098 39.704177030 -80.749137911 16,700.00 91.00 11,604,81 3.726.27 14,419,113,807 -80.749315584 16,800.00 91.00 329.85 11.603.07 3,812.74 -3,303.31 14,419,200,268 1,710,922,884 39.704414864 16,900.00 91.00 329.85 11.601.33 3,899.20 -3,353.52 14,419,286.729 1,710,872.671 39.704652698 -80 749493259 329.85 11.599.58 -80,749670936 17,000.00 91.00 3.985.66 -3.403.7314,419,373,190 1.710,822,457 39.704890531 17,100.00 91.00 329,85 11,597.84 4,072.12 -3,453.95 14,419,459.651 1,710,772.243 39.705128364 -80.749848613 17,200.00 91.00 329.85 11,596.10 4,158.58 -3,504.16 14,419,546,112 1,710,722.029 39.705366197 -80.750026292 17,300.00 91.00 329.85 11,594,36 4.245.04 -3.554.38 14,419,632,573 1,710,671.815 39.705604029 -80.750203972 91.00 329.85 11,592.62 4.331.50 -3.604.59 39.705841861 -80.750381653 17,400.00 14,419,719.034 1.710.621.601 329.85 11,590.88 -80.750559335 17,500,00 91.00 4,417,96 -3.654.8014,419,805,495 1,710,571,387 39.706079693 17,600.00 91,00 329.85 11,589.14 4,504.42 -3,705.02 14,419,891.955 1,710,521.173 39.706317525 -80.750737019 329.85 11,587,40 17,700.00 91.00 4 590 89 -3 755 23 1,710,470.959 39.706555356 -80 750914704 14,419,978,416 17,800.00 91.00 329.85 11,585.66 4,677.35 -3,805.45 14,420,064,877 1,710,420,745 39.706793187 -80.751092390 17,900.00 91,00 329,85 11,583,92 4,763.81 -3,855.66 14,420,151.338 1,710,370,531 39.707031018 -80.751270077 18.000.00 91.00 329.85 11.582.17 4.850.27 -3.905.87 39,707268849 -80.751447766 14,420,237,799 1,710,320,317 18,100,00 91.00 329.85 11.580.43 4.936.73 -3.956.09 14,420,324,260 1,710,270,103 39.707506679 -80.751625455 18,200.00 91,00 329.85 11,578.69 5,023.19 -4,006.30 14,420,410.721 1,710,219,890 39.707744509 -80.751803146 91.00 329.85 18,300,00 11.576.95 5.109.65 -4.056.52 39.707982338 -80.751980838 14,420,497,182 1,710,169,676 18,400.00 91.00 329.85 11.575.21 5.196.11 -4,106.73 14,420,583.643 1,710,119.462 39.708220168 -80.752158532 18,500,00 91.00 329.85 11,573.47 5,282.57 -4,156.95 14,420,670.104 1,710,069.248 39.708457997 -80.752336226 18,600.00 91.00 329.85 11.571.73 5.369.04 -4,207.16 14,420,756,565 1.710.019.034 39,708695826 -80.752513922 329.85 18,700.00 91,00 11.569.99 5,455.50 -4,257.37 14,420,843.026 1,709,968,820 39.708933654 -80.752691619 18,800,00 91.00 329.85 11.568.25 5,541.96 -4,307.59 14,420,929,486 1,709,918.606 39.709171483 -80.752869317 329.85 18 900 00 91.00 11 566 50 5.628.42 -4.357.80 14,421,015.947 1.709.868,392 39.709409311 -80.753047016 19,000.00 91.00 329.85 11,564.76 5,714.88 -4,408.02 14,421,102,408 39.709647139 -80.753224717 1,709,818,178 19,100.00 91,00 329,85 11,563.02 5,801.34 -4,458.23 14,421,188.869 39.709884966 -80.753402419 1,709,767,964 19.200.00 91.00 329.85 11,561.28 5.887.80 -4.508.44 14,421,275.330 1,709,717,750 39.710122793 -80.753580122 19,300,00 329.85 91.00 11,559.54 5,974.26 -4,558.66 14,421,361.791 1,709,667.536 39.710360620 -80,753757826



Database:

DB Dec2220\_v16

Company: Project:

Wetzel County, West Virginia (UTM17 NAD83)

Site:

Well:

Elmer N-15 HU (slot B)

Wellbore:

Original Hole

Design:

rev1

Tug Hill Operating LLC

TVD Reference: MD Reference:

North Reference:

Survey Calculation Method:

Local Co-ordinate Reference:

Well Elmer N-15 HU (slot B)

GL @ 1277.00ft GL@ 1277.00ft

Grid

Minimum Curvature

| ned Survey                |                 |                |                           |               |               |                           |                          |              |                   |
|---------------------------|-----------------|----------------|---------------------------|---------------|---------------|---------------------------|--------------------------|--------------|-------------------|
| Measured<br>Depth<br>(ft) | Inclination (°) | Azimuth<br>(°) | Vertical<br>Depth<br>(ft) | +N/-S<br>(ft) | +E/-W<br>(ft) | Map<br>Northing<br>(usft) | Map<br>Easting<br>(usft) | Latitude     | Longitude         |
| 19,400.00                 | 91.00           | 329.85         | 11,557.80                 | 6,060.72      | -4,608.87     | 14,421,448,252            | 1,709,617,322            | 39.710598447 | -80,7539355       |
| 19,500.00                 | 91.00           | 329.85         | 11,556.06                 | 6,147.19      | -4,659.09     | 14,421,534.713            | 1,709,567.109            | 39.710836273 | -80.7541132       |
| 19,600.00                 | 91.00           | 329.85         | 11,554.32                 | 6,233.65      | -4,709.30     | 14,421,621.174            | 1,709,516.895            | 39.711074099 | -80.754290        |
| 19,700.00                 | 91.00           | 329.85         | 11,552.58                 | 6,320.11      | -4,759.51     | 14,421,707.635            | 1,709,466.681            | 39.711311925 | -80.754468        |
| 19,800.00                 | 91.00           | 329,85         | 11,550.83                 | 6,406.57      | -4,809.73     | 14,421,794.096            | 1,709,416,467            | 39,711549750 | -80.754646        |
| 19,900.00                 | 91.00           | 329,85         | 11,549.09                 | 6,493.03      | -4,859,94     | 14,421,880,556            | 1.709,366,253            | 39,711787576 | -80.754824        |
| 20,000.00                 | 91.00           | 329.85         | 11,547,35                 | 6,579.49      | -4,910.16     | 14,421,967.017            | 1.709,316,039            | 39.712025401 | -80,755001        |
| 20,100.00                 | 91.00           | 329.85         | 11,545.61                 | 6,665.95      | -4,960.37     | 14,422,053.478            | 1.709,265.825            | 39.712263225 | -80.755179        |
| 20,200.00                 | 91.00           | 329.85         | 11,543.87                 | 6,752.41      | -5,010.58     | 14,422,139.939            | 1.709,215.611            | 39.712501050 | -80.755357        |
| 20,300.00                 | 91.00           | 329,85         | 11,542.13                 | 6,838.87      | -5,060,80     | 14,422,226.400            | 1,709,165.397            | 39.712738874 | -80.755534        |
| 20,400.00                 | 91.00           | 329.85         | 11,540.39                 | 6,925.34      | -5,111.01     | 14,422,312.861            | 1.709,115.183            | 39.712976698 | -80.755712        |
| 20,500.00                 | 91.00           | 329.85         | 11,538.65                 | 7,011.80      | -5,161.23     | 14,422,399.322            | 1,709,064.969            | 39.713214521 | -80.755890        |
| 20,600,00                 | 91,00           | 329.85         | 11,536.91                 | 7,098,26      | -5,211.44     | 14,422,485,783            | 1,709,014.755            | 39.713452345 | -80.756068        |
| 20,700.00                 | 91.00           | 329,85         | 11,535,16                 | 7,184,72      | -5,261,65     | 14,422,572.244            | 1,708,964.541            | 39,713690168 | -80.756245        |
| 20,800.00                 | 91.00           | 329,85         | 11,533.42                 | 7,271.18      | -5,311,87     | 14,422,658,705            | 1,708,914.328            | 39.713927990 | -80.756423        |
| 20,900.00                 | 91.00           | 329.85         | 11,531.68                 | 7,357.64      | -5,362.08     | 14,422,745.166            | 1,708,864.114            | 39.714165813 | -80.756601        |
| 21,000.00                 | 91.00           | 329.85         | 11,529.94                 | 7,444.10      | -5,412.30     | 14,422,831.627            | 1,708,813.900            | 39.714403635 | -80,756778        |
| 21,100.00                 | 91,00           | 329.85         | 11,528.20                 | 7,530,56      | -5,462,51     | 14,422,918.087            | 1,708,763,686            | 39.714641457 | -80.756956        |
| 21,200.00                 | 91.00           | 329.85         | 11,526,46                 | 7,617.02      | -5,512.72     | 14,423,004.548            | 1,708,713.472            | 39.714879279 | -80.757134        |
| 21,300.00                 | 91.00           | 329.85         | 11,524.72                 | 7,703.49      | -5,562.94     | 14,423,091.009            | 1,708,663.258            | 39.715117100 | -80.757312        |
| 21,400.00                 | 91.00           | 329.85         | 11,522.98                 | 7,789.95      | -5,613,15     | 14,423,177.470            | 1,708,613,044            | 39.715354921 | -80.757489        |
| 21,500.00                 | 91,00           | 329.85         | 11,521.24                 | 7,876.41      | -5,663,37     | 14,423,263,931            | 1,708,562,830            | 39.715592742 | -80.757667        |
| 21,600.00                 | 91.00           | 329.85         | 11,519.49                 | 7,962,87      | -5,713,58     | 14,423,350.392            | 1,708,512,616            | 39.715830562 | -80.75784         |
| 21,700.00                 | 91,00           | 329.85         | 11,517.75                 | 8,049,33      | -5,763.79     | 14,423,436.853            | 1,708,462.402            | 39.716068383 | -80.758023        |
| 21,800.00                 | 91.00           | 329.85         | 11,516.01                 | 8,135.79      | -5,814.01     | 14,423,523.314            | 1,708,412.188            | 39,716306202 | -80.758200        |
| 21,900.00                 | 91.00           | 329.85         | 11,514.27                 | 8,222,25      | -5,864.22     | 14,423,609.775            | 1,708,361.974            | 39.716544022 | -80,758378        |
| 22,000.00                 | 91.00           | 329.85         | 11,512.53                 | 8,308.71      | -5,914.44     | 14,423,696.236            | 1,708,311.761            | 39.716781842 | -80.758556        |
| 22,100.00                 | 91.00           | 329.85         | 11,510.79                 | 8,395.17      | -5,964.65     | 14,423,782.697            | 1,708,261.547            | 39.717019661 | -80.758734        |
| 22,200.00                 | 91.00           | 329.85         | 11,509.05                 | 8,481.63      | -6,014.86     | 14,423,869.158            | 1,708,211.333            | 39.717257480 | -80,758911        |
| 22,300.00                 | 91.00           | 329.85         | 11,507.31                 | 8,568.10      | -6,065.08     | 14,423,955.618            | 1,708,161,119            | 39.717495298 | -80.759089        |
| 22,400.00                 | 91.00           | 329.85         | 11,505.57                 | 8,654.56      | -6,115.29     |                           |                          | 39,717733116 | -80.759267        |
| 22,500.00                 | 91.00           | 329.85         | 11,503.82                 | 8,741.02      |               | 14,424,042.079            | 1,708,110.905            |              | -80.759445        |
|                           |                 |                |                           |               | -6,165.51     | 14,424,128.540            | 1,708,060.691            | 39.717970934 | The second second |
| 22,600,00                 | 91.00           | 329.85         | 11,502.08                 | 8,827.48      | -6,215.72     | 14,424,215.001            | 1,708,010.477            | 39.718208752 | -80,759622        |
| 22,700.00                 | 91.00           | 329.85         | 11,500.34                 | 8,913.94      | -6,265,93     | 14,424,301.462            | 1,707,960.263            | 39.718446570 | -80.759800        |
| 22,800.00                 | 91.00           | 329.85         | 11,498.60                 | 9,000.40      | -6,316.15     | 14,424,387,923            | 1,707,910.049            | 39.718684387 | -80,759978        |
| 22,900.00                 | 91.00           | 329.85         | 11,496.86                 | 9,086.86      | -6,366,36     | 14,424,474.384            | 1,707,859.835            | 39.718922204 | -80,760155        |
| 23,000.00                 | 91.00           | 329,85         | 11,495.12                 | 9,173.32      | -6,416.58     | 14,424,560.845            | 1,707,809.621            | 39.719160020 | -80,760333        |
| 23,100.00                 | 91.00           | 329.85         | 11,493.38                 | 9,259.78      | -6,466.79     | 14.424,647.306            | 1,707,759.407            | 39.719397837 | -80.760511        |
| 23,200.00                 | 91.00           | 329.85         | 11,491.64                 | 9,346.25      | -6,517.00     | 14,424,733.767            | 1,707,709.193            | 39.719635653 | -80.760689        |
| 23,300.00                 | 91.00           | 329.85         | 11,489.90                 | 9,432.71      | -6,567.22     | 14,424,820,228            | 1,707,658.980            | 39.719873468 | -80.760866        |
| 23,400.00                 | 91.00           | 329.85         | 11,488.16                 | 9,519,17      | -6,617.43     | 14,424,906.689            | 1,707,608.766            | 39.720111284 | -80.761044        |
| 23,500.00                 | 91.00           | 329.85         | 11,486.41                 | 9,605.63      | -6,667,65     | 14,424,993.149            | 1,707,558.552            | 39.720349099 | -80,761222        |
| 23,600.00                 | 91.00           | 329.85         | 11,484.67                 | 9,692.09      | -6,717.86     | 14,425,079.610            | 1,707,508.338            | 39.720586914 | -80.761400        |
| 23,700.00                 | 91.00           | 329.85         | 11,482.93                 | 9,778.55      | -6,768.07     | 14,425,166.071            | 1,707,458.124            | 39.720824729 | -80.761578        |
| 23,800.00                 | 91.00           | 329,85         | 11,481.19                 | 9,865,01      | -6,818.29     | 14,425,252.532            | 1,707,407.910            | 39.721062543 | -80.761755        |
| 23,900.00                 | 91.00           | 329,85         | 11,479,45                 | 9,951.47      | -6,868,50     | 14,425,338.993            | 1,707,357.696            | 39,721300357 | -80.761933        |
| 24,000.00                 | 91.00           | 329.85         | 11,477.71                 | 10,037.93     | -6,918.72     | 14,425,425.454            | 1,707,307.482            | 39.721538171 | -80.762111        |
| 24,100.00                 | 91.00           | 329,85         | 11,475.97                 | 10,124.40     | -6,968.93     | 14,425,511.915            | 1,707,257,268            | 39.721775985 | -80.762289        |
| 24,200,00                 | 91.00           | 329.85         | 11,474.23                 | 10,210,86     | -7,019.14     | 14,425,598,376            | 1,707,207.054            | 39.722013798 | -80.762466        |
| 24,300,00                 | 91,00           | 329.85         | 11,472,49                 | 10,297.32     | -7,069.36     | 14,425,684.837            | 1,707,156.840            | 39,722251611 | -80.762644        |
| 24,400.00                 | 91,00           | 329.85         | 11,470.74                 | 10,383.78     | -7,119.57     | 14,425,771.298            | 1,707,106.626            | 39.722489424 | -80.762822        |
| 24,500,00                 | 91,00           | 329.85         | 11,469,00                 | 10,470.24     | -7,169.79     | 14,425,857.759            | 1,707,056.412            | 39.722727236 | -80.763000        |
| 24,600,00                 | 91.00           | 329.85         | 11,467.26                 | 10,556.70     | -7,220.00     | 14,425,944.219            | 1,707,006.199            | 39.722965048 | -80.763177        |
| 24,700.00                 | 91.00           | 329.85         | 11,465.52                 | 10,643.16     | -7,270.21     | 14,426,030.680            | 1,706,955.985            | 39,723202860 | -80,763355        |
| 24,800.00                 | 91.00           | 329.85         | 11,463.78                 | 10,729.62     | -7,320.43     | 14,426,117.141            | 1,706,905.771            | 39.723440672 | -80.763533        |



Database: Company: DB\_Dec2220\_v16
Tug Hill Operating LLC

Project: Wetzel County, West Virginia (UTM17 NAD83)

Site: Elme

Well: Elmer N-15 HU (slot B)

Wellbore: Original Hole Design: rev1

Local Co-ordinate Reference:

TVD Reference: MD Reference: North Reference:

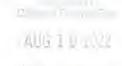
Survey Calculation Method:

Well Elmer N-15 HU (slot B)

GL @ 1277.00ft GL @ 1277.00ft

Grid Minimum Curvature AUG | 5 / 12

| ned Survey                |                 |                  | Vertical          |               |                        | Мар                | Мар  |              |             |
|---------------------------|-----------------|------------------|-------------------|---------------|------------------------|--------------------|--|--------------|-------------|
| Measured<br>Depth<br>(ft) | Inclination (°) | Azimuth<br>(°)   | Depth<br>(ft)     | +N/-S<br>(ft) | +E/-W<br>(ft)          | Northing<br>(usft) | Easting<br>(usft)  | Latitude     | Longitude   |
| 24,900,00                 | 91.00           | 329,85           | 11,462.04         | 10,816.08     | -7,370.64              | 14,426,203,602     | 1,706,855.557  | 39.723678483 | -80.7637112 |
| 25,000,00                 | 91.00           | 329.85           | 11,460,30         | 10,902.55     | -7,420.86              | 14,426,290,063     | 1,706,805.343  | 39.723916294 | -80.763888  |
| 25,100.00                 | 91.00           | 329.85           | 11,458.56         | 10,989.01     | -7,471.07              | 14,426,376.524     | 1,706,755.129  | 39.724154105 | -80.764066  |
| 25,200.00                 | 91.00           | 329.85           | 11,456.82         | 11,075.47     | -7,521.28              | 14,426,462,985     | 1,706,704.915  | 39.724391916 | -80.764244  |
| 25,300.00                 | 91.00           | 329.85           | 11,455.07         | 11,161.93     | -7,571.50              | 14,426,549.446     | 1,706,654.701  | 39.724629726 | -80.764422  |
| 25,400,00                 | 91.00           | 329.85           | 11,453.33         | 11,248.39     | -7,621.71              | 14,426,635.907     | 1,706,604.487  | 39,724867536 | -80,764600  |
| 25,500.00                 | 91.00           | 329.85           | 11,451.59         | 11,334.85     | -7,671.93              | 14,426,722.368     | 1,706,554.273  | 39.725105344 | -80.764777  |
| 25,600.00                 | 91.00           | 329.85           | 11,449.85         | 11,421.31     | -7,722.14              | 14,426,808.829     | 1,706,504.059  | 39.725343154 | -80.764955  |
| 25,700.00                 | 91.00           | 329.85           | 11,448,11         | 11,507.77     | -7,772,35              | 14,426,895,290     | 1,706,453.845  | 39.725580963 | -80.765133  |
| 25,800.00                 | 91.00           | 329,85           | 11,446.37         | 11,594.23     | -7,822.57              | 14,426,981.750     | 1,706,403.632  | 39.725818772 | -80.765311  |
| 25,900,00                 | 91.00           | 329.85           | 11,444.63         | 11,680.70     | -7,872.78              | 14,427,068.211     | 1,706,353,418  | 39.726056580 | -80.765489  |
| 26,000.00                 | 91,00           | 329.85           | 11,442.89         | 11,767.16     | -7,923.00              | 14,427,154.672     | 1,706,303.204  | 39,726294389 | -80.765666  |
| 26,100.00                 | 91.00           | 329.85           | 11,441.15         | 11,853.62     | -7,973.21              | 14,427,241.133     | 1,706,252,990  | 39.726532197 | -80.765844  |
| 26,200.00                 | 91,00           | 329.85           | 11,439.40         | 11,940.08     | -8,023.43              | 14,427,327.594     | 1,706,202.776  | 39.726770004 | -80,766022  |
| 26,300.00                 | 91.00           | 329.85           | 11,437.66         | 12,026.54     | -8,073.64              | 14,427,414.055     | 1,706,152.562  | 39.727007812 | -80.766200  |
| 26,400.00                 | 91.00           | 329.85           | 11,435.92         | 12,113.00     | -8,123.85              | 14,427,500.516     | 1,706,102.348  | 39.727245619 | -80.766377  |
| 26,500.00                 | 91,00           | 329.85           | 11,434.18         | 12,199.46     | -8,174.07              | 14,427,586.977     | 1,706,052,134  | 39,727483426 | -80.766555  |
| 26,600,00                 | 91.00           | 329.85           | 11,432.44         | 12,285,92     | -8,224.28              | 14,427,673,438     | 1,706,001.920  | 39,727721232 | -80,766733  |
| 26,700.00                 | 91.00           | 329.85           | 11,430.70         | 12,372.38     | -8,274.50              | 14,427,759.899     | 1,705,951.706  | 39.727959039 | -80,766911  |
| 26,800.00                 | 91.00           | 329.85           | 11,428.96         | 12,458.85     | -8,324.71              | 14,427,846.360     | 1,705,901,492  | 39.728196845 | -80.767089  |
| 26,900.00                 | 91.00           | 329.85           | 11,427.22         | 12,545.31     | -8,374.92              | 14,427,932.821     | 1,705,851,278  | 39.728434650 | -80.767266  |
| 27,000.00                 | 91.00           | 329,85           | 11,425.48         | 12,631.77     | -8,425,14              | 14,428,019.281     | 1,705,801.064  | 39,728672456 | -80,767444  |
| 27,100.00                 | 91.00           | 329.85           | 11,423.73         | 12,718.23     | -8,475.35              | 14,428,105.742     | 1,705,750.851  | 39.728910261 | -80.767622  |
| 27,200.00                 | 91.00           | 329.85           | 11,421.99         | 12,804.69     | -8,525.57              | 14,428,192.203     | 1,705,700.637  | 39.729148066 | -80,767800  |
| 27,200.00                 | 91.00           | 329.85           | 11,420.25         | 12,891.15     | -8,575.78              | 14,428,278.664     | 1,705,650.423  | 39.729385871 | -80,767978  |
| 27,400,00                 | 91.00           | 329.85           | 11,420.23         | 12,977.61     | -8,625.99              | 14,428,365.125     | 1,705,600.209  | 39.729623675 | -80.768155  |
|                           | 7.7.7.4         |                  | April 100 mayor 1 |               |                        |                    | The second secon | 39.729861479 | -80.768333  |
| 27,500.00                 | 91.00           | 329.85           | 11,416.77         | 13,064.07     | -8,676,21              | 14,428,451.586     | 1,705,549.995  | 39.730099283 | -80.768511  |
| 27,600.00                 | 91.00           | 329.85<br>329.85 | 11,415.03         | 13,150.53     | -8,726.42<br>-8,776.64 | 14,428,538.047     | 1,705,499.781  | 39.730337087 | -80.768689  |
| 27,700.00                 | 91.00           |                  | 11,413.29         | 13,237.00     |                        | 14,428,624.508     | 1,705,449.567  | 39.730574890 | -80,768867  |
| 27,800.00                 | 91.00           | 329.85           | 11,411.55         | 13,323,46     | -8,826.85              | 14,428,710.969     | 1,705,399.353  |              | -80.769044  |
| 27,900.00                 | 91.00           | 329.85           | 11,409.81         | 13,409.92     | -8,877.06              | 14,428,797.430     | 1,705,349.139  | 39.730812693 | -80,769222  |
| 28,000.00                 | 91.00           | 329.85           | 11,408.07         | 13,496.38     | -8,927.28              | 14,428,883.891     | 1,705,298.925  | 39.731050495 |             |
| 28,100.00                 | 91.00           | 329.85           | 11,406.32         | 13,582.84     | -8,977.49              | 14,428,970.352     | 1,705,248.711  | 39.731288298 | -80,769400  |
| 28,200.00                 | 91.00           | 329.85           | 11,404.58         | 13,669,30     | -9,027.71              | 14,429,056.812     | 1,705,198.497  | 39.731526100 | -80.769578  |
| 28,300.00                 | 91.00           | 329.85           | 11,402.84         | 13,755.76     | -9,077.92              | 14,429,143,273     | 1,705,148.283  | 39.731763902 | -80.769756  |
| 28,400.00                 | 91.00           | 329.85           | 11,401.10         | 13,842.22     | -9,128.13              | 14,429,229.734     | 1,705,098.070  | 39.732001703 | -80.769934  |
| 28,500.00                 | 91.00           | 329.85           | 11,399.36         | 13,928.68     | -9,178.35              | 14,429,316,195     | 1,705,047.856  | 39.732239505 | -80,770111  |
| 28,600.00                 | 91.00           | 329,85           | 11,397.62         | 14,015.14     | -9,228.56              | 14,429,402.656     | 1,704,997.642  | 39.732477306 | -80.770289  |
| 28,700.00                 | 91.00           | 329.85           | 11,395.88         | 14,101.61     | -9,278.78              | 14,429,489.117     | 1,704,947.428  | 39.732715107 | -80.770467  |
| 28,800.00                 | 91.00           | 329.85           | 11,394.14         | 14,188.07     | -9,328.99              | 14,429,575.578     | 1,704,897.214  | 39.732952907 | -80.770645  |
| 28,900.00                 | 91.00           | 329.85           | 11,392.40         | 14,274.53     | -9,379.20              | 14,429,662,039     | 1,704,847.000  | 39.733190707 | -80.770823  |
| 29,000.00                 | 91.00           | 329.85           | 11,390.65         | 14,360.99     | -9,429.42              | 14,429,748.500     | 1,704,796,786  | 39,733428507 | -80.771000  |
| 29,100.00                 | 91.00           | 329.85           | 11,388.91         | 14,447.45     | -9,479.63              | 14,429,834.961     | 1,704,746.572  | 39.733666307 | -80.771178  |
| 29,152.44                 | 91.00           | 329.85           | 11,388.00         | 14,492.79     | -9,505.96              | 14,429,880.297     | 1,704,720.242  | 39.733791000 | -80.771272  |





Database: Company: DB\_Dec2220\_v16
Tug Hill Operating LLC

Company

Wetzel County, West Virginia (UTM17 NAD83)

Project: Site:

Elmer

Well:

Elmer N-15 HU (slot B)

Wellbore:

Original Hole

Design:

rev1

Local Co-ordinate Reference:

Local Co-ordinate Referen

TVD Reference:

North Reference:

Survey Calculation Method:

Well Elmer N-15 HU (slot B)

GL @ 1277.00ft GL @ 1277.00ft

Grid

Minimum Curvature

| Design Targets  |                        |                       |                            |                         |                            |                            |                   |              |               |
|---|------------------------|-----------------------|----------------------------|-------------------------|----------------------------|----------------------------|-------------------|--------------|---------------|
| Target Name - hit/miss target - Shape                   | Dip Angle              | Dip Dir.              | TVD<br>(ft)                | +N/-S<br>(ft)           | +E/-W<br>(ft)              | Northing<br>(usft)         | Easting<br>(usft) | Latitude     | Longitude     |
| Elmer N-15 HU BHL - plan hits target cen - Point        | 0,00<br>nter           | 0.00                  | 11,388.00                  | 14,492.79               | -9,505.96                  | 14,429,880.297             | 1,704,720.242     | 39.733791000 | -80.771272000 |
| Elmer N-15 HU LP<br>- plan misses target<br>- Point     | 0.00<br>center by 43.2 |                       | 11,682.00<br>1.26ft MD (11 | -107.26<br>681.57 TVD,  | -1,076.65<br>-85.57 N, -10 | 14,415,280,278<br>39.29 E) | 1,713,149.533     | 39,693632000 | -80.741439000 |
| Elmer N-15 HU LP 50E<br>- plan misses target<br>- Point | 0.00<br>center by 0.03 | 0.00<br>oft at 12266. | 11,682.00<br>15ft MD (116  | -107.26<br>82.01 TVD, - | -1,026.65<br>107.28 N, -10 | 14,415,280.278<br>26.68 E) | 1,713,199.536     | 39.693631604 | -80.741261241 |

| Measure | d 1 | Vertical  | Local Coor | dinates   |                                  |  |
|---------|-----|-----------|------------|-----------|----------------------------------|--|
| Depth   |     | Depth     | +N/-S      | +E/-W     |                                  |  |
| (ft)    |     | (ft)      | (ft)       | (ft)      | Comment                          |  |
| 7,502   | .00 | 7,502.00  | 0.00       | 0.00      | KOP Begin 2°/100' build          |  |
| 8,335   | .29 | 8,323.58  | -101.79    | -64.18    | Begin 16.67° tangent             |  |
| 10,791  | .33 | 10,676.46 | -697.62    | -439.84   | Begin 6°/100' build/turn         |  |
| 11,746  | .76 | 11,512.08 | -507.22    | -763.39   | Begin 8°/100' build/turn         |  |
| 12,266  | .16 | 11,682.01 | -107.27    | -1,026.69 | Begin 91.00° lateral             |  |
| 29,152  | 44  | 11,388.00 | 14,492.79  | -9,505.96 | PBHL/TD 29152.44 MD 11388.00 TVD |  |

PECS VED

AUG 1 9 2022

WV duburment of Environmental Projection DPS LAND SERVICES-AMANDA 6000 TOWN CENTER DLVD STE 145 DANCHSEURG PA 15317-5841

#### MEMORANDUM OF SURFACE USE AGREEMENT

This Memorandum of Surface Use Agreement ("Memorandum") made this 2 day of 2021 by and between Charles Lee & Betty Jean Huggins, husband and wife, whose address is 5352 Palmer Ridge Road, Proctor, WV 26055, (hereinafter collectively called "Surface Owner"), and TH EXPLORATION, LLC, a Texas limited liability company, with an address of 1320 S. University Drive, Suite 500, Fort Worth, TX 76107, (hereinafter called "Company").

WITNESSETH

For and in consideration of the sum of Ten Dollars (\$10.00) and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound, Surface Owner did make and execute in favor of Company a Surface Use Agreement (the "Agreement") dated from \$100.00 and other good and valuable to be legally bound, Surface Owner did make and execute in favor of Company a Surface Use Agreement (the "Agreement") dated from \$100.00 and other good and valuable to be legally bound, Surface Owner did make and execute in favor of Company a Surface Owner's interest in the following described lands (the "Lands"):

The Lands are located, all or part, in Proctor District, Wetzel County, State of West Virginia, and including lands identified as: 12-8-16, and described for the purposes of this Memorandum as containing 39.19 acres, and Lands located, all or part, in Proctor District, Wetzel County, State of West Virginia, and including all contiguous or appurtenant lands owned by Surface Owner, as described in that certain deed dated July 1, 1987 and recorded in the office of the County Clerk of the aforesaid County in Deed Book, 322-120.

The Company desires to use the portion of Land labeled as "Limit of Disturbance – Pad" and "Limit of Disturbance – Access Road" on the attached Exhibit A for the construction and installation of access roads, drilling pads, tanks, fences, pits and any other facilities or equipment necessary or convenient for the drilling, completion, production, operation, and maintenance of the Company's operations on or off the Land as well as to lay, maintain, excavate, construct, survey, re-construct, operate, tie into, inspect, enlarge, repair, replace, alter, clear trees and other obstructions, and remove, one or more above and/or below ground pipelines, whether permanent or temporary, with fittings and appliances, for the transportation of potable and non-potable fresh water, produced water, completion backflow water, oil, gas and other liquid or gaseous products/substances to and from wells drilled, or to be drilled, on or off the Lands and the Surface Owner is agreeable to the same on the terms and conditions set out in the Agreement.

The Agreement also grants unto Company, Surface Owner's consent to and an easement for the drilling, production, and operation of shallow and deep horizontal or vertical oil and gas wells at any legal location(s) upon the surface of the Lands pursuant to W. Va. Code §§ 22-6A and 22C-9-7(b)(4) and applicable regulations.

The Agreement, with all of its terms, covenants and other provisions, is referred to and incorporated into this Memorandum for all purposes. This Memorandum is placed of record for the purpose of giving notice of the Agreement. Nothing contained in this Memorandum will alter or amend any of the terms and provisions of the Agreement. In the event of any conflict between this Memorandum and the Agreement, the terms and conditions of the Agreement shall control.

IN WITNESS WHEREOF this Memorandum of Surface Use Agreement is executed as of the date first above written.

Surface Owner. (Menler) Huggin

Charles Lee Huggins

Betty Jean Hungins

Company: TH EXPLORATION, LLC

Name: Benjamin J. Irwin

Title: Attorney-in-Fact

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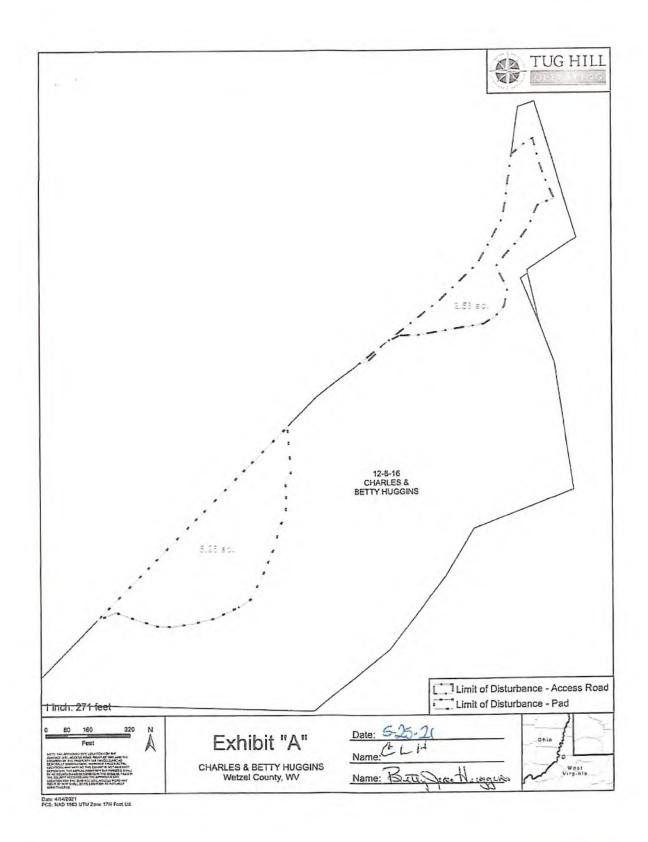
TH/WW MEMO SUA 2.1

#### ACKNOWLEDGEMENT

| STATE OF WEST VIRGINIA  | )  |   |
|---|--|---|
| COUNTY OF WETZEL  | ) SS:<br>)   |   |
| On this the 25 day of 100 day of | subscribed to the within instrument,<br>the purposes therein contained.  |   |
| My Commission Expires Agranta 20 Signature: Notar   | y Public   |   |
| Name/Notary Public (print): 19,6ch Forthe-  | OFFICIA  | L SEAL                                      |
| ACKNOWLEDGEME   | NT NOTARY STATE OF WE MICAH FE   | PUBLIC<br>ST VIRGINIA<br>FATHER<br>IX 132 F |
| STATE OF WEST VIRGINIA  | ) SS:  | WV again                                    |
| COUNTY OF WETZEL  | ) 55.  |   |
| On this the 15 day of 16, 202 undersigned authority, personally appeared Betty satisfactorily proven) to be the person whose name is and acknowledged that he/she executed the same for IN WITNESS WHEREOF, I hereunto set m  | subscribed to the within instrument,<br>the purposes therein contained.  |   |
| My Commission Expires Signature: 7  | ry Public  |   |
| Name/Notary Public (print): Mean Franke   |  | ובשבשה                                      |
| ACKNOWLEDGEME   | OFFICIAL NOTARY; STATE OF WES NICAH FF RC71 E.O. RC71 E. | PUBLIC IT VIRGINIA ATHER XT32 E WY 25257    |
| COMMONWEALTH OF PENNSYLVANIA  | )<br>) SS:   | 1122  |
| COUNTY OF WASHINGTON  | j  |   |
| On this, the start day of   | DN, LLC, a Texas limited liability<br>authorized to do so, executed the<br>ed by signing the name of the   |   |
| IN WITNESS WHEREOF, I hereunto set m  | ny hand and official seal.   |   |
| My Commission Expires: 2/6/24 Signature:  | Notary Public  |   |
| Name/Notary Public (print): DAM G. DELtu  | Commonwealth of Pennsylvania - Notary Seal David Gabriel Delallo, Notary Public Washington County My commission expires February 16, 2024  |   |
| Prepared by and please return to:<br>TH Exploration, LLC<br>1320 S. University Drive, Suite 500   | My commission number 1267492 Commission number 1267492 Member, Pennsylvania Association of Notaries  | Office of Gill and Gas                      |
| Fort Worth, TX 76107  |  | Alig. I a znoo                              |
|   |  | WV Deposition of Approx 2-8 2022 Proceeding |
|   |  |   |

TH/WW MEMO SUA 2.1

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WARMA NOSKO 198 LAND SERVICES 2000 TOWN DENTER BLUJ STE 145 CALCHSBURG PF 15517-5841

#### MEMORANDUM OF SURFACE USE AGREEMENT

This Memorandum of Surface Use Agreement ("Memorandum") made this 4 day of 2021 by and between Elnora Tuttle, by her Power-of-Attorney whose address is 6768 Proctor Creek Road, Proctor, WV 26055, (hereinafter collectively called "Surface Owner"), and TH EXPLORATION, LLC, a Texas limited liability company, with an address of 1320 S. University Drive, Suite 500, Fort Worth, TX 76107, (hereinafter called "Company").

WITNESSETH

For and in consideration of the sum of Ten Dollars (\$10.00) and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound, Surface Owner did make and execute in favor of Company a Surface Use Agreement (the "Agreement") dated 1/4, 2021 and made effective 1/4, 2021 which provides for a ten (10) year term ("Agreement Term") covering Surface Owner's interest in the following described lands (the "Lands"):

The Lands are located, all or part, in Proctor District, Wetzel County, State of West Virginia, and including lands identified as: 12-8-15, and described for the purposes of this Memorandum as containing 39.2 acres, and Lands located, all or part, in Proctor District, Wetzel County, State of West Virginia, and including all contiguous or appurtenant lands owned by Surface Owner, as described in that certain deed dated July 25, 1985 and recorded in the office of the County Clerk of the aforesaid County in Deed Book, 315-62.

The Company desires to use the portion of Land labeled as "Limit of Disturbance – Pad" and "Limit of Disturbance – Access Road" on the attached Exhibit A for the construction and installation of access roads, drilling pads, tanks, fences, pits and any other facilities or equipment necessary or convenient for the drilling, completion, production, operation, and maintenance of the Company's operations on or off the Land as well as to lay, maintain, excavate, construct, survey, re-construct, operate, tie into, inspect, enlarge, repair, replace, alter, clear trees and other obstructions, and remove, one or more above and/or below ground pipellnes, whether permanent or temporary, with fittings and appliances, for the transportation of potable and non-potable fresh water, produced water, completion backflow water, oil, gas and other liquid or gaseous products/substances to and from wells drilled, or to be drilled, on or off the Lands and the Surface Owner is agreeable to the same on the terms and conditions set out in the Agreement.

The Agreement also grants unto Company, Surface Owner's consent to and an easement for the drilling, production, and operation of shallow and deep horizontal or vertical oil and gas wells at any legal location(s) upon the surface of the Lands pursuant to W. Va. Code §§ 22-6A and 22C-9-7(b)(4) and applicable regulations.

The Agreement, with all of its terms, covenants and other provisions, is referred to and incorporated into this Memorandum for all purposes. This Memorandum is placed of record for the purpose of giving notice of the Agreement. Nothing contained in this Memorandum will alter or amend any of the terms and provisions of the Agreement. In the event of any conflict between this Memorandum and the Agreement, the terms and conditions of the Agreement shall control.

IN WITNESS WHEREOF this Memorandum of Surface Use Agreement is executed as of the date first above written.

Surface Owners

Sandra Murriner
Power-of-Attorney

Company: TH EXPLORATION, LLC

Name: Benjamin J. Irwin

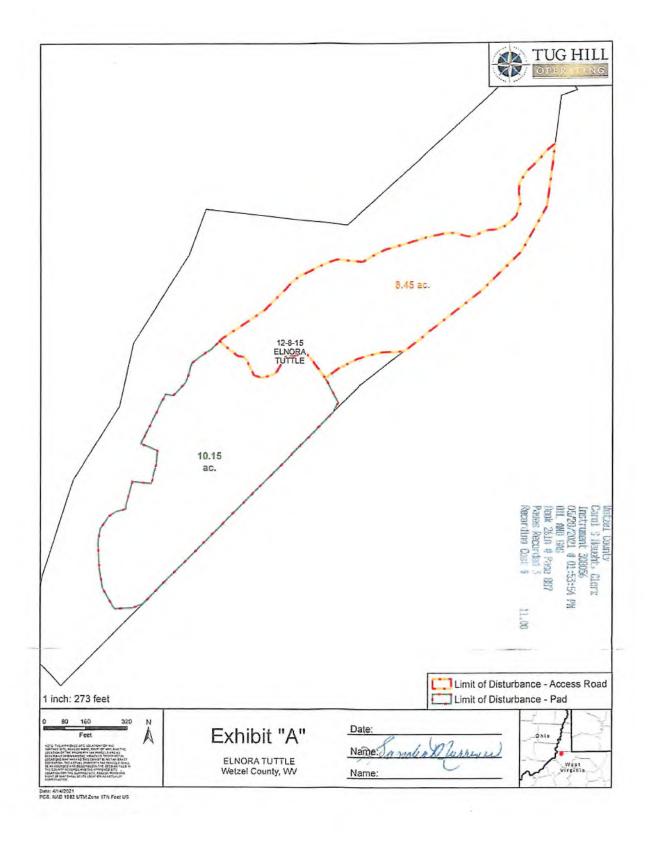
Title: Attorney-in-Fact

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W Uppartment of Environmental Protection RECEIVED Office of Oil and Gas

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WV Department of Environmental Protection

## Operators within 500' of Well Borehole Elmer N-15HU

| COUNTY                                  | DISTRICT  | TMP       | MINERAL OWNER OR LESSEE      | ADDRESS                               |
|---|-----------|-----------|------------------------------|---------------------------------------|
|   |           |           |                              | 1320 S. University Blvd               |
|   |           |           |                              | Suite 500                             |
| WETZEL                                  | PROCTOR   | 12-2-13   | TH EXPLORATION LLC           | Fort Worth, TX 76107                  |
|   |           |           |                              | 1320 S. University Blvd               |
|   |           |           |                              | Suite 500                             |
| WETZEL                                  | PROCTOR   | 12-2-13   | TH EXPLORATION LLC           | Fort Worth, TX 76107                  |
| WEIGH                                   |           |           |                              | 1320 S. University Blvd               |
|   |           |           |                              | Suite 500                             |
| \ <u>\</u>                              | PROCTOR   | 12-2-13   | TH EXPLORATION LLC           | Fort Worth, TX 76107                  |
| WETZEL                                  | PROCION   | 12-2-13   | III EXPLORATION LLC          | 1320 S. University Blvd               |
|   |           |           |                              | Suite 500                             |
|   |           | 1         |                              |                                       |
| WETZEL                                  | PROCTOR   | 12-2-14   | TH EXPLORATION LLC           | Fort Worth, TX 76107                  |
|   |           |           |                              | 1320 S. University Blvd               |
|   |           |           |                              | Suite 500                             |
| WETZEL                                  | PROCTOR   | 12-2-14.2 | TH EXPLORATION LLC           | Fort Worth, TX 76107                  |
|   |           |           |                              | 1320 S. University Blvd               |
|   |           |           |                              | Suite 500                             |
| WETZEL                                  | PROCTOR   | 12-2-19   | TH EXPLORATION LLC           | Fort Worth, TX 76107                  |
| *************************************** |           |           |                              | 625 Liberty Avenue                    |
|   |           |           |                              | Suite 1700                            |
| \A/ET7E1                                | PROCTOR   | 12 2 22 1 | EQT PRODUCTION COMPANY       | Pittsburgh, PA 15222                  |
| WETZEL                                  | PROCTOR   | 12-2-22.1 | EQT PRODUCTION COMPANT       | 1320 S. University Blvd               |
|   |           | <br>      |                              | · · · · · · · · · · · · · · · · · · · |
|   |           |           |                              | Suite 500                             |
| WETZEL                                  | PROCTOR   | 12-2-23   | TH EXPLORATION LLC           | Fort Worth, TX 76107                  |
|   |           |           |                              | 1320 S. University Blvd               |
|   |           |           |                              | Suite 500                             |
| WETZEL                                  | PROCTOR   | 12-3-4.7  | TH EXPLORATION LLC           | Fort Worth, TX 76107                  |
|   |           |           |                              | 1320 S. University Blvd               |
|   |           |           | i                            | Suite 500                             |
| WETZEL                                  | PROCTOR   | 12-3-13   | TH EXPLORATION LLC           | Fort Worth, TX 76107                  |
|   |           |           |                              | 1320 S. University Blvd               |
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| WETZEL                                  | PROCTOR   | 12-2-26 1 | TH EXPLORATION LLC           | Fort Worth, TX 76107                  |
| VVETZEE                                 | PROCION   | 12-3-20.1 | THE EXPEDITATION LEE         | 1320 S. University Blvd               |
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| WETZEL                                  | PROCTOR   | 12-3-46   | TH EXPLORATION LLC           | Fort Worth, TX 76107                  |
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|   |           |           |                              | Suite 500                             |
| WETZEL                                  | PROCTOR   | 12-7-13.1 | TH EXPLORATION LLC           | Fort Worth, TX 76107                  |
|   |           |           |                              | 1320 S. University Blvd               |
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| WETZEL                                  | PROCTOR   | 12-8-1    | TH EXPLORATION LLC           | Fort Worth, TX 76107                  |
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| WETZEL                                  | PROCTOR   | 12-8-1.1  | TH EXPLORATION LLC           | Fort Worth, TX 76107                  |
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| WETZEL                                  | PROCTOR   | 12-8-2    | TH EXPLORATION LLC           | Fort Worth, TX 76107                  |
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| WETZEL                                  | PROCTOR   | 12-8-15   | TH EXPLORATION LLC           | Fort Worth, TX 76107                  |
|   |           |           |                              | 1320 S. University Bl/10/21/2022      |
|   |           |           |                              | Suite 500                             |
| WETZEL                                  | PROCTOR   | 12-8-16   | TH EXPLORATION LLC           | Fort Worth, TX 76107                  |
|   |           | <b></b>   |                              | 1320 S. University Blvd               |
|   |           |           |                              | Suite 500                             |
| WETZEL                                  | PROCTOR   | 12-8-20   | TH EXPLORATION LLC           | Fort Worth, TX 76107                  |
| L WEIZEL                                | INOCION   | 12-0-20   | THE EXITONATION LEC          | OIC 440101, 17, 70107                 |

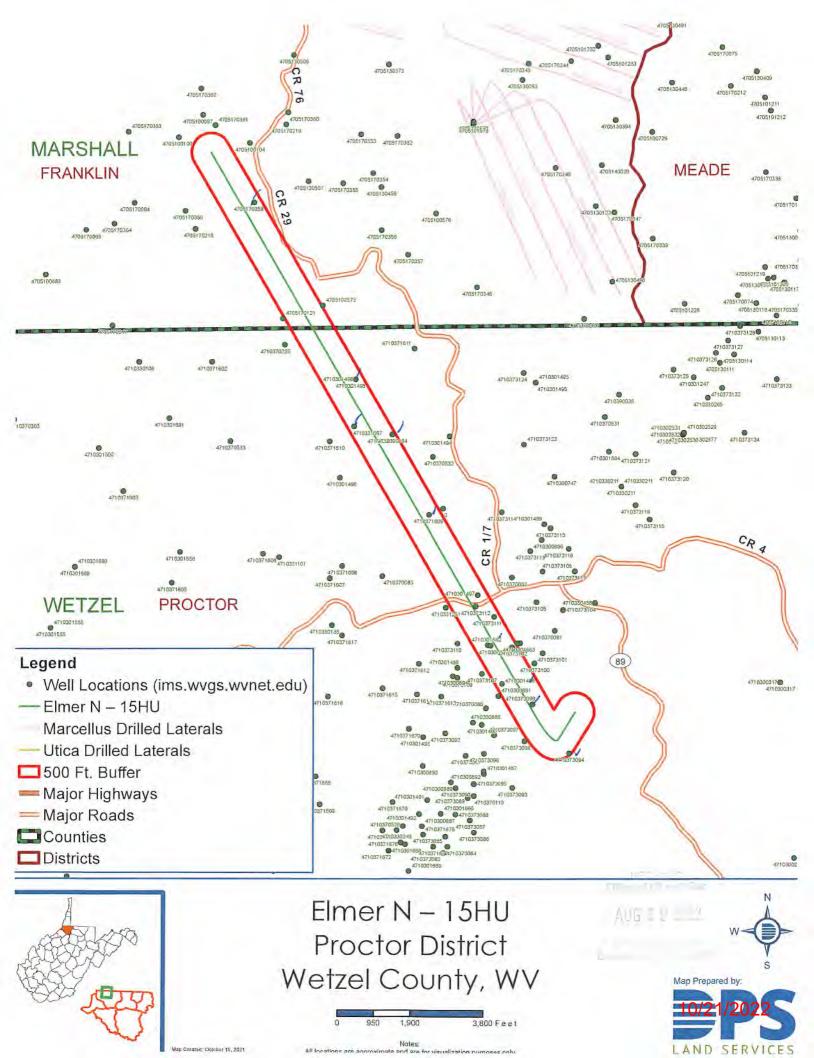
## Operators within 500' of Well Borehole Elmer N-15HU

| 14/57751   | PROCTOR         | 12-8-20      | EQUINOR USA ONSHORE PROPERTIES INC | 6300 Bridge Point Pkwy<br>Building 2, Ste 100<br>Austin, TX 78730 |
|--|-----------------|--------------|------------------------------------|---|
| WETZEL   | PROCTOR         | 12-6-20      | PROPERTIES INC.                    | 1320 S. University Blvd<br>Suite 500                              |
| MARCHALL   | FRANKLIN        | 5-23-9.2     | TH EXPLORATION LLC                 | Fort Worth, TX 76107  |
| MARSHALL   | FRANKLIN        | 5-23-9.2     | TH EXPLORATION LLC                 | 1320 S. University Blvd   |
| 8  |                 |              |                                    | Suite 500   |
| MARSHALL   | FRANKLIN        | 5-23-9.3     | TH EXPLORATION LLC                 | Fort Worth, TX 76107  |
| MANJHALL   | TRAINCHI        | 3-23-3.3     | THE EGNATION LEC                   | 1320 S. University Blvd   |
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| MARSHALL   | FRANKLIN        | 5-23-11.1    | TH EXPLORATION II LLC              | Fort Worth, TX 76107  |
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| MARSHALL   | FRANKLIN        | 5-23-11.1    | TH EXPLORATION LLC                 | Fort Worth, TX 76107  |
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| MARSHALL   | FRANKLIN        | 5-23-11.3    | TH EXPLORATION II LLC              | Fort Worth, TX 76107  |
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| MARSHALL   | FRANKLIN        | 5-23-11.4    | TH EXPLORATION II LLC              | Fort Worth, TX 76107  |
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| MARSHALL   | FRANKLIN        | 5-23-11.4    | TH EXPLORATION LLC                 | Fort Worth, TX 76107  |
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|  |                 |              |                                    | Suite 500   |
| MARSHALL   | FRANKLIN        | 5-23-11.5    | TH EXPLORATION LLC                 | Fort Worth, TX 76107  |
|  |                 |              |                                    | 1320 S. University Blvd   |
|  |                 |              |                                    | Suite 500   |
| MARSHALL   | FRANKLIN        | 5-23-11.5    | TH EXPLORATION II LLC              | Fort Worth, TX 76107  |
|  |                 |              |                                    | 1320 S. University Blvd   |
|  |                 |              |                                    | Suite 500   |
| MARSHALL   | FRANKLIN        | 5-23-11.8    | TH EXPLORATION II LLC              | Fort Worth, TX 76107  |
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| MARSHALL   | FRANKLIN        | 5-23-11.8    | TH EXPLORATION LLC                 | Fort Worth, TX 76107  |
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| MARSHALL   | FRANKLIN        | 5-23-13      | TH EXPLORATION LLC                 | Fort Worth, TX 76107  |
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| MARSHALL   | FRANKLIN        | 5-23-13      | TH EXPLORATION II LLC              | Fort Worth, TX 76107  |
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## Operators within 500' of Well Borehole Elmer N-15HU

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| MARSHALL           | FRANKLIN      | 5-25-15       | TH EXPLORATION LLC       | Fort Worth, TX 76107    |
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| MARSHALL           | FRANKLIN      | 5-25-16       | TH EXPLORATION LLC       | Fort Worth, TX 76107    |
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| MARSHALL           | FRANKLIN      | 5-25-16.2     | TH EXPLORATION LLC       | Fort Worth, TX 76107    |
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10/21/2022



#### 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. Enverus and RS Energy Group 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 Adam Picard 724-485-9331, <u>apicard@dpslandservices.com</u>, DPS GIS (10/15/2021) to have him make maps of the wellbores with his information. DPS utilizes WVGES maps for their mapping seems it is the best publicly available. See attached map he provided.

#### Request maps for:

- 1. Wellbore with Enverus 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

AUG I W V Y

#### Wells within 500' Buffer

Note: Well spots depicted on Area of Review map are derived from State held coordinates. The spots may differ from those depicted on the Well Plat because the Plat locations represent actual field surveyed locations. Please refer to the Plat for surveyed well spots.

| API Number | Operator<br>Name          | Total Depth | Perforated<br>Fms | Producing<br>zones not<br>perforated | Is this well "known or reasonably expected<br>to penetrate a depth that could be within<br>the range of Fracture propagation"? 1000' is<br>max limit I would assign to wells that might<br>be within in range of fracture propagation | Comments                      |
|------------|---------------------------|-------------|-------------------|--------------------------------------|---|-------------------------------|
| 4710373094 | unknown                   | unknown     | unknown           | unknown                              | Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Point Pleasant well.   | State records are incomplete. |
| 4710373099 | unknown                   | unknown     | unknown           | unknown                              | Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Point Pleasant well.   | State records are incomplete. |
| 4710301486 | Perkins Oil and Gas, Inc. | unknown     | unknown           | unknown                              | Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Point Pleasant well.   | State records are incomplete. |
| 4710301662 | Perkins Oil and Gas, Inc. | unknown     | unknown           | unknown                              | Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Point Pleasant well.   | State records are incomplete. |



| API Number | PI Number Operator To        |           | Total Denth     zone |         | Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation | Comments                      |
|------------|------------------------------|-----------|----------------------|---------|---|-------------------------------|
| 4710373102 | unknown                      | unknown   | unknown              | unknown | Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Point Pleasant well.   | State records are incomplete. |
| 4710300895 | Perkins Oil<br>and Gas, Inc. | unknown   | unknown              | unknown | Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Point Pleasant well.   | State records are incomplete. |
| 4710301497 | Perkins Oil<br>and Gas, Inc. | 2984' TVD | Gordon               | unknown | No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation.   |                               |
| 4710373111 | unknown                      | unknown   | unknown              | unknown | Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Point Pleasant well.   | State records are incomplete. |
| 4710373112 | Hope Natural<br>Gas Company  | unknown   | unknown              | unknown | Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Point Pleasant well.   | State records are incomplete. |



AUG 1 9 2022



| API Number | Operator<br>Name                     | '   Total Denth |         |         | Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation | Comments                      |
|------------|--------------------------------------|-----------------|---------|---------|---|-------------------------------|
| 4710371609 | Hope Natural<br>Gas Company          | unknown         | unknown | unknown | Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Point Pleasant well.   | State records are incomplete. |
| 4710300184 | Manufacturers<br>Light & Heat<br>Co. | 2107' TVD       | Maxton  | unknown | No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Well is plugged.  | Well was plugged 9/12/1938.   |
| 4710301498 | Perkins Oil<br>and Gas, Inc.         | unknown         | Gordon  | unknown | Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Point Pleasant well.   |                               |
| 4710331097 | Hope Natural<br>Gas Company          | unknown         | Gordon  | unkown  | No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Well is plugged.  | Well was plugged 10/7/1959.   |
| 4705170358 | unknown                              | unknown         | unknown | unknown | Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Point Pleasant well.   | State records are incomplete. |



Well: County = 103 Permit = 73094

Report Time: Tuesday, October 19, 2021 1:56:42 PM

Location Information: View Map

API COUNTY PERMIT TAX\_DISTRICT QUAD\_75 QUAD\_15 LAT\_DD LON\_DD UTME UTMN 4710373094 Wetzel 73094 Proctor Wileyville Littleton 39.690995 -80.738175 522449.7 4393494.4

There is no Bottom Hole Location data for this well

Owner Information:

API CMP\_DT SUFFIX STATUS SURFACE\_OWNER WELL\_NUM CO\_NUM LEASE LEASE\_NUM MINERAL\_OWN OPERATOR\_AT\_COMPLETION PROP\_VD PROP\_TRGT\_FM TFM\_EST\_PR
4710373094 -/-/- unknown Prpty Map Rachel M Veater 1 -------- unknown ----------

Completion Information:

API CMP\_DT SPUD\_DT ELEV DATUM FIELD DEEPEST\_FM DEEPEST\_FMT INITIAL\_CLASS FINAL\_CLASS TYPE RIG CMP\_MTHD TVD TMD NEW\_FTG KOD G\_BEF G\_AFT O\_BEF O\_AFT NGL unclassified unclassifi

WV Geological & Economic Survey:

Well: County = 103 Permit = 73099

Report Time: Tuesday, October 19, 2021 1:57:02 PM

Location Information: View Map

API COUNTY PERMIT TAX\_DISTRICT QUAD\_75 QUAD\_15 LAT\_DD LON\_DD UTME UTMN 4710373099 Welzel 73099 Proctor Wileyville Littleton 39.694479 -80.741554 522158.9 4393880.2

There is no Bottom Hole Location data for this well

Owner Information:

API CMP\_DT\_SUFFIX\_STATUS\_SURFACE\_OWNER\_WELL\_NUM\_CO\_NUM\_LEASE\_LEASE\_NUM\_MINERAL\_OWN\_OPERATOR\_AT\_COMPLETION\_PROP\_VD\_PROP\_TRGT\_FM\_TFM\_EST\_PR
4710373099 -/-/- unknown Prpty Map Nancy J Garner 10 -------- unknown -----------

Completion Information:

API CMP\_DT SPUD\_DT ELEV DATUM FIELD DEEPEST\_FM DEEPEST\_FMT INITIAL\_CLASS FINAL\_CLASS TYPE RIG CMP\_MTHD TVD TMD NEW\_FTG KOD G\_BEF G\_AFT O\_BEF O\_AFT NGL 4710373099 -1-1- -1-1- unclassified 
WV Geological & Economic Survey:

Well: County = 103 Permit = 01486

Report Time: Tuesday, October 19, 2021 1:57:18 PM

Location Information: View Map

API COUNTY PERMIT TAX\_DISTRICT QUAD\_75 QUAD\_15 LAT\_DD LON\_DD UTME UTMN 4710301486 Wetzel 1486 Proctor Wileyville Littleton 39.695941 -80.744374 521916.6 4394041.8

There is no Bottom Hole Location data for this well

Owner Information:

API CMP\_DT SUFFIX STATUS SURFACE\_OWNER WELL\_NUM CO\_NUM LEASE LEASE\_NUM MINERAL\_OWN OPERATOR\_AT\_COMPLETION PROP\_VD PROP\_TRGT\_FM TFM\_EST\_PR
4710301486 -/-/- Original Loc Completed Gamer Hrs 1

Perkins Oil and Gas, Inc.

Completion Information:

API CMP\_DT SPUD\_DT ELEV DATUM FIELD DEEPEST\_FM DEEPEST\_FM INITIAL\_CLASS FINAL\_CLASS TYPE RIG CMP\_MTHD TVD TMD NEW\_FTG KOD G\_BEF G\_AFT O\_BEF O\_AFT NGL\_4710301486 -/-- -/-- -/--- unclassified unclassifi

AUG | p = \_ |

Well: County = 103 Permit = 01662

Report Time: Tuesday, October 19, 2021 1:57:30 PM

Location Information: View Map

API COUNTY PERMIT TAX\_DISTRICT QUAD\_75 QUAD\_15 LAT\_DD LON\_DD UTME UTMN 4710301662 Wetzel 1662 Proctor Wileyville Littleton 39.698696 -80.745689 521803 4394347.2

There is no Bottom Hole Location data for this well

Owner Information:

API CMP\_DT SUFFIX STATUS SURFACE\_OWNER WELL\_NUM CO\_NUM LEASE LEASE\_NUM MINERAL\_OWN OPERATOR\_AT\_COMPLETION PROP\_VD PROP\_TRGT\_FM TFM\_EST\_PR 4710301662 4-4- Original Loc Completed Al & Henry Garner 12 Perkins Oil and Gas, Inc.

Completion Information:

API CMP\_DT SPUD\_DT ELEV DATUM FIELD DEEPEST\_FM DEEPEST\_FMT INITIAL\_CLASS FINAL\_CLASS TYPE RIG CMP\_MTHD TVD TMD NEW\_FTG KOD G\_BEF G\_AFT O\_BEF O\_AF 4710301662 4-4- 4-4- 1210 Topo Estimation unclassified unclassified not available unknown unknown

WV Geological & Economic Survey:

Well: County = 103 Permit = 73102

Report Time: Tuesday, October 19, 2021 1:58:39 PM

Location Information: View Map

| API | COUNTY PERMIT TAX\_DISTRICT | QUAD\_75 | QUAD\_15 | LAT\_DD | LON\_DD | UTME | UTMN | 4710373102 | Wetzel | 73102 | Proctor | Wileyville | Littleton | 39.698542 | -80.74343 | 521996.7 | 4394330.7 |

There is no Bottom Hole Location data for this well

Owner Information:

API CMP\_DT SUFFIX STATUS SURFACE\_OWNER WELL\_NUM CO\_NUM LEASE LEASE\_NUM MINERAL\_OWN OPERATOR\_AT\_COMPLETION PROP\_VD PROP\_TRGT\_FM TFM\_EST\_PR
4710373102 -/-/- unknown Prpty Map Nancy J Garner 8

Completion Information:



Well: County = 103 Permit = 00895

Report Time: Tuesday, October 19, 2021 1:58:50 PM

Location Information: View Map

COUNTY PERMIT TAX DISTRICT QUAD 75 QUAD 15 LAT DD LON DD UTME UTMN 4710300895 Wetzel 895 unknown unknown unknown

There is no Bottom Hole Location data for this well

Owner Information:

CMP\_DT\_SUFFIX STATUS SURFACE\_OWNER WELL\_NUM\_CO\_NUM\_LEASE\_LEASE\_NUM\_MINERAL\_OWN\_OPERATOR\_AT\_COMPLETION\_PROP\_VD\_PROP\_TRGT\_FM\_TFM\_EST\_PR 4710300895 -/-/- Original Loc Completed Albert & Henry Garner Perkins Oil and Gas, Inc.

0

n

111 114 119

0

122 112 112

0

9

Completion Information:

CMP\_DT\_SPUD\_DT\_ELEV\_DATUM\_FIELD DEEPEST\_FM\_DEEPEST\_FMT\_INITIAL\_CLASS\_FINAL\_CLASS\_TYPE CMP MTHD TVD TMD NEW FTG KOD G BEF G AFT O BEF O AF RIG unclassified unclassified not available unknown unknown 0

There is no Pay data for this well

4710300895 Perkins Oil and Gas, Inc.

4710300895 Perkins Oil and Gas, Inc.

4710300895 Perkins Oil and Gas, Inc.

Production Gas Information: (Volumes in Mcf)

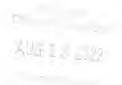
PRODUCING\_OPERATOR PRD\_YEAR ANN\_GAS JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DCM 4710300895 Perkins Oil and Gas, Inc. 186 0 0 0 0 0 0 0 0 0 0 186 4710300895 Perkins Oil and Gas. Inc. 978 178 259 1997 0 0 251 50 0 4710300895 Perkins Oil and Gas, Inc. 1998 0 27 205 112 220 222 220 0 0 0 4710300895 Perkins Oil and Gas, Inc. 2,382 319 188 280 200 187 47 123 215 219 186 1999 2,200 189 160 4710300895 Perkins Oil and Gas. Inc. 199 178 194 153 203 204 182 169 2001 4710300895 Perkins Oil and Gas, Inc. 155 119 162 132 159 2002 1.819 201 159 143 158 184 163 159 155 175 166 177 4710300895 Perkins Oil and Gas, Inc. 2003 1,651 122 109 163 162 159 102 4710300895 Perkins Oil and Gas. Inc. 2004 1,827 149 142 169 170 142 154 171 131 150 154 4710300895 Perkins Oil and Gas. Inc. 2005 1,589 141 118 107 137 140 139 83 147 143 135 4710300895 Perkins Oil and Gas. Inc. 1.518 123 90 141 113 136 113 141 143 135 138 2006 4710300895 Perkins Oil and Gas, Inc. 2007 1.535 128 98 122 126 137 133 117 140 136 143 123 4710300895 Perkins Oil and Gas, Inc. 2008 1,441 124 111 113 87 95 135 140 140 105 139 123 4710300895 Perkins Oil and Gas. Inc. 107 107 1.366 107 127 129 128 133 2009 117 136 146 125 4710300895 Perkins Oil and Gas, Inc. 2010 4710300895 Perkins Oil and Gas. Inc. 2011 0 0 0 4710300895 Perkins Oil and Gas. Inc. 2012 0 0 4710300895 Perkins Oil and Gas. Inc. 2013 4710300895 Perkins Oil and Gas. Inc. 2014 0 0 4710300895 Perkins Oil and Gas, Inc. 2015 4710300895 Perkins Oil and Gas. Inc. 2016 0 0 0 1 0 0 4710300895 Perkins Oil and Gas, Inc. 2017 0 0 0 0

0

98

2 0 0 0 0

12 0



2018

2019

Well: County = 103 Permit = 01497

Report Time: Tuesday, October 19, 2021 1:59:23 PM

Location Information: View Map

API COUNTY PERMIT TAX\_DISTRICT QUAD\_75 QUAD\_16 LAT\_DD LON\_DD UTME UTMN 4710301497 Wetzel 1497 Proctor Wileyville Littleton 39.703626 -80.746443 521736.9 4394894.2

There is no Bottom Hole Location data for this well

Owner Information:

API CMP\_DT SUFFIX STATUS SURFACE\_OWNER WELL\_NUM CO\_NUM LEASE LEASE\_NUM MINERAL\_OWN OPERATOR\_AT\_COMPLETION PROP\_VD PROP\_TRGT\_FM TFM\_EST\_PR
4710301497 9/7/1900 Original Loc Completed Henry Garner 87 681 Hope Natural Gas Company

Completion Information:

API CMP\_DT SPUD\_DT ELEV DATUM FIELD DEEPEST\_FM DEEPEST\_FMT INITIAL\_CLASS FINAL\_CLASS TYPE RIG CMP\_MTHD TVD TMD NEW\_FTG KOD G\_BEF G\_AFT O\_BEF O\_4710301497 9/7/1900 -/-/- 1286 Spirit Level Lynn Camp Gordon Gordon Development Well Development Well Gas Cable Tool Nat/Open H 2984 2984 6249 0 0

Pay/Show/Water Information:

API CMP\_DT ACTIVITY PRODUCT SECTION DEPTH\_TOP FM\_TOP DEPTH\_BOT FM\_BOT G\_BEF G\_AFT O\_BEF O\_AFT WATER\_QNTY 4710301497 9/7/1900 Pay Gas Vertical Gordon 0 Gordon 0 0

Production Gas Information: (Volumes in Mcf)

| API        | PRODUCING_OPERATOR        | PRD YEAR | ANN GAS | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV   | DCM |
|------------|---------------------------|----------|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|-----|
| 4710301497 | Perkins Oil and Gas. Inc. | 1990     | - 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0     | 0   |
| 4710301497 | Perkins Oil and Gas, Inc. | 1991     |         |     |     |     |     |     |     |     |     |     |     |       |     |
| 4710301497 | Perkins Oil and Gas, Inc. | 1996     | 186     | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0     | 186 |
| 4710301497 | Perkins Oil and Gas, Inc. | 1997     | 978     | 178 | 259 | 0   | 0   | 251 | 50  | 0   | 0   | 0   | 59  | 181   | 0   |
| 4710301497 | Perkins Oil and Gas, Inc. | 1998     | 1,436   | 0   | 0   | 0   | 0   | 27  | 205 | 112 | 220 | 222 | 220 | 204   | 226 |
| 4710301497 | Perkins Oil and Gas, Inc. | 1999     | 2,382   | 319 | 188 | 280 | 200 | 187 | 47  | 123 | 215 | 219 | 186 | 220   | 198 |
| 4710301497 | Perkins Oil and Gas, Inc. | 2001     | 2,200   | 189 | 160 | 199 | 178 | 194 | 153 | 203 | 204 | 182 | 169 | 226   | 143 |
| 4710301497 | Perkins Oil and Gas, Inc. | 2002     | 1,819   | 155 | 119 | 201 | 159 | 143 | 158 | 184 | 162 | 132 | 159 | 84    | 163 |
| 4710301497 | Perkins Oil and Gas, Inc. | 2003     | 1,651   | 122 | 109 | 163 | 162 | 159 | 155 | 175 | 166 | 177 | 159 | 2     | 102 |
| 4710301497 | Perkins Oil and Gas, Inc. | 2004     | 1,827   | 149 | 142 | 169 | 170 | 142 | 154 | 171 | 131 | 150 | 154 | 156   | 139 |
| 4710301497 | Perkins Oil and Gas, Inc. | 2005     | 1,589   | 141 | 118 | 107 | 137 | 140 | 139 | 83  | 147 | 143 | 135 | 159   | 140 |
| 4710301497 | Perkins Oil and Gas, Inc. | 2006     | 1,538   | 123 | 90  | 141 | 113 | 136 | 133 | 141 | 143 | 135 | 138 | 125   | 120 |
|            | Perkins Oil and Gas, Inc. | 2007     | 1.535   | 128 | 98  | 122 | 126 | 137 | 133 | 117 | 140 | 136 | 143 | 132   | 123 |
| 4710301497 | Perkins Oil and Gas, Inc. | 2008     | 1.441   | 124 | 111 | 113 | 87  | 95  | 135 | 140 | 140 | 105 | 139 | 129   | 123 |
| 4710301497 | Perkins Oil and Gas, Inc. | 2009     | 1,366   | 107 | 107 | 117 | 107 | 127 | 129 | 128 | 136 | 4   | 133 | 146   | 125 |
| 4710301497 | Perkins Oil and Gas, Inc. | 2010     | 1,485   | 143 | 127 | 169 | 61  | 77  | 77  | 66  | 64  | 44  | 269 | 275   | 113 |
| 4710301497 | Perkins Oil and Gas, Inc. | 2011     | 1.453   | 59  | 76  | 209 | 131 | 40  | 14  | 9   | 7   | 17  | 306 | 291   | 294 |
| 4710301497 | Perkins Oil and Gas, Inc. | 2012     | 3,060   | 230 | 105 | 1   | 149 | 292 | 252 | 337 | 317 | 326 | 375 | 346   | 330 |
| 4710301497 | Perkins Oil and Gas, Inc. | 2013     | 3,248   | 233 | 0   | 0   | 247 | 363 | 289 | 366 | 366 | 330 | 397 | 343   | 314 |
| 4710301497 | Perkins Oil and Gas, Inc. | 2014     | 35      | 35  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0     | 0   |
| 4710301497 | Perkins Oil and Gas, Inc. | 2015     | 1,215   | 0   | 0   | 41  | 277 | 0   | 0   | 0   | 0   | 282 | 310 | 0     | 305 |
| 4710301497 | Perkins Oil and Gas, Inc. | 2016     | 4,863   | 311 | 298 | 306 | 288 | 286 | 318 | 297 | 310 | 486 | 338 | 707   | 916 |
| 4710301497 | Perkins Oil and Gas, Inc. | 2017     | 9,690   | 960 | 674 | 598 | 800 | 800 | 708 | 808 | 794 | 810 | 704 | 1.164 |     |
| 4710301497 | Perkins Oil and Gas, Inc. | 2018     | 3,515   | 247 | 220 | 398 | 191 | 225 | 287 | 285 | 260 | 291 | 242 | 404   | 465 |
| 4710301497 | Perkins Oil and Gas, Inc. | 2019     | 2,587   | 295 | 0   | 0   | 0   | 415 | 347 | 340 | 325 | 344 | 337 | 184   | 0   |
| 4710301497 | Perkins Oil and Gas. Inc. | 2020     | 1,295   | 98  | 92  | 113 | 108 | 111 | 114 | 119 | 122 | 112 | 112 | 95    | 99  |



Well: County = 103 Permit = 73111

Report Time: Tuesday, October 19, 2021 1:59:52 PM

Location Information: View Map

API COUNTY PERMIT TAX\_DISTRICT QUAD\_75 QUAD\_15 LAT\_DD LON\_DD UTME UTMN 4710373111 Wetzel 73111 Proctor Wileyville Littleton 39.700719 -80.745119 521851.2 4394571.9

There is no Bottom Hole Location data for this well

Owner Information:

API CMP\_DT SUFFIX STATUS SURFACE\_OWNER WELL\_NUM CO\_NUM LEASE LEASE\_NUM MINERAL\_OWN OPERATOR\_AT\_COMPLETION PROP\_VD PROP\_TRGT\_FM TFM\_EST\_PR
4710373111 -/-- unknown Prpty Map Henry Garner 20

Completion Information:

WV Geological & Economic Survey:

Well: County = 103 Permit = 73112

Report Time: Tuesday, October 19, 2021 2:00:09 PM

Location Information: View Map

API COUNTY PERMIT TAX\_DISTRICT QUAD\_75 QUAD\_15 LAT\_DD LON\_DD UTME UTMN 4710373112 Wetzel 73112 Proctor Wileyville Littleton 39.701445 -80.746809 521706.1 4394652

There is no Bottom Hole Location data for this well

Owner Information:

API CMP\_DT SUFFIX STATUS SURFACE\_OWNER WELL\_NUM CO\_NUM LEASE LEASE\_NUM MINERAL\_OWN OPERATOR\_AT\_COMPLETION PROP\_VD PROP\_TRGT\_FM TFM\_EST\_PR
4710373112 -/-/- unknown Prpty Map Henry Garner 258 Hope Natural Gas Company

Completion Information:

API CMP\_DT SPUD\_DT ELEV DATUM FIELD DEEPEST\_FM DEEPEST\_FMT INITIAL\_CLASS FINAL\_CLASS TYPE RIG CMP\_MTHD TVD TMD NEW\_FTG KOD G\_BEF G\_AFT O\_BEF O\_AFT NGL\_4710373112 -/-/- -/-/- -/-/- -/-/- unclassified u

WV Geological & Economic Survey:

Well: County = 103 Permit = 71609

Report Time: Tuesday, October 19, 2021 2:00:21 PM

Location Information: View Map

API COUNTY PERMIT TAX\_DISTRICT QUAD\_75 QUAD\_15 LAT\_DD LON\_DD UTME UTMN 4710371609 Welzel 71609 Proctor New Martinsville New Martinsville 39.707976 -80.751128 521333.9 4395375.9

There is no Bottom Hole Location data for this well

Owner Information:

API CMP\_DT SUFFIX STATUS SURFACE\_OWNER WELL\_NUM CO\_NUM LEASE LEASE\_NUM MINERAL\_OWN OPERATOR\_AT\_COMPLETION PROP\_VD PROP\_TRGT\_FM TFM\_EST\_PR 4710371609 -/-/- unknown Prpty Map T J Cooper 299 Hope Natural Gas Company

Completion Information:

API CMP\_DT SPUD\_DT ELEV DATUM FIELD DEEPEST\_FM DEEPEST\_FMT INITIAL\_CLASS FINAL\_CLASS TYPE RIG CMP\_MTHD TVD TMD NEW\_FTG KOD G\_BEF G\_AFT O\_BEF O\_AFT NGL\_4710371609 4-4- 4-4- unclassified un

Well: County = 103 Permit = 00184

Report Time: Tuesday, October 19, 2021 2:00:34 PM

Location Information: View Map

| API        | COUNTY | PERMIT | TAX_DISTRICT | QUAD_75          | QUAD_15          | LAT_DD    | LON DD     | UTME     | UTMN      |
|------------|--------|--------|--------------|------------------|------------------|-----------|------------|----------|-----------|
| 4710300184 | Wetzel | 184    | Proctor      | New Martinsville | New Martinsville | 39.713681 | -80.754508 | 521042.4 | 4396008.2 |

There is no Bottom Hole Location data for this well

Owner Information:

| API        | CMP_DT    |              | STATUS    | SURFACE_OWNER | WELL_NUN | CO_NUM | LEASE | LEASE | NUM | MINERAL_OWN  | OPERATOR_AT_COMPLETION                              | PROP_VD | PROP_TRG | T_FM_TFM_ES |
|------------|-----------|--------------|-----------|---------------|----------|--------|-------|-------|-----|--|---|---------|----------|-------------|
|            |           | Original Loc | Completed | Barbara Ebert |          |        |       |       |     |  | Oper in Min.owner fld,no code assgn(Orphan well pro | )       |          |             |
| 4710300184 | 3/17/1954 | Worked Over  | Completed | J Ebert       |          | 4262   |       |       |     | Contract of the contract of th | Manufacturers Light & Heat Co.                      |         |          |             |

Completion Information:

|            | CMP_DT    |          |      |              |               |        | FM DEEPEST_FMT | INITIAL_CLASS      | FINAL_CLASS  | TYPE    | RIG     | CMP_MTHD   | TVD TA | ID NEW_FTG | KOD G_BEF | G_AFT O | BEF |
|------------|-----------|----------|------|--------------|---------------|--------|----------------|--------------------|--------------|---------|---------|------------|--------|------------|-----------|---------|-----|
|            |           |          |      |              | Cameron-Gamer |        |                | Development Well   | Unsuccessful | Dry     | unknown | Nat/Open H | 2107   | 2107       | 0         | 0       | 0   |
| 4710300184 | 3/17/1954 | 9/3/1953 | 1230 | Ground Level | Cameron-Gamer | Maxton | Maxton         | Miscellaneous Well | Unsuccessful | Storage | unknown | Nat/Open H | - 20   | 0          | 0         | 0       | 0   |

There is no Pay data for this well

There is no Production Gas data for this well

There is no Production Oil data for this well \*\* some operators may have reported NGL under Oil

There is no Production NGL data for this well \*\* some operators may have reported NGL under Oil

There is no Production Water data for this well

Stratigraphy Information:

| API        | SUFFIX       | FM                   | FM QUALITY                | DEPTH TOP | DEPTH QUALITY | THICKNESS | THICKNESS QUALITY | ELEV | DATUM        |
|------------|--------------|----------------------|---------------------------|-----------|---------------|-----------|-------------------|------|--------------|
|            |              | Sewickley coal       | Well Record               |           | Reasonable    |           | Reasonable        |      | Ground Level |
| 4710300184 | Original Loc | Pittsburgh coal      | Well Record               | 1074      | Reasonable    | 5         | Reasonable        | 1230 | Ground Level |
|            |              | Conemaugh Group      | Well Record               |           | Reasonable    | 0         | Ostnble Pick      | 1230 | Ground Level |
|            |              |                      | Past WVGES Staff Geologst | 1130      | Reasonable    | 15        | Reasonable        | 1230 | Ground Level |
|            |              | 1st Cow Rn/Moundsvle |                           |           | Reasonable    | 50        | Reasonable        | 1230 | Ground Level |
|            |              |                      | Past WVGES Staff Geologst | 1610      | Reasonable    | 30        | Reasonable        | 1230 | Ground Level |
|            |              | 1st Salt Sand        | Well Record               | 1880      | Reasonable    | 30        | Reasonable        | 1230 | Ground Level |
| 4710300184 | Original Loc | 3rd Salt Sand        | Past WVGES Staff Geologst | 2020      | Reasonable    | 20        | Reasonable        | 1230 | Ground Level |
| 4710300184 | Original Loc | Maxton               | Past WVGES Staff Geologst | 2065      | Reasonable    | 19        | Ostnble Pick      | 1230 | Ground Level |

There is no Wireline (E-Log) data for this well

Plugging Information:

API PLG\_DT DEPTH\_PBT
4710300184 9/12/1938 0

WV Geological & Economic Survey:

Well: County = 103 Permit = 01498

Report Time: Tuesday, October 19, 2021 2:00:46 PM

Location Information: View Map

There is no Bottom Hole Location data for this well

Owner Information:

| API        | CMP_DT    |                | STATUS    | SURFACE_OWNER | WELL_NUM CO_NUM I | LEASE LEASE_NUM | MINERAL_OWN | OPERATOR_AT_COMPLETION P | ROP_VD_PROP_TRGT_      | FM TFM_EST_PR |
|------------|-----------|----------------|-----------|---------------|-------------------|-----------------|-------------|--------------------------|------------------------|---------------|
|            |           |                |           | J M Parsons   | 281               | 1908            | Maria Maria | Hope Natural Gas Company | my Early croate in the | 7. 2.12-17-21 |
| 4710301498 | 4/21/1911 | Drilled Deeper | Completed | J M Parsons   | 281               | 1908            |             | Hope Natural Gas Company |                        |               |

Completion Information:

| API        | CMP_DT    |       | ELEV | DATUM        | FIELD         | DEEPEST_FM | DEEPEST_F | MT | INITIAL_CLASS    | FINAL_CLASS      | TYPE | RIG        | CMP_MTHD | TVD TMD | NEW_FTO | KOD | G_BEF | G_AFT O_B |
|------------|-----------|-------|------|--------------|---------------|------------|-----------|----|------------------|------------------|------|------------|----------|---------|---------|-----|-------|-----------|
| 4710301498 |           |       | 1290 | Spirit Level | Cameron-Gamer |            | Gordon    |    | Development Well | Development Well | Gas  | Cable Tool | unknown  |         |         | )   | 9891  | 0         |
| 4710301498 | 4/21/1911 | -1-1- | 1290 | Spirit Level | Cameron-Gamer |            | Gordon    |    | Development Well | Development Well | Gas  | unknown    | unknown  |         | -       | )   | 0     | 0         |

Pay/Show/Water Information:

API CMP\_DT ACTIVITY PRODUCT SECTION DEPTH\_TOP FM\_TOP DEPTH\_BOT FM\_BOT G\_BEF G\_AFT O\_BEF O\_AFT WATER\_QNTY 4710301498 12/2/1902 Pay Gas Vertical 2870 Gordon 2895 Gordon 9891 0

Production Gas Information: (Volumes in Mcf)

| API        | PRODUCING_OPERATOR        | PRD YEAR | ANN GAS | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DCM |
|------------|---------------------------|----------|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 4710301498 | Perkins Oil and Gas, Inc. | 1990     | - 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 4710301498 | Perkins Oil and Gas, Inc. | 1991     |         |     |     |     |     |     |     |     |     |     |     |     |     |
| 4710301498 | Perkins Oil and Gas, Inc. | 1997     | 0       | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 4710301498 | Perkins Oil and Gas, Inc. | 2002     | 1.819   | 155 | 119 | 201 | 159 | 143 | 158 | 184 | 162 | 132 | 159 | 84  | 163 |
| 4710301498 | Perkins Oil and Gas, Inc. | 2003     | 1,651   | 122 | 109 | 163 | 162 | 159 | 155 | 175 | 166 | 177 | 159 | 2   | 102 |
| 4710301498 | Perkins Oil and Gas, Inc. | 2004     | 1,827   | 149 | 142 | 169 | 170 | 142 | 154 | 171 | 131 | 150 | 154 | 156 |     |
| 4710301498 | Perkins Oil and Gas, Inc. | 2005     | 1,589   | 141 | 118 | 107 | 137 | 140 | 139 | 83  | 147 | 143 | 135 | 159 | 140 |
| 4710301498 | Perkins Oil and Gas, Inc. | 2006     | 1,538   | 123 | 90  | 141 | 113 | 136 | 133 | 141 | 143 | 135 | 138 | 125 | 120 |
| 4710301498 | Perkins Oil and Gas, Inc. | 2007     | 1,535   | 128 | 98  | 122 | 126 | 137 | 133 | 117 | 140 | 136 | 143 | 132 | 123 |
| 4710301498 | Perkins Oil and Gas, Inc. | 2008     | 1,441   | 124 | 111 | 113 | 37  | 95  | 135 | 140 | 140 | 105 | 139 | 129 | 123 |
|            | Perkins Oil and Gas, Inc. | 2009     | 1,366   | 107 | 107 | 117 | 107 | 127 | 129 | 128 | 136 | 4   | 133 | 146 | 125 |
|            | Perkins Oil and Gas, Inc. | 2010     | 3,248   | 237 | 269 | 258 | 253 | 318 | 303 | 323 | 318 | 183 | 328 | 260 | 198 |
| 4710301498 | Perkins Oil and Gas, Inc. | 2011     | 3,017   | 123 | 188 | 34  | 10  | 105 | 419 | 445 | 416 | 394 | 337 | 279 | 267 |
| 4710301498 | Perkins Oil and Gas, Inc. | 2012     | 3,316   | 279 | 238 | 284 | 233 | 270 | 266 | 312 | 348 | 309 | 333 | 226 | 218 |
| 4710301498 | Perkins Oil and Gas, Inc. | 2013     | 3,087   | 215 | 117 | 209 | 211 | 284 | 294 | 309 | 323 | 332 | 310 | 258 | 225 |
|            | Perkins Oil and Gas, Inc. | 2014     | 3,786   | 211 | 240 | 246 | 296 | 325 | 374 | 406 | 352 | 371 | 344 | 275 | 346 |
|            | Perkins Oil and Gas, Inc. | 2015     | 3,201   | 206 | 133 | 189 | 166 | 246 | 242 | 342 | 511 | 265 | 293 | 299 | 309 |
| 4710301498 | Perkins Oil and Gas, Inc. | 2016     | 2,130   | 150 | 244 | 256 | 136 | 0   | 0   | 0   | 0   | 0   | 576 | 477 | 290 |
| 4710301498 | Perkins Oil and Gas, Inc. | 2017     | 4,108   | 656 | 204 | 222 | 0   | 266 | 454 | 466 | 432 | 426 | 364 | 618 | 0   |
| 4710301498 | Perkins Oil and Gas, Inc. | 2018     | 342     | 90  | 34  | 154 | 38  | 26  | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|            | Perkins Oil and Gas, Inc. | 2019     | 2,740   | 441 | 554 | 327 | 336 | 233 | 174 | 211 | 103 | 139 | 108 | 74  | 40  |
| 4710301498 | Perkins Oil and Gas, Inc. | 2020     | 1,295   | 98  | 92  | 113 | 108 | 111 | 114 | 119 | 122 | 112 | 112 | 95  |     |

WV Geological & Economic Survey:

Well: County = 103 Permit = 31097

Report Time: Tuesday, October 19, 2021 2:01:22 PM

Emm

Report Time: Tuesday, October 19, 2021 2:02:33 PM

Location Information: View Map

API COUNTY PERMIT TAX\_DISTRICT QUAD\_75 QUAD\_15 LAT\_DD LON\_DD UTME UTMN 4710331097 Wetzel 31097 Proctor New Martinsville New Martinsville 39.714261 -80.758075 520736.5 4396071.7

There is no Bottom Hole Location data for this well

Owner Information:

API CMP\_DT SUFFIX STATUS SURFACE\_OWNER WELL\_NUM CO\_NUM LEASE LEASE\_NUM MINERAL\_OWN OPERATOR\_AT\_COMPLETION PROP\_VD PROP\_TRGT\_FM TFM\_EST\_PR
4710331097 5/15/1902 Original Loc Completed Joseph P Cooper 47 1909 Op=A M Snider Hope Natural Gas Company

Completion Information:

API CMP\_DT SPUD\_DT ELEV DATUM FIELD DEEPEST\_FM DEEPEST\_FMT INITIAL\_CLASS FINAL\_CLASS TYPE RIG CMP\_MTHD TVD TMD NEW\_FTG KOD G\_BEF G\_AFT O\_BEF O\_AFT N\_4710331097 5/15/1902 -J-J- 1090 Ground Level Unnamed Gordon Development Well unclassified Gas unknown unknown unknown 0 5291 0 0 0

There is no Pay data for this well

There is no Production Gas data for this well

There is no Production Oil data for this well \*\* some operators may have reported NGL under Oil

There is no Production NGL data for this well \*\* some operators may have reported NGL under Oil

There is no Production Water data for this well

Stratigraphy Information:

API SUFFIX FM FM\_QUALITY DEPTH\_TOP DEPTH\_QUALITY THICKNESS THICKNESS QUALITY ELEV DATUM 4710331097 Original Loc Gordon Well Record 2681 Reasonable 19 Reasonable 1090 Ground Level

There is no Wireline (E-Log) data for this well

Plugging Information:

API PLG\_DT DEPTH\_PBT 4710331097 10/7/1959 0

WV Geological & Economic Survey:

Well: County = 51 Permit = 70358

Location Information: View Map

API COUNTY PERMIT TAX\_DISTRICT QUAD\_75 QUAD\_15 LAT\_DD LON\_DD UTME UTMN 4705170358 Marshall 70358 Franklin New Martinsville New Martinsville 39.730194 -80.767268 519943.9 4397838

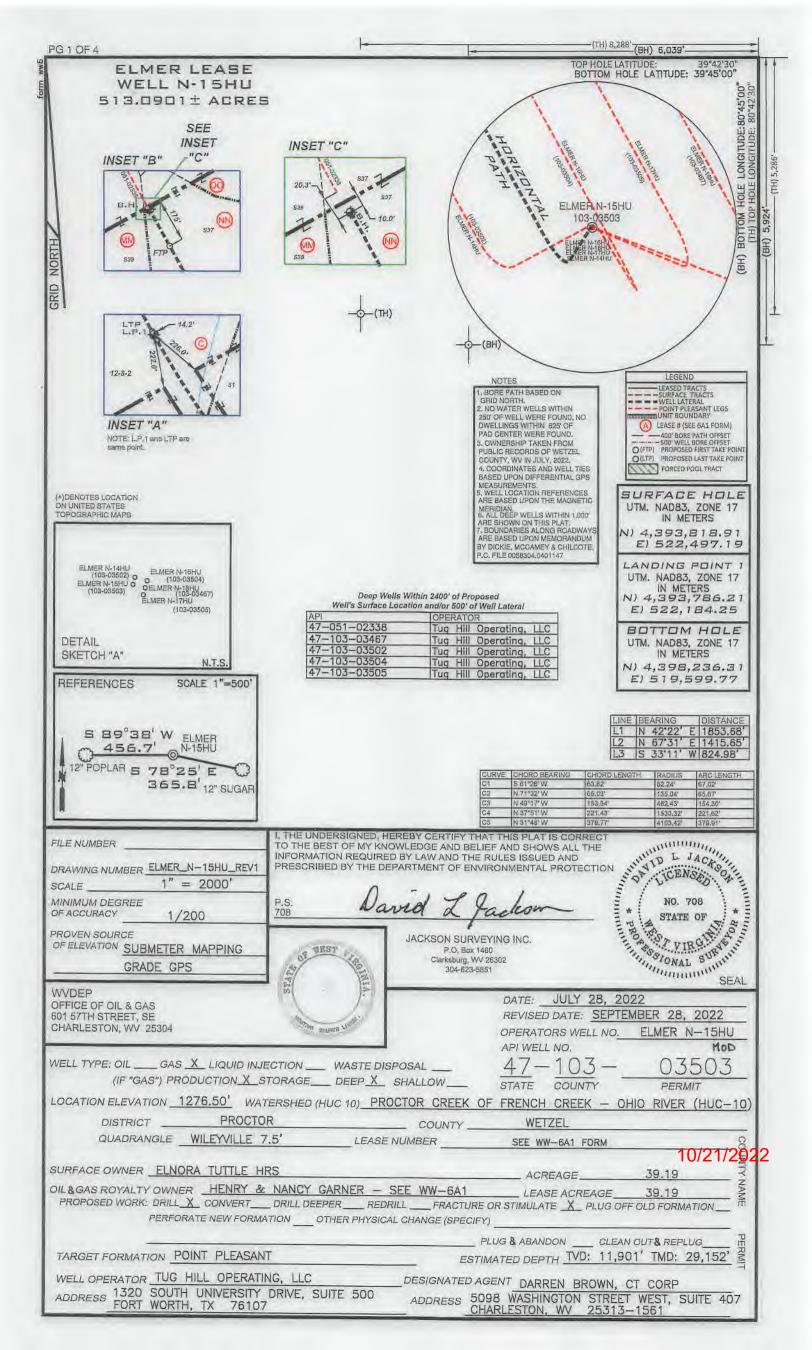
There is no Bottom Hole Location data for this well

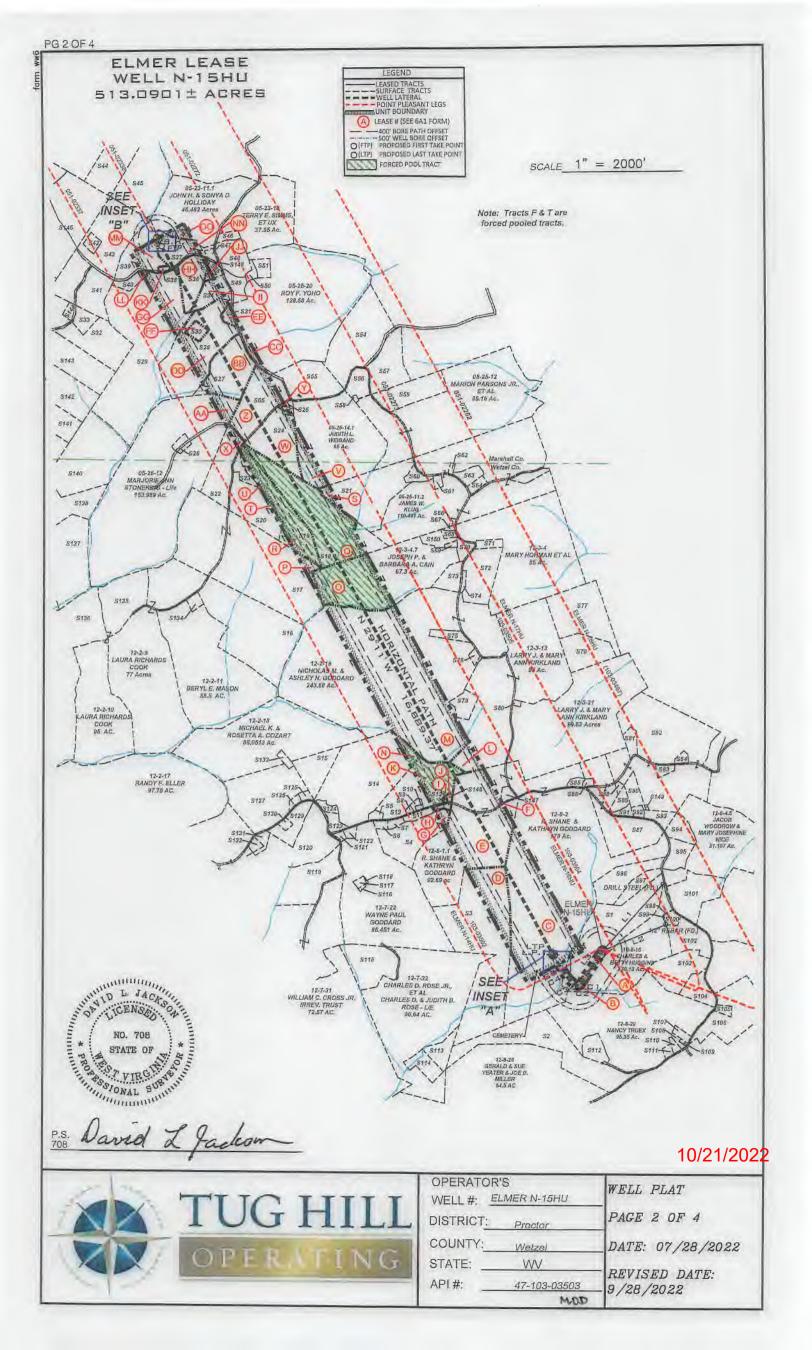
Owner Information:

API CMP\_DT SUFFIX STATUS SURFACE\_OWNER WELL\_NUM CO\_NUM LEASE LEASE\_NUM MINERAL\_OWN OPERATOR\_AT\_COMPLETION PROP\_VD PROP\_TRGT\_FM TFM\_EST\_PR 4705170358 4-4- unknown Prpty Map Timothy Yoho 5 1292 unknown unknown unknown

Completion Information:

API CMP\_DT SPUD\_DT ELEV DATUM FIELD DEEPEST\_FM DEEPEST\_FMT INITIAL\_CLASS FINAL\_CLASS TYPE RIG CMP\_MTHD TVD TMD NEW\_FTG KOD G\_BEF G\_AFT O\_BEF O\_AFT NGL 4705170358 -/-I- -/-I- unclassified 
Page 12 of 12





## ELMER LEASE WELL N-15HU 513.0901± ACRES

| Tegs | Number | Tax Map - Parcel                        | Surface Owner   | Acres  |
|------|--------|---|---|--------|
| A    | S1     | 12-8-15                                 | ELNORA TUTTLE HRS                                       | 39.19  |
|      | S2     | 12-8-20.5                               | JOE MILLER, GERALD & SUE YEATER                         | 44.85  |
| D    | S3     | 12-8-1                                  | R. SHANE & KATHRYN GODDARD                              | 77     |
| G    | S4     | 12-7-13.1                               | WAYNE PAUL GODDARD                                      | 18     |
|      | 55     | 12-2-22.2                               | DAVID A. & MANDY L. TRUEX                               | 1.186  |
|      | S6     | 12-7-11                                 | JOSEPH R. VILLERS                                       | 1.5    |
|      | 57     | 12-7-12                                 | JOSEPH R. VILLERS                                       | 1.6    |
|      | S8     | 12-2-23.4                               | SHARON HOWELL ET AL: GLORIA A. NICE - L/E               | 0.422  |
|      | S9     | 12-2-23.3                               | KENNETH W., GODDARD                                     | 0.766  |
|      | 510    | 12-2-23.1                               | KENNETH W. GODDARD                                      | 0,36   |
| H    | 511    | 12-3-26.1                               | JOSEPH MARK KLUG  | 3.242  |
| )    | 512    | 12-3-27                                 | CATHY A. PURPURA  | 0.227  |
| K    | 513    | 12-2-23                                 | DAVID A. NICE   | 21.7   |
| N    | 514    | 12-2-22-1                               | DAVID A. NICE   | 54.66  |
|      | 515    | 12-2-21                                 | MICHAEL KENNETH & ROSETTA ANNETTE COZART                | 11.4   |
|      | 516    | 12-2-12                                 | BERYL E. MASON  | 59.9   |
| Ď    | \$17   | 12-2-13                                 | JAY S. BOOTH; DANIEL T. BOOTH & DIANE BETH<br>OVERDORFF | 100    |
| Q    | 518    | 12-2-14                                 | DAVID L CUNNINGHAM                                      | 56.23  |
| A    | 519    | 12-2-14.2                               | JOHN G. JR & GERALDINE M. ROGERS                        | 22.007 |
| T    | 520    | 12-2-14.1                               | SAMMY J. GREATHOUSE JR. :                               | 18.67  |
|      | 1 3500 |   | SAMMY J. GREATHOUSE SR L/E                              |        |
| 5    | 521    | 05-25-11.4                              | EDWARD W. KLUG, ETUX                                    | 32.787 |
| Х    | 522    | 05-25-15                                | ROBERT'S, KELLER, ETAL                                  | 15.073 |
| U    | 523    | 12-2-14.3                               | QUENNA BENNETT  | 3.093  |
| W    | 524    | 05-25-16.1                              | DAVID L CUNNINGHAM                                      | 6.34   |
| γ    | 525    | 05-25-15.2                              | RODNEY J. LOY   | 1.087  |
|      | 526    | 05-26-12.1                              | ALVIN F. JR. & KRISTA R. STONEKING                      | 2.011  |
| BB   | 527    | 05-25-17                                | CRAIG & ASHLEY FERRELL                                  | 22.79  |
| DD   | 528    | 05-25-18                                | JOSEPH JOHNSON, ETUX - LIFE                             | 37.74  |
| GG   | 529    | 05-26-11                                | MARK A. YOHO  | 89.25  |
| FF   | 530    | 05-25-18.1                              | PAMELAJOAN FERRELL, ET VIR                              | 2.491  |
| EE.  | 531    | 05-25-19                                | JOSEPH JOHNSON ET UX - LIFE                             | 1.973  |
|      | 532    | 05-26-8                                 | RICHARD J. OTTE   | 18.27  |
|      | 533    | 05-26-20                                | RICHARD J. OTTE   | 4.2    |
| 11   | 534    | 05-23-11.5                              | ZACHARY R. STEVEN                                       | 7      |
| 11   | 535    | 05-23-11.8                              | ROY F. YOHO   | 2,25   |
| нн   | 536    | 05-23-11.3                              | COLIN R. YOHO   | 11.29  |
| NN   | 537    | 05-23-11.4                              | EVELYN L HUDSON   | 10.879 |
| KK   | 538    | 05-23-13.1                              | JAMES R. & PAMELA J. FERRELL                            | 0.762  |
| MM   | 539    | 05-23-13                                | UNDA D. GREATHOUSE                                      | 14.24  |
| u    | 540    | 05-23-12                                | MARK A. YOHO  | 3.05   |
| -    | 541    | 05-23-9.1                               | JOHN W. VAN ORDEN, ETUX                                 | 23.376 |
| -    |        | 05-23-9.4                               |   | 2,087  |
| -    | 542    | 220000000000000000000000000000000000000 | JACKSON R. DAVIS, IR.                                   | 10,000 |
| -    | 543    | 05-23-9.2                               | LINDA D. GREATHOUSE                                     | 25.58  |
|      | 544    | 05-23-8                                 | CARL DAVID & SUZANNE L GUSEMAN                          | 29.5   |
| -    | \$45   | 05-23-9.3                               | LINDA D. GREATHOUSE                                     | 17.5   |
|      | 546    | 05-23-11.6                              | T.H. EXPLORATION II, LLC                                | 0.094  |
| _    | 547    | 05-23-11.2                              | EVELYN HUDSON   | 1.154  |
|      | 548    | 05-23-11                                | ROY F. YOHO   | 7      |
|      | 549    | 05-25-20,3                              | JAMES A. & JO C. ESTEP                                  | 4.49   |
|      | \$50   | 05-25-20.2                              | JAMES M. ZAMBOTTI                                       | 1.347  |
|      | \$51   | 05-25-20,1                              | JAMES M. ZAMBOTTI                                       | 2,746  |
|      | \$54   | 05-25-1                                 | MICHAEL L MASON   | 35.43  |
|      | \$55   | 05-25-14                                | ROY F, YOHO   | 23     |
|      | 556    | 05-25-13.2                              | DAVID A. KLUG   | 5.89   |
|      | \$57   | 05-25-13                                | WILLIAM M. FERDA, JR., ETAL                             | 16,014 |
|      | \$58   | 05-25-13.4                              | PARSONS CEMETERY  | 0.382  |
|      | \$59   | 05-25-12.1                              | KENT & BETTY MASON                                      | 15     |
|      | \$60   | 05-25-11.1                              | EDWARD W. & DIANNA KLUG                                 | 2,343  |
|      | 561    | 12-3-44                                 | JAMES A. & JO C. ESTEP                                  | 1.1    |
|      | 562    | 12-3-47                                 | WETZEL CO. EMERGENCY AMBULANCE                          | 0.5    |
|      | \$63   | 12-3-49                                 | LOGAN & AMY TAYLOR                                      | 3.814  |
|      | 564    | 12-3-43                                 | ADAM W. FERRELL & BRITTANY M. LOY                       | 1.97   |
| Z    | \$65   | 05-25-16                                | CRAIG R. & ASHLEY FERRELL                               | 23.5   |
|      | 566    | 12-3-1                                  | JAMES W. KLUG   | 0.375  |
| _    | 567    | 12-3-4.5                                | HAZEL M. BLAIR  | 0.375  |
|      |        |   |   |        |

NO. 708
STATE OF VIRGINIA

P.S. David L Jackson

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| Ī | * FORCED | POOLED | TRACTS | ARE HIGHLIGHTED |
|---|----------|--------|--------|-----------------|

| -1 | Number   | Tax Map -Parcel   | Surface Owner   | Acres  |
|----|--|---|---|--|
|    | 569  | 12-3-4.8  | ERIN HUBBS  | 0.621  |
|    | S70  | 12-3-4.3  | JOSEPH P. & BARBARA A. CAIN   | 3,519  |
| 1  | 571  | 12-3-2  | ROBERT LEE & DIANA G. SMITH   | 2.48   |
| 1  | 572  | 12-3-3.1  | DIANA & ROBERT L SMITH  | 15.78  |
| +  | 573  | 12-3-4.2  | DEREK L. BAKER  | 5.21   |
| +  | 574  | 12-3-3  | ANITA LARELL SLOUGH   | 1.12   |
| +  | -  |   |   | 3.625  |
| -  | 575  | 12-3-12   | RODNEY DEAN JACKSON   | _  |
|    | 576  | 12-3-48   | RONALD W. & JULIE A. NICE   | 1  |
|    | 577  | 12-3-14   | ROBERT W. BAXTER, FREDERICK J. BAXTER & ANN C.  | 27   |
| +  | 578  | 12-3-14.1   | LINGER<br>MATTHEW D, HALL   | 13   |
| +  | -  |   |   | 5  |
| 1  | 579  | 12-3-13.1   | ZACHARY J. KIRKLAND   | -  |
| 1  | 580  | 12-3-21.1   | LARRY J. & MARY ANN KIRKLAND  | 0.47   |
|    | 581  | 12-3-29   | FRIEND V. ESTEP : RAYMOND F. ESTEP - L/E  | 2,9  |
|    | 582  | 12-3-30.4   | FRIEND V. ESTEP, MICHAEL & JOAN ESTEP & DOUGLAS & JOAN ESTEP (RAYMOND ESTEP - L/E)  | 81.82  |
| -  | 583  | 12-3-30.2   | APRIL ROSE & DONALD ALIEN POSTLETHWAIT  | 1.67   |
| -  |  |   |   | 0.48   |
| 4  | 584  | 12-3-30   | MARY ROSE YOHO - WE: APRIL ROSE POSTLETHWAIT  |  |
|    | 585  | 12-3-28   | ANTIOCH CHURCH  | 1  |
|    | 586  | 12-3-45   | ANTIOCH CHURCH  | 0.774  |
|    | 587  | 12-8-3  | R. SHANE & KATHRYN GO DDARD   | 31.12  |
| T  | 588  | 12-3-30.3   | TIMOTHY L SUMMERS   | 0.61   |
|    | 589  | 12-3-32   | TIMOTHY L. SUMMERS  | 2.32   |
|    | 590  | 12-3-39   | FRIEND V. ESTEP, MICHAEL & JOAN ESTEP & DOUGLAS &   | 4.69   |
|    | 100  |   | JOAN ESTEP (RAYMOND ESTEP - L/E)  |  |
|    | 591  | 12-3-32.1   | TIMOTHY L. & LEA ANN SUMMERS  | 1.78   |
| -  |  |   |   | 1,31   |
| -  | 592  | 12-3-39,1   | WILLIAM NICE  |  |
|    | 593  | 12-3-31   | DOUGLAS & SUZANNA ESTEP   | 3.25   |
| J  | 594  | 12-8-4.3  | BRADY G. & SHARON L. HOWELL   | 5.59   |
|    | 595  | 12-8-4.1  | MARY JOSEPHINE & JACOB WOODROW NICE   | 6.171  |
|    | 596  | 12-8-13   | EDWARD C. & SANDRA K MURRINER   | 15   |
| -  | \$97   | 12-8-14   | EDWARD C. & SANDRA K MURRINER   | 5.33   |
| -  |  |   |   | 0.06   |
|    | 598  | 12-8-16,1   | BRENT A. & KIMBERLY J. EDDY   |  |
|    | 599  | 12-8-4.4  | CHARLES & BETTY HUGGINS   | 0.69   |
|    | \$100  | 12-8-4.2  | BRENT A. & KIMBERLY J. EDDY   | 1.861  |
|    | S101   | 12-8-4  | JACOB WOODROW & MARY JOSEPHINE NICE   | 20.89  |
|    | S102   | 12-8-21   | EDUARDO C. & SONYA R. DEGUZMAN  | 11.51  |
|    | S103   | 12-8-21.1   | LINDA M. STOUT  | 15.28  |
|    | S104   | 12-8-22.1   | BARRY C. KIRKLAND   | 7,401  |
|    | 111111111111111111111111111111111111111  | 12-8-32.6   |   | 1,309  |
|    | 5105   |   | CHARLES W. THOMAS JR.   | _  |
|    | S106   | 12-8-32   | CHARLES M. THOMAS, DAVID TODD & CINDY L. BATES  | 27.28  |
|    | \$107  | 12-8-20.1   | PAUL J. BLAKE   | 1.5  |
|    | S108   | 12-8-20.9   | JOSHUA M. & COURTNEY R. NEFF  | 0.4  |
|    | S109   | 12-8-20.3   | PAUL J. BLAKE   | 0.25   |
|    | \$110  | 12-8-20.8   | JOSHUA M. & COURTNEY R. NEFF  | 0.99   |
|    | S111   | 12-8-20.6   | JOHN G. & DEBRA D. THROCKMORTON   | 1.04   |
|    |  |   |   | _  |
|    | S112   | 12-8-20.7   | RON JR. & SHANA CAMPBELL  | 5,44<br>6,4  |
|    | S113   | 12-8-18   | CHARLES D. ROSE JR., ETAL: CHARLES & JUDITH ROSE - L/E  | 1 657  |
|    | S114   | 12-7-33   | CHARLES D. ROSE JR., ETAL: CHARLES & JUDITH ROSE - L/E  | 5,75   |
|    | S115   | 12-7-32.1   | CHARLES D. ROSE JR., ETAL: CHARLES & JUDITH ROSE - L/E  | 18   |
|    | S116   | 12-7-22.3   | TIMOTHY ROGER FERGUSON  | 0.239  |
|    | 5117   | 12-7-22.2   | TIMOTHY ROGER FERGUSON  | 0.908  |
| -  | 1 2 2 2 2 2  |   |   |  |
|    | \$118  | 12-7-22.4   | WAYNE PAUL GODDARD  | 0.084  |
|    | S119   | 12-7-9  | MICHAEL J. & ALENA R. FAYAD   | 22,52  |
|    | \$120  | 12-7-9.1  | JAMES T, EDDY   | 17.4   |
|    | S121   | 12-7-22.1   | NANCY C. MURPHY - L.E. KARI KIM CLARK   | 0.82   |
|    | \$122  | 12-7-10   | WAYNE PAUL GODDARD  | 1.5  |
| 1  | S123   | 12-2-22   | MARY JOSEPHINE NICE   | 2.95   |
| -  |  |   |   |  |
|    | S124   | 12-2-22.3   | DAVID L & KIMBERLY L NICE   | 1.65   |
|    | S125   | 12-2-20.2   | MICHAEL K. GOZART   | 1.025  |
|    | S126   | 12-2-20,1   | SHIRLEY L. & KENNETH L. HAUGHT  | 1  |
|    | S127   | 12-2-20   | MICHAEL K. & ROSETTA A. COZART  | 34.06  |
|    | S128   | 12-8-1.2  | JOSH GODDARD  | 1.81   |
|    | S129   | 12-7-8.1  | BRIAN & CHRISTINE L NICE  | 7.62   |
| _  | S130   | 12-7-8  | MARK E. ELLER   | 1.017  |
|    | S131   |   |   |  |
|    | 5151   | 12-7-7.5  | MARK E. ELLER   | 1,94   |
|    |  |   | MARK E. ELLER   | 1.41   |
|    | S132   | 12-7-7.1  |   |  |
|    |  | 12-7-7.1<br>12-2-25   | MICHAEL K. & ROSETTA A. COZART  | 1.26   |
|    | S132   |   |   | 1.26   |
|    | S132<br>S133   | 12-2-25   | MICHAEL K. & ROSETTA A. COZART  | -  |
|    | \$132<br>\$133<br>\$134  | 12-2-25<br>12-2-11.1<br>12-2-9  | MICHAEL K. & ROSETTA A. COZART<br>BERYL E. MASON<br>LAURA RICHARDS COOK   | 1.7  |
|    | \$132<br>\$133<br>\$134<br>\$135<br>\$136  | 12-2-25<br>12-2-11.1<br>12-2-9<br>12-2-10   | MICHAEL K. & ROSETTA A. COZART<br>BERYL E. MASON<br>LAURA RICHARDS COOK<br>LAURA RICHARDS COOK  | 1.7<br>77<br>95  |
|    | \$132<br>\$133<br>\$134<br>\$135<br>\$136<br>\$137   | 12-2-25<br>12-2-11.1<br>12-2-9<br>12-2-10<br>12-2-5   | MICHAEL K. & ROSETTA A. COZART BERYL E. MASON LAURA RICHARDS COOK LAURA RICHARDS COOK CUFFORD W. & ALBERTA B. JOHNSON   | 1.7<br>77<br>95<br>75.98   |
|    | \$132<br>\$133<br>\$134<br>\$135<br>\$136<br>\$137<br>\$138  | 12-2-25<br>12-2-11.1<br>12-2-9<br>12-2-10<br>12-2-5<br>12-2-6   | MICHAEL K. & ROSETTA A. COZART BERYL E. MASON LAURA RICHARDS COOK LAURA RICHARDS COOK CLIFFORD W. & ALBERTA B. JOHNSON CLIFFORD W. & ALBERTA B. JOHNSON   | 1.7<br>77<br>95<br>75.98   |
|    | \$132<br>\$133<br>\$134<br>\$135<br>\$136<br>\$137<br>\$138<br>\$139   | 12-2-25<br>12-2-11.1<br>12-2-9<br>12-2-10<br>12-2-5<br>12-2-6<br>12-3-46  | MICHAEL K. & ROSETTA A. COZART BERYL E. MASON LAURA RICHARDS COOK LAURA RICHARDS COOK CLIFFORD W. & ALBERTA B. JOHNSON CLIFFORD W. & ALBERTA B. JOHNSON CATHY A. PURPURA  | 1.7<br>77<br>95<br>75.98<br>36<br>0.514  |
|    | \$132<br>\$133<br>\$134<br>\$135<br>\$136<br>\$137<br>\$138  | 12-2-25<br>12-2-11.1<br>12-2-9<br>12-2-10<br>12-2-5<br>12-2-6   | MICHAEL K. & ROSETTA A. COZART BERYL E. MASON LAURA RICHARDS COOK LAURA RICHARDS COOK CLIFFORD W. & ALBERTA B. JOHNSON CLIFFORD W. & ALBERTA B. JOHNSON   | 1.7<br>77<br>95<br>75.98   |
|    | \$132<br>\$133<br>\$134<br>\$135<br>\$136<br>\$137<br>\$138<br>\$139   | 12-2-25<br>12-2-11.1<br>12-2-9<br>12-2-10<br>12-2-5<br>12-2-6<br>12-3-46  | MICHAEL K. & ROSETTA A. COZART BERYL E. MASON LAURA RICHARDS COOK LAURA RICHARDS COOK CLIFFORD W. & ALBERTA B. JOHNSON CLIFFORD W. & ALBERTA B. JOHNSON CATHY A. PURPURA  | 1.7<br>77<br>95<br>75.90<br>36<br>0,514  |
|    | \$132<br>\$133<br>\$134<br>\$135<br>\$136<br>\$137<br>\$138<br>\$139<br>\$140<br>\$141   | 12-2-25<br>12-2-11.1<br>12-2-9<br>12-2-10<br>12-2-5<br>12-2-6<br>12-3-46<br>05-26-13  | MICHAEL K. & ROSETTA A. COZART  BERYL E. MASON  LAURA RICHARDS COOK  LAURA RICHARDS COOK  CULFFORD W. & ALBERTA B. JOHNSON  CULFFORD W. & ALBERTA B. JOHNSON  CATHYA. PURPURA  MANJORIE ANN STONEKING - LIFE  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. &  BONNIE L. OLIVER TRUST  | 1.7<br>77<br>95<br>75.96<br>36<br>0.514<br>40<br>27.56   |
|    | \$132<br>\$133<br>\$134<br>\$135<br>\$136<br>\$137<br>\$138<br>\$139<br>\$140  | 12-2-25<br>12-2-11.1<br>12-2-9<br>12-2-10<br>12-2-5<br>12-2-6<br>12-3-46<br>05-26-13  | MICHAEL K. & ROSETTA A. COZART  BERYL E. MASON  LAURA RICHARDS COOK  LAURA RICHARDS COOK  CUIFFORD W. & ALBERTA B. JOHNSON  CUIFFORD W. & ALBERTA B. JOHNSON  CATHYA. PURPURA  MANJORIE ANN STONEKING - LIFE  THERESA M. WALTON, AS TRUSTEE OF THE ROBERT D. &  | 1.7<br>77<br>95<br>75.96<br>36<br>0.514<br>40<br>27.56   |
|    | \$132<br>\$138<br>\$134<br>\$135<br>\$136<br>\$137<br>\$138<br>\$139<br>\$140<br>\$141   | 12-2-25<br>12-2-11.1<br>12-2-9<br>12-2-10<br>12-2-5<br>12-2-6<br>12-3-46<br>05-26-13  | MICHAEL K. & ROSETTA A. COZART  BERYL E. MASON  LAURA RICHARDS COOK  LAURA RICHARDS COOK  CUFFORD W. & ALBERTA B. JOHNSON  CUFFORD W. & ALBERTA B. JOHNSON  CATHY A. PURPURA  MARJORIE ANN STONEKING - LIFE  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. &  BONNIE L. OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. &   | 1.7<br>77<br>95<br>75.96<br>36<br>0.514<br>40<br>27.56   |
|    | \$132<br>\$133<br>\$134<br>\$135<br>\$136<br>\$137<br>\$138<br>\$139<br>\$140<br>\$141   | 12-2-25<br>12-2-11.1<br>12-2-9<br>12-2-10<br>12-2-5<br>12-2-6<br>12-3-46<br>05-26-13<br>05-26-14  | MICHAEL K. & ROSETTA A. COZART  BERYL E. MASON  LAURA RICHARDS COOK  LAURA RICHARDS COOK  CUIFFORD W. & ALBERTA B. JOHNSON  CUIFFORD W. & ALBERTA B. JOHNSON  CATHY A. PURPURA  MARJORIE ANN STONEKING - LIFE  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. &  BONNIE L. OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. &  BONNIE L. OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. &  BONNIE L. OLIVER TRUST   | 1.7<br>77<br>95<br>75.96<br>36<br>0.514<br>40<br>27.56<br>24.94  |
|    | \$132<br>\$133<br>\$134<br>\$135<br>\$136<br>\$137<br>\$138<br>\$139<br>\$140<br>\$141<br>\$142<br>\$143   | 12-2-25<br>12-2-11.1<br>12-2-9<br>12-2-10<br>12-2-5<br>12-2-6<br>12-3-46<br>05-26-13<br>05-26-14<br>05-26-10<br>05-26-9   | MICHAEL K. & ROSETTA A. COZART  BERYL E. MASON  LAURA RICHARDS COOK  LAURA RICHARDS COOK  CUIFFORD W. & ALBERTA B. JOHNSON  CUIFFORD W. & ALBERTA B. JOHNSON  CATHY A. PURPURA  MARJORIE ANN STONEKING - LIFE  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST  RICHARD JOSEPH OTTE   | 1.7<br>77<br>95<br>75.96<br>36<br>0.514<br>40<br>27.56<br>24.94<br>21.75   |
|    | \$132<br>\$133<br>\$134<br>\$135<br>\$136<br>\$137<br>\$138<br>\$139<br>\$140<br>\$141<br>\$142<br>\$143   | 12-2-25<br>12-2-11.1<br>12-2-9<br>12-2-10<br>12-2-5<br>12-2-6<br>12-3-46<br>05-26-13<br>05-26-14<br>05-26-10<br>05-26-9   | MICHAEL K. & ROSETTA A. COZART  BERYL E. MASON  LAURA RICHARDS COOK  LAURA RICHARDS COOK  CULFFORD W. & ALBERTA B. JOHNSON  CULFFORD W. & ALBERTA B. JOHNSON  CATHYA. PURPURA  MANJORIE ANN STONEKING - LIFE  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L OLIVER TRUST  RICHARD JOSEPH OTTE  DO MINION ENERGY TRANSMISSION, INC.   | 1.7<br>77<br>95<br>75.96<br>36<br>0.514<br>40<br>27.56<br>24.94<br>21.75   |
|    | \$132<br>\$133<br>\$134<br>\$135<br>\$136<br>\$137<br>\$138<br>\$139<br>\$140<br>\$141<br>\$142<br>\$143<br>\$145<br>\$145<br>\$146                            | 12-2-25<br>12-2-11.1<br>12-2-9<br>12-2-10<br>12-2-5<br>12-2-6<br>12-3-46<br>05-26-13<br>05-26-14<br>05-26-10<br>05-26-9<br>05-26-21<br>05-23-14<br>12-3-46  | MICHAEL K. & ROSETTA A. COZART  BERYL E. MASON  LAURA RICHARDS COOK  LAURA RICHARDS COOK  CUFFORD W. & ALBERTA B. JOHNSON  CUFFORD W. & ALBERTA B. JOHNSON  CATHYA. PURPURA  MANJORIE ANN STONEKING - LIFE  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST  RICHARD JOSEPH OTTE  DO MINION ENERGY TRANSMISSION, INC.  CATHY A. PURPURA   | 77<br>95<br>75.96<br>36<br>0.514<br>40<br>27.56<br>24.94<br>21.75<br>59.5<br>3,242                                 |
|    | \$132<br>\$133<br>\$134<br>\$135<br>\$136<br>\$137<br>\$138<br>\$139<br>\$140<br>\$141<br>\$142<br>\$143<br>\$144<br>\$145<br>\$145<br>\$146<br>\$147          | 12-2-25<br>12-2-11.1<br>12-2-9<br>12-2-10<br>12-2-5<br>12-2-6<br>12-3-46<br>05-26-13<br>05-26-14<br>05-26-10<br>05-26-9<br>05-26-9<br>12-3-46<br>12-3-46<br>12-3-46<br>12-3-46  | MICHAEL K. & ROSETTA A. COZART  BERYL E. MASON  LAURA RICHARDS COOK  LAURA RICHARDS COOK  CULFFORD W. & ALBERTA B. JOHNSON  CULFFORD W. & ALBERTA B. JOHNSON  CATHYA. PURPURA  MANJORIE ANN STONEKING - LIFE  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L OLIVER TRUST  RICHARD JOSEPH OTTE  DO MINION ENERGY TRANSMISSION, INC.   | 1.7<br>77<br>95<br>75.96<br>36<br>0.514<br>40<br>27.56<br>24.94<br>21.75<br>59.5<br>3,242<br>1.81                  |
|    | \$132<br>\$133<br>\$134<br>\$135<br>\$136<br>\$137<br>\$138<br>\$139<br>\$140<br>\$141<br>\$142<br>\$143<br>\$145<br>\$145<br>\$145<br>\$146<br>\$147<br>\$148 | 12-2-25<br>12-2-11.1<br>12-2-9<br>12-2-10<br>12-2-5<br>12-2-6<br>12-3-46<br>05-26-13<br>05-26-14<br>05-26-10<br>05-26-9<br>05-26-9<br>05-23-14<br>12-3-46<br>12-3-46<br>12-3-46<br>12-3-12<br>05-23-11.8  | MICHAEL K. & ROSETTA A. COZART  BERYL E. MASON  LAURA RICHARDS COOK  LAURA RICHARDS COOK  CUFFORD W. & ALBERTA B. JOHNSON  CUFFORD W. & ALBERTA B. JOHNSON  CATHYA. PURPURA  MANJORIE ANN STONEKING - LIFE  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST  RICHARD JOSEPH OTTE  DO MINION ENERGY TRANSMISSION, INC.  CATHY A. PURPURA   | 1.7<br>77<br>95<br>75.96<br>0.514<br>40<br>27.56<br>24.94<br>21.75<br>59.5<br>3,247<br>1.81<br>2.25                |
|    | \$132<br>\$133<br>\$134<br>\$135<br>\$136<br>\$137<br>\$138<br>\$139<br>\$140<br>\$141<br>\$142<br>\$143<br>\$144<br>\$145<br>\$145<br>\$146<br>\$147          | 12-2-25<br>12-2-11.1<br>12-2-9<br>12-2-10<br>12-2-5<br>12-2-6<br>12-3-46<br>05-26-13<br>05-26-14<br>05-26-10<br>05-26-9<br>05-26-21<br>05-23-14<br>12-3-46<br>12-3-14<br>12-3-14<br>12-3-15<br>12-3-19<br>12-3-19<br>12-3-19<br>12-3-3-19<br>12-3-3-19<br>12-3-3-19<br>13-3-3-19<br>13-3-3-19<br>13-3-3-19<br>13-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3- | MICHAEL K. & ROSETTA A. COZART  BERYL E. MASON  LAURA RICHARDS COOK  LAURA RICHARDS COOK  CUFFORD W. & ALBERTA B. JOHNSON  CUFFORD W. & ALBERTA B. JOHNSON  CATHY A. PURPURA  MANUORIE ANN STONEKING - LIFE  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST  RICHARD JOSEPH OTTE  DO MINION ENERGY TRANSMISSION, INC.  CATHY A. PURPURA JOSH GODDARD  | 1.7<br>77<br>95<br>75.96<br>0.514<br>40<br>27.56<br>24.94<br>21.75<br>59.5<br>3,247<br>1.81<br>2.25                |
|    | \$132<br>\$133<br>\$134<br>\$135<br>\$136<br>\$137<br>\$138<br>\$139<br>\$140<br>\$141<br>\$142<br>\$143<br>\$145<br>\$145<br>\$145<br>\$146<br>\$147<br>\$148 | 12-2-25<br>12-2-11.1<br>12-2-9<br>12-2-10<br>12-2-5<br>12-2-6<br>12-3-46<br>05-26-13<br>05-26-14<br>05-26-10<br>05-26-9<br>05-26-9<br>05-23-14<br>12-3-46<br>12-3-46<br>12-3-46<br>12-3-12<br>05-23-11.8  | MICHAEL K. & ROSETTA A. COZART  BERYL E. MASON  LAURA RICHARDS COOK  LAURA RICHARDS COOK  CUFFORD W. & ALBERTA B. JOHNSON  CUFFORD W. & ALBERTA B. JOHNSON  CATHY A. PURPURA  MARJORIE ANN STONEKING - LIFE  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST  ABONNIE L. OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST  THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST | 1.7<br>77<br>95<br>75.90<br>36<br>0.514<br>40<br>27.56<br>24.94<br>21.75<br>59.5<br>59.5<br>3,247<br>1.25<br>0.145 |



WELL#: ELMER N-15HU
DISTRICT: Proctor
COUNTY: Wetzel

STATE: WW

API #: 47-103-03503

WELL PLAT

PAGE 3 OF 4

DATE: 07/28/2022

REVISED DATE:

9/28/2022

ELMER LEASE WELL N-15HU 513.0901± ACRES

| Lease ID             | TMP       | Tag   | Grantor, Lessor, Etc.  | Deed Bo    | ok/Page     |
|----------------------|-----------|-------|--|------------|-------------|
| 10*31435             | 12-8-15   | Α     | HENRY AND NANCY GARNER   | 55         | 394         |
| 10*31435             | 12-8-16   | В     | HENRY AND NANCY GARNER   | 55         | 394         |
| 10*31435             | 12-8-2    | С     | HENRY AND NANCY GARNER   | 55         | 394         |
| 10*31435             | 12-8-1    | D     | HENRY AND NANCY GARNER   | 55         | 394         |
| 10*31435             | 12-8-1.1  | E     | HENRY AND NANCY GARNER   | 55         | 394         |
| 10*31435             | 12-8-1.2  | F     | HENRY AND NANCY GARNER   | 55         | 394         |
| 10*31435             | 12-7-13.1 | G     | HENRY AND NANCY GARNER   | 55         | 394         |
| 10*31435             | 12-3-26.1 | н     | HENRY AND NANCY GARNER   | 55         | 394         |
| 10*31435             | 12-3-27   | 1     | HENRY AND NANCY GARNER   | 55         | 394         |
| 10*31435             | 12-3-46   | j     | HENRY AND NANCY GARNER   | 55         | 394         |
| 10*21035             | 12-2-23   | K     | THOMAS E GARNER AND BILLIE J GARNER, ET AL   | 200A       | 385         |
| 10*21643             | 12-2-23   | K     | LARRY D GARNER   | 200A       | 393         |
| 10*31435             | 12-2-23   | K     | HENRY AND NANCY GARNER   | 55         | 394         |
| 10*22229             | 12-3-13   | L     | MURIEL A MILLER, ET AL   | 204A       | 150         |
| 10*21681             | 12-2-19   | M     | DOROTHY J HAAS, ET AL  | 214A       | 358         |
| **FORCE              | 12215     | - 141 | DOTTO TITLE THE  | 22.01      |             |
| POOL**               | 12-2-22.1 | N     | THOMAS E GARNER, ET AL   | 166A       | 436         |
| 10*39463             | 12-3-4.7  | 0     | J P COOPER ET AL   | 56         | 245         |
| 10*40304             | 12-2-13   | P     | DANIELT BOOTH, ET AL   | 292A       | 309         |
| 10-40504             | 12-2-15   | P.    | DANIEL I BOOTH, ET AL  | 927        | 639         |
| 10*18205             | 12-2-14   | Q     | MEUSSA PAINTER AND SHAUN PAINTER, ET AL  | 205A       | 891         |
| 10.19502             | 12-2-14   | - Q   | WEDSA PAINTER AND SHAON PAINTEN, ET AL   | 927        | 639         |
| 10410205             | 22242     | n     | MELICIA DAIMTED AND CUALIN DAIMTED ET AL   | 205A       | 891         |
| 10*18205             | 12-2-14.2 | R     | MELISSA PAINTER AND SHAUN PAINTER, ET AL EDWARD W KLUG & DIANNA KLUG JTWROS  | 920        | 109         |
| 10*22494             | 5-25-11.4 | 2     | EDWARD W KLOG & DIANNA KLOG TIWKOS   | 1063       | 605         |
| 10127007             | 122111    |       | CAROL MASS STAL  | 100000     | 346         |
| 10*27897<br>10*39461 | 12-2-14.1 | U     | CAROL VASS, ET AL<br>JAMES M PARSONS   | 232A<br>73 | 195         |
| 10*19727             | 5-25-14.1 | v     | S RICHARD MELLON, ET AL  | 944        | 465         |
| 10-19/2/             | 5-25-14.1 | V     | S RICHARD WELLON, ET AL  |            | 639         |
| 40*40205             | - 35 15 1 | w     | AUGUSCA DAINTED AND CHAUN DAINTED ET AL  | 927        | 891         |
| 10*18205             | 5-25-16.1 | VV    | MELISSA PAINTER AND SHAUN PAINTER, ET AL   | 205A       | 639         |
| 10110205             | F 25 45   |       | ANTI-LOCAL DAVINGTED AND CHANGE DAVINGTED TO A   | 927        | Carrier III |
| 10*18205             | 5-25-15   | X     | MELISSA PAINTER AND SHAUN PAINTER, ET AL   | 205A       | 891         |
|                      |           | 177   |  | 927        | 639         |
| 10*18205             | 5-25-16.2 | Υ     | MELISSA PAINTER AND SHAUN PAINTER, ET AL   | 205A       | 891         |
|                      |           | - 2   | The second secon | 927        | 639         |
| 10*18205             | 5-25-16   | _ Z   | MELISSA PAINTER AND SHAUN PAINTER, ET AL   | 205A       | 891         |
| 10*31441             | 5 26 12   | AA    | JASON AND S M PARSONS  | 59         | 3           |
| 10*14786             | 5-25-17   | BB    | TWILA O WHIPKEY, ET AL   | 799        | 61          |
| 10*14786             | 5-25-20   | CC    | TWILA O WHIPKEY, ET AL   | 799        | 61          |
| 10*14786             | 5-25-18   | DD    | TWILA O WHIPKEY, ET AL   | 799        | 61          |
| 10*14786             | 5-25-19   | EE    | TWILA O WHIPKEY, ET AL   | 799        | 61          |
| 10*14786             | 5-25-18.1 | FF    | TWILA O WHIPKEY, ET AL   | 799        | 61          |
| 10*14786             | 5-26-11   | GG    | TWILA O WHIPKEY, ET AL   | 799        | 61          |
| 10*14786             | 5-23-11.3 | HH    | TWILA O WHIPKEY, ET AL   | 799        | 61          |
|                      | 5-23-11.5 | н     | TWILA O WHIPKEY, ET AL   | 799        | 61          |
|                      | 5-23-11.8 | 71    | TWILA O WHIPKEY, ET AL   | 799        | 61          |
| 10*14786             | 5-23-13.1 | KK    | TWILA O WHIPKEY, ET AL   | 799        | 61          |
| 10*14969             | 5-23-12   | ш     | REBECCA'S WORD, ET AL  | 872        | 219         |
| 10*14786             | 5-23-13   | MM    | TWILA O WHIPKEY, ET AL   | 799        | 61          |
| 10*14786             | 5-23-11.4 | NN    | TWILA O WHIPKEY, ET AL   | 799        | 61          |
| 10*14786             | 5-23-11.1 | 00    | TWILA O WHIPKEY, ET AL   | 799        | 61          |



P.S. David L Jackson

10/21/2022



OPERATOR'S

WELL #: ELMER N-15HU

DISTRICT: Proctor

COUNTY: Wetzel

STATE: WV

API #: 47-103-03503

WELL PLAT

PAGE 4 OF 4

DATE: 07/28/2022

REVISED DATE: 9/28/2022

## 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 pages

### 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:            | Amy L. Morris Muyblovus                   |  |
| Its:           | Permitting Specialist - Appalachia Region |  |

| Lease ID | ТМР     | Tag | Grantor, Lessor, Etc.  | Grantee, Lessee, Etc. | Royalty | Deed Bo | ok/Page | Assignment   | Assignment   | Assignment  | Assignment                      | Assignment  | Assignment  | Assignment   | Assignment                                   | Assignment   | Assignment   |
|----------|---------|-----|------------------------|-----------------------|---------|---------|---------|--|--|---|---------------------------------|---|---|--|--|--|--|
| 10*31435 | 12-8-15 | А   | HENRY AND NANCY GARNER | J A PHILLIPS          | 1/8+    | 55      | 394     | J A Phillips to South<br>Penn Oil Company:<br>56/284 | South Penn Oil<br>Company to South<br>Penn Natural Gas<br>Company: 33A/455 | South Penn<br>Natural Gas<br>Company to Dallis<br>Snyder & Sam<br>Beren dba Snyder<br>& Beren: 39A/33 | H Robinson &<br>George F Eagon: | John H Robinson, Blanche Eagon, Est of George F Eagon, decd, Mildred M Lartigue, Carl L Eagon, Elva Robinson, Est of John H Robinson, decd, & Mary Ellen Davis to Elva Robinson & Mary Ellen Davis: 43A/440                           | to Andrew L<br>Henry, Charles E<br>Reed & Harry R | Katherine A &<br>Harry R Cronin Jr<br>to Charles E &<br>Kathryn C Reed:            | Kathryn C Reed to<br>Carl Perkins:<br>55A/54 | Carl & Dorothy<br>Louise Perkins to<br>Perkins Oil and<br>Gas Inc: 84A/9 | Perkins Oil & Gas<br>Inc to TH<br>Exploration LLC:<br>251A/463 |
| 10*31435 | 12-8-16 | В   | HENRY AND NANCY GARNER | J A PHILLIPS          | 1/8+    | 55      | 394     | J A Phillips to South<br>Penn Oil Company:<br>56/284 | South Penn Oil<br>Company to South<br>Penn Natural Gas<br>Company: 33A/455 | South Penn<br>Natural Gas<br>Company to Dallis<br>Snyder & Sam<br>Beren dba Snyder<br>& Beren: 39A/33 | H Robinson &<br>George F Eagon: | John H Robinson, Blanche Eagon, Est of George F Eagon, decd, Mildred M Lartigue, Carl L Eagon, Elva Robinson, Est of John H Robinson, decd, & Mary Ellen Davis to Elva Robinson & Mary Ellen Davis: 43A/440                           | to Andrew L<br>Henry, Charles E<br>Reed & Harry R | Katherine A &<br>Harry R Cronin Jr<br>to Charles E &<br>Kathryn C Reed:            | Kathryn C Reed to<br>Carl Perkins:<br>55A/54 | Carl & Dorothy<br>Louise Perkins to<br>Perkins Oil and<br>Gas Inc: 84A/9 |  |
| 10*31435 | 12-8-2  | C   | HENRY AND NANCY GARNER | J A PHILLIPS          | 1/8+    | 55      | 394     | J A Phillips to South<br>Penn Oil Company:<br>56/284 | South Penn Oil<br>Company to South<br>Penn Natural Gas<br>Company: 33A/455 | South Penn<br>Natural Gas<br>Company to Dallis<br>Snyder & Sam<br>Beren dba Snyder<br>& Beren: 39A/33 | H Robinson &<br>George F Eagon: | John H Robinson, Blanche Eagon, Est of George F Eagon, decd, Mildred M Lartigue, Carl L Eagon, Elva Robinson, Est of John H Robinson, decd, & Mary Ellen Davis to Elva Robinson & Mary Ellen Davis: 43A/440                           | to Andrew L<br>Henry, Charles E<br>Reed & Harry R | Katherine A &<br>Harry R Cronin Jr<br>to Charles E &<br>Kathryn C Reed:<br>51A/241 | Kathryn C Reed to<br>Carl Perkins:<br>55A/54 | Carl & Dorothy<br>Louise Perkins to<br>Perkins Oil and<br>Gas Inc: 84A/9 | Perkins Oil & Gas<br>Inc to TH<br>Exploration LLC:<br>251A/463 |
| 10*31435 | 12-8-1  | D   | HENRY AND NANCY GARNER | J A PHILLIPS          | 1/8+    | 55      | 394     | J A Phillips to South<br>Penn Oil Company:<br>56/284 | South Penn Oil<br>Company to South<br>Penn Natural Gas<br>Company: 33A/455 | South Penn<br>Natural Gas<br>Company to Dallis<br>Snyder & Sam<br>Beren dba Snyder<br>& Beren: 39A/33 | H Robinson &                    | John H Robinson,<br>Blanche Eagon, Est of<br>George F Eagon, decd,<br>Midred M Lartigue,<br>Carl L Eagon, Elva<br>Robinson, Est of John<br>H Robinson, decd, &<br>Mary Ellen Davis to<br>Elva Robinson & Mary<br>Ellen Davis: 43A/440 | to Andrew L<br>Henry, Charles E<br>Reed & Harry R | Katherine A &<br>Harry R Cronin Jr<br>to Charles E &<br>Kathryn C Reed:<br>51A/241 | Kathryn C Reed to<br>Carl Perkins:<br>55A/54 | Carl & Dorothy<br>Louise Perkins to<br>Perkins Oil and<br>Gas Inc: 84A/9 | Perkins Oil & Gas<br>Inc to TH<br>Exploration LLC:<br>251A/463 |

| Lease ID   | TMP                           | Tag | Grantor, Lessor, Etc.  | Grantee, Lessee, Etc.                 | Royalty | Deed Boo     | k/Page | Assignment   | Assignment   | Assignment  | Assignment  | Assignment   | Assignment   | Assignment   | Assignment                                   | Assignment   | Assignment   |
|--|-------------------------------|-----|--|---------------------------------------|---------|--------------|--------|--|--|---|---|--|--|--|--|--|--|
| 0*31435  | 12-8-1.1                      | E   | HENRY AND NANCY GARNER   | J A PHILLIPS                          | 1/8+    | 55           | 394    | J A Phillips to South<br>Penn Oil Company:<br>56/284           | South Penn Oil<br>Company to South<br>Penn Natural Gas<br>Company: 33A/455 | South Penn<br>Natural Gas<br>Company to Dallis<br>Snyder & Sam<br>Beren dba Snyder<br>& Beren: 39A/33 | H Robinson &  | John H Robinson,<br>Blanche Eagon, Est of<br>George F Eagon, decd,<br>Mildred M Lartigue,<br>Carl L Eagon, Elva<br>Robinson, Est of John<br>H Robinson, decd, &<br>Mary Ellen Davis to<br>Elva Robinson & Mary<br>Ellen Davis: 43A/440 | Elva Robinson &<br>Mary Ellen Davis<br>to Andrew L<br>Henry, Charles E<br>Reed & Harry R<br>Cronin: 44A/92 | Harry R Cronin Jr  | Kathryn C Reed to<br>Carl Perkins:<br>55A/54 | Carl & Dorothy<br>Louise Perkins to<br>Perkins Oil and<br>Gas Inc: 84A/9 | Perkins Oil & G<br>Inc to TH<br>Exploration LLC<br>251A/463    |
|  |                               |     |  |                                       |         |              |        | Stone Energy Corp  |  |   |   |  |  |  |  |  |  |
| **FORCE<br>POOL**  | 12-2-23                       | к   | THOMAS E GARNER AND BILLIE J GARNER  | STONE ENERGY<br>CORPORATION           | 1/8+    | 168A         | 800    | to EQT Production<br>Company:<br>183A/305                      | **FORCE POOL**   |   |   |  |  |  |  |  |  |
| **FORCE<br>POOL**  | 12-2-23                       | К   | LARRY D GARNER   | STONE ENERGY<br>CORPORATION           | 1/8+    | 168A         | 782    | Stone Energy Corp<br>to EQT Production<br>Company:<br>183A/305 | **FORCE POOL**   |   |   |  |  |  |  |  |  |
| (10*31435  | 12-2-23                       | к   | HENRY AND NANCY GARNER   | J A PHILLIPS                          | 1/8+    | 55           | 394    | J A Phillips to South<br>Penn Oil Company:<br>56/284           | South Penn Oil<br>Company to South<br>Penn Natural Gas<br>Company: 33A/455 | South Penn<br>Natural Gas<br>Company to Dallis<br>Snyder & Sam<br>Beren dba Snyder<br>& Beren: 39A/33 | Dallis Snyder &<br>Muriel C Snyder,<br>Sam Beren & Sarah<br>Beren, dba Snyder<br>and Beren to John<br>H Robinson &<br>George F Eagon:<br>39A/38 | John H Robinson,<br>Blanche Eagon, Est of<br>George F Eagon, decd,<br>Mildred M Lartigue,<br>Carl L Eagon, Elva<br>Robinson, Est of John<br>H Robinson, decd,<br>Mary Ellen Davis to<br>Elva Robinson & Mary<br>Ellen Davis: 43A/440   | Elva Robinson &<br>Mary Ellen Davis<br>to Andrew L<br>Henry, Charles E<br>Reed & Harry R<br>Cronin: 44A/92 | Katherine A &<br>Harry R Cronin Jr<br>to Charles E &<br>Kathryn C Reed:<br>51A/241 | Kathryn C Reed to<br>Carl Perkins:<br>55A/54 | Carl & Dorothy<br>Louise Perkins to<br>Perkins Oil and<br>Gas Inc: 84A/9 | Perkins Oil & Gas<br>Inc to TH<br>Exploration LLC:<br>251A/463 |
| 10*21681   | 12-2-19                       | M   | DOROTHY J HAAS   | TH EXPLORATION LLC                    | 1/8+    | 214A         | 358    | N/A  | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  |
| 10*22229   | 12-2-19                       | M   | MURIEL A MILLER  | TH EXPLORATION LLC                    | 1/8+    | 204A         | 150    | N/A  | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  |
| 10*22230   | 12-2-19                       | M   | JOHN P SNYDER  | TH EXPLORATION LLC                    | 1/8+    | 204A         | 146    | N/A  | N/A  | N/A<br>N/A  | N/A<br>N/A  | N/A<br>N/A   | N/A  | N/A  | N/A  | N/A  | N/A  |
| 10*22692<br>10*23007   | 12-2-19                       | M   | JOHN M PARSONS & ANTOINETTE L COSTANTINO   | TH EXPLORATION LLC                    | 1/8+    | 209A<br>209A | 295    | N/A<br>N/A   | N/A<br>N/A   | N/A<br>N/A  | N/A<br>N/A  | N/A  | N/A<br>N/A   | N/A<br>N/A   | N/A<br>N/A                                   | N/A<br>N/A   | N/A<br>N/A   |
|  | 40.040                        |     | HAMMETT LAND & MINERALS LLC SAMUEL C   | THEYDLODATION                         | 1/8+    | 209A         | 285    | N/A  | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  | 61/5   |
| 10*23029   | 12-2-19<br>12-2-19            | M   | HAMMETT MANAGING MEMBER VIVIAN A PARSONS   | TH EXPLORATION LLC TH EXPLORATION LLC | 1/8+    | 212A         | 59     | N/A<br>N/A   | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A<br>N/A                                   | N/A<br>N/A   | N/A<br>N/A   |
| 10*23512   | 127.7                         |     | AND THE PROPERTY OF THE PARTY O | TH EXPLORATION LLC                    | 1/8+    | 212A         | 521    | N/A  | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  |
| 10*23697<br>10*23719   | 12-2-19<br>12-2-19            | M.  | RICHARD ALLEN FONNER AND LINDA M FONNER BRENDA S FONNER  | TH EXPLORATION LLC                    | 1/8+    | 212A<br>213A | 410    | N/A<br>N/A   | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  | N/A<br>N/A   | N/A<br>N/A   |
|  | 17-7-13                       |     | Committee of the control of the cont | TH EXPLORATION LLC                    | 1/8+    | 213A         | 703    | N/A  | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  |
| The state of the s | 12-2-19                       | M   | TEREDERICK R FONNER AND PENELOPE G FONNER  | THE EXPLORATION LLC                   | 1/07    | 2.12/1       | 100    |  |  |   |   |  |  |  |  |  |  |
| 10*23797<br>10*23824   | 12-2-19<br>12-2-19            | M   | FREDERICK R FONNER AND PENELOPE G FONNER JAMES H PARSONS JR  | TH EXPLORATION LLC                    | 1/8+    | 215A         | 262    | N/A  | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  |
| 10*23797   | 12-2-19<br>12-2-19<br>12-2-19 |     |  |                                       |         |              |        |  |  |   |   | N/A<br>N/A   |  |  |  |  | N/A<br>N/A   |

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|----------|----------|-------|--|---------------------------------------|---------|--------------|------------|-----------------------|------------------|--------------------------------|--------------------|-----------------------|--------------------------|----------------------------|-------------------|-----------------|-------------------|
| L0*24175 | 12-2-19  | M     | THOMAS L FONNER  | TH EXPLORATION LLC                    | 1/8+    | 214A         |            | N/A                   | N/A              | N/A                            | N/A                | N/A                   | N/A                      | N/A                        | N/A               | N/A             | N/A               |
| 0 241/3  | 12 2 13  |       | 2011 WILLIAM F ROWLAND & CONNIE J                                    |                                       | 1 7     |              |            |                       |                  |                                |                    |                       |                          |                            |                   | .,,.,           | .,,,              |
|          |          |       | ROWLAND IRREVOCABLE TRUST DATED OCTOBER                              |                                       |         |              |            |                       |                  |                                |                    |                       |                          |                            |                   |                 |                   |
| 10*24775 | 12-2-19  | м     | 28. 2011   | TH EXPLORATION LLC                    | 1/8+    | 220A         | 289        | N/A                   | N/A              | N/A                            | N/A                | N/A                   | N/A                      | N/A                        | N/A               | N/A             | N/A               |
| 10*25009 | 12-2-19  | M     | FRANCES E ALLOWAY  | TH EXPLORATION LLC                    | 1/8+    | 220A         | 887        | N/A                   | N/A              | N/A                            | N/A                | N/A                   | N/A                      | N/A                        | N/A               | N/A             | N/A               |
| 10*26923 | 12-2-19  | М     | CHRISTOPHER TILLMAN AND KELLY L TILLMAN                              | TH EXPLORATION LLC                    | 1/8+    | 225A         | 771        | N/A                   | N/A              | N/A                            | N/A                | N/A                   | N/A                      | N/A                        | N/A               | N/A             | N/A               |
|          |          |       |  |                                       |         | 1            |            |                       |                  | 1 .                            |                    |                       |                          |                            |                   |                 |                   |
| 10*26986 | 12-2-19  | M     | ROBERT FRANKLIN II FONNER AND KARYN FONNER                           |                                       | 1/8+    | 226A         | 407        | N/A                   | N/A              | N/A                            | N/A                | N/A                   | N/A                      | N/A                        | N/A               | N/A             | N/A               |
| 10*27309 | 12-2-19  | M     | JOHN IHNATOLYA AND CHARLOTTE IHNATOLYA                               | TH EXPLORATION LLC                    | 1/8+    | 229A         | 590        | N/A                   | N/A              | N/A<br>N/A                     | N/A<br>N/A         | N/A<br>N/A            | N/A<br>N/A               | N/A                        | N/A               | N/A             | N/A               |
| 10*27548 | 12-2-19  | M     | BECKY LANE LLC   | TH EXPLORATION LLC                    | 1/8+    | 232A         | 716        | N/A                   | N/A<br>N/A       | N/A<br>N/A                     | N/A<br>N/A         | N/A<br>N/A            | N/A<br>N/A               | N/A                        | N/A               | N/A             | N/A               |
| 10*27549 | 12-2-19  | M     | BETTY JANE RICHARDSON FONNER   | TH EXPLORATION LLC TH EXPLORATION LLC | 1/8+    | 232A<br>232A | 720<br>339 | N/A<br>N/A            | N/A              | N/A                            | N/A<br>N/A         | N/A<br>N/A            | N/A<br>N/A               | N/A<br>N/A                 | N/A<br>N/A        | N/A<br>N/A      | N/A<br>N/A        |
| 10*27963 | 12-2-19  | М     | STONE HILL MINERALS HOLDINGS LLC CHRISTINE C CONNOR AND WILLIAM KYLE | TH EXPLORATION LLC                    | 1/8+    | 232A         | 339        | IN/A                  | IN/A             | IN/A                           | IN/A               | IN/A                  | N/A                      | IN/A                       | IN/A              | IN/A            | N/A               |
| 10*28038 | 12-2-19  | М     | CONNOR   | TH EXPLORATION LLC                    | 1/8+    | 234A         | 623        | N/A                   | N/A              | N/A                            | N/A                | N/A                   | N/A                      | N/A                        | N/A               | N/A             | N/A               |
| 10.28038 | 12-2-19  | 101   | CONNOR   | III EXI EDITATION ELC                 | 1,0.    | 2547         | 025        | 197                   | 1471             |                                | 1,7.1              | 1.97.                 | 1,7,7                    |                            | 14/7              | 117/5           | 177               |
|          |          |       |  |                                       |         |              |            |                       |                  |                                |                    |                       |                          |                            |                   |                 | i                 |
|          | i        |       |  |                                       |         |              |            |                       |                  |                                | 1                  |                       |                          |                            |                   |                 | 1                 |
|          | 1        |       |  |                                       |         |              |            |                       |                  | 1                              |                    | John H Robinson,      |                          |                            |                   |                 |                   |
|          |          | 1     |  |                                       |         |              | l          |                       |                  | 1                              |                    | Blanche Eagon, Est of |                          |                            |                   |                 | 1                 |
|          |          |       |  |                                       |         |              |            |                       |                  |                                | Dallis Snyder &    | George F Eagon, decd, |                          |                            |                   |                 |                   |
|          | ļ        |       |  |                                       |         | 1            |            |                       |                  |                                | Muriel C Snyder,   | Mildred M Lartigue,   |                          |                            |                   | 1               |                   |
|          | 1        |       |  |                                       |         |              |            |                       |                  | South Penn                     | Sam Beren & Sarah  | Carl L Eagon, Elva    | Elva Robinson &          |                            |                   | ĺ               |                   |
|          |          |       |  |                                       |         |              |            | 1                     |                  | Natural Gas                    | Beren, dba Snyder  | Robinson, Est of John | Mary Ellen Davis         | Katherine A &              | 1                 |                 |                   |
|          | 1        |       |  |                                       |         |              |            |                       | South Penn Oil   | Company to Dallis              |                    | H Robinson, decd, &   | to Andrew L              | Harry R Cronin Jr          |                   | Carl & Dorothy  | Perkins Oil & Gas |
|          |          |       |  |                                       |         |              |            | J A Phillips to South | Company to South | Snyder & Sam                   | H Robinson &       | Mary Ellen Davis to   | Henry, Charles E         | 1                          | Kathryn C Reed to |                 | Inc to TH         |
|          |          |       |  |                                       |         | l            |            | Penn Oil Company:     | Penn Natural Gas | Beren dba Snyder               | 1 "                | Elva Robinson & Mary  | Reed & Harry R           | Kathryn C Reed:            | Carl Perkins:     | Perkins Oil and | Exploration LLC:  |
| 10*31435 | 12-2-19  | M     | HENRY AND NANCY GARNER   | J A PHILLIPS                          | 1/8+    | 55           | 394        | 56/284                | Company: 33A/455 | & Beren: 39A/33                | 39A/38             | Ellen Davis: 43A/440  | Cronin: 44A/92           | 51A/241                    | 55A/54            | Gas Inc: 84A/9  | 251A/463          |
|          |          |       |  |                                       |         |              |            |                       |                  |                                |                    | 1                     | Development              | CNG Producing              | Merger - Dominion | i               |                   |
|          |          | 1     |  |                                       |         |              |            |                       |                  |                                |                    |                       | Company                  | Company                    | Exploration &     | Merger - Consol |                   |
|          |          |       |  |                                       |         |              |            |                       |                  | Hope Natural Gas               | Consolidated Gas   |                       | merged with and          |                            | Production Inc    | Gas Company     |                   |
|          |          |       |  |                                       |         |              |            |                       | South Penn Oil   | Company to                     | Supply Corp to     | Consolidated Gas      | into CNG                 | into Dominion              | merger with and   | merged with and | CNX Gas           |
|          |          |       |  |                                       |         |              |            | J A Phillips to South | Company to Hope  | Consolidated Gas               |                    | Transmission Corp to  | Producing                | Exploration &              | into Consol Gas   | into CNX Gas    | Company LLC to    |
|          |          |       |  |                                       | l       |              | İ          | Penn Oil Company:     | Natural Gas      | Supply Corp:                   | Transmission Corp: | CNG Development       | Company Eff.             | Producing Inc              | Company: CB       | Company LLC:    | TH Exploration    |
| 10*39464 | 12-2-19  | М     | ROBERT AND SARAH J COFFIELD  | J A PHILLIPS                          | 1/8+    | 55           | 216        | 55/235                | Company: 9A/227  | 233/387                        | 66A/69             | Company: 67A/452      | 1/1/1991                 | 5/10/2000                  | 13/108            | MB 96/307       | LLC: 270A/479     |
| 10 33404 | 12-2-13  | - '*' | NOBERT AND SARATS COTTLED  | 377777724770                          |         | <del> </del> |            | 34,222                |                  |                                |                    |                       | weiger - cwo             | warite Change -            |                   |                 | 1 2201 2707 475   |
|          |          |       |  |                                       |         |              |            |                       |                  |                                |                    |                       | Development              | CNG Producing              | Merger - Dominion |                 |                   |
|          |          |       |  |                                       |         |              |            |                       |                  |                                |                    |                       | Company                  | Company                    | Exploration &     | Merger - Consol |                   |
|          |          |       |  |                                       |         |              |            |                       |                  | Hope Natural Gas               | 1                  |                       | merged with and          |                            | Production Inc    | Gas Company     |                   |
|          |          |       |  |                                       | ŀ       | 1            | ł          |                       | South Penn Oil   | Company to                     | Supply Corp to     | Consolidated Gas      | into CNG                 | into Dominion              | merger with and   | merged with and | CNX Gas           |
|          |          |       |  |                                       |         |              | 1          | J A Phillips to South | Company to Hope  | Consolidated Gas               |                    | Transmission Corp to  | Producing                | Exploration &              | into Consol Gas   | into CNX Gas    | Company LLC to    |
|          |          | i     |  |                                       | 1       |              |            | Penn Oil Company:     | Natural Gas      | Supply Corp:                   | Transmission Corp: | CNG Development       | Company Eff.             | Producing Inc              | Company: CB       | Company LLC:    | TH Exploration    |
| 10*39465 | 12-2-19  | М     | ROBERT AND SARAH J COFFIELD  | J A PHILLIPS                          | 1/8+    | 55           | 212        | 55/235                | Company: 9A/227  | 233/387                        | 66A/69             | Company: 67A/452      | 1/1/1991<br>Werger - CNG | 5/10/2000<br>Name Change - | 13/108            | MB 96/307       | LLC: 270A/479     |
|          |          |       |  |                                       |         |              |            |                       |                  |                                |                    |                       | Development              | CNG Producing              | Merger - Dominion |                 |                   |
|          |          |       |  |                                       |         |              |            |                       |                  |                                |                    |                       | Company                  | Company                    | Exploration &     | Merger - Consol |                   |
|          |          | 1     |  |                                       |         |              |            |                       |                  | Hope Natural Gas               | Consolidated Gas   |                       | merged with and          | • •                        | Production Inc    | Gas Company     |                   |
|          |          |       |  |                                       |         |              | 1          |                       | South Penn Oil   | Company to                     | Supply Corp to     | Consolidated Gas      | into CNG                 | into Dominion              | merger with and   |                 | CNIV Cos          |
|          |          | 1     |  |                                       |         |              |            |                       |                  | Company to<br>Consolidated Gas | Consolidated Gas   | Transmission Corp to  |                          |                            | 1 -               | merged with and | CNX Gas           |
|          |          |       |  | COLUMN DEATH OF                       |         |              | 1          |                       | Company to Hope  |                                |                    |                       | Producing                | Exploration &              | into Consol Gas   | into CNX Gas    | Company LLC to    |
|          | 1        | _     | La coorra et al  | SOUTH PENN OIL                        | 1/0.    |              | 345        | N/A                   | Natural Gas      | Supply Corp:                   | Transmission Corp: | CNG Development       | Company Eff.             | Producing Inc              | Company: CB       | Company LLC:    | TH Exploration    |
| 10*39463 | 12-3-4.7 | 0     | J P COOPER ET AL   | COMPANY                               | 1/8+    | 56<br>927    | 245<br>639 | N/A                   | Company: 9A/227  | 233/387                        | 66A/69             | Company: 67A/452      | 1/1/1991                 | 5/10/2000                  | 13/108            | MB 96/307       | LLC: 270A/479     |
|          | 1        |       | NACHICCA DAINTED AND CHAHAI DAINTED                                  | TH EXPLORATION LLC                    | 1/8+    | 205A         | 891        | N/A                   | N/A              | N/A                            | N/A                | N/A                   | N/A                      | N/A                        | N/A               | N/A             | N/A               |
| 10*18205 | 12-2-14  | Q     | MELISSA PAINTER AND SHAUN PAINTER                                    | THE EXPLORATION LLC                   | 1 1/0+  | _ 203A       | 1 93T      | I N/A                 | IN/A             | I IN/M                         | IN/A               | 1 14/A                | I IN/A                   | IV/A                       | L IV/A            | L IN/A          | I N/A             |

|                      | · · · · · · · · · · · · · · · · · · · |          |   |                       |         |              |            |            |            |                 |                  | 1                  | <u> </u>     |               |                   |                 |                |
|----------------------|---------------------------------------|----------|---|-----------------------|---------|--------------|------------|------------|------------|-----------------|------------------|--------------------|--------------|---------------|-------------------|-----------------|----------------|
| I anno ID            | ТМР                                   | Tog      | Grantor, Lessor, Etc.   | Grantee, Lessee, Etc. | Royalty | Deed Bo      | ok/Page    | Assignment | Assignment | Assignment      | Assignment       | Assignment         | Assignment   | Assignment    | Assignment        | Assignment      | Assignment     |
| Lease ID<br>10*18216 | 12-2-14                               | Tag<br>Q | BRUCE EDWARD BAILEY JR AND DARA BAILEY  | TH EXPLORATION LLC    | 1/8+    | 929          | 99         | N/A        | N/A        | N/A             | N/A              | N/A                | N/A          | N/A           | N/A               | N/A             | N/A            |
| 10 10210             |                                       |          |   |                       |         | 941          | 235        |            |            |                 |                  |                    |              |               |                   |                 |                |
| 10*19484             | 12-2-14                               | Q        | FREDRIC & BETTY RICHTER   | TH EXPLORATION LLC    | 1/8+    | 195A         | 166        | N/A        | N/A        | N/A             | N/A              | N/A                | N/A          | N/A           | N/A               | N/A             | N/A            |
| 10*19485             | 12-2-14                               | Q        | ELIZABETH A HARTLE  | TH EXPLORATION LLC    | 1/8+    | 941          | 233        | N/A        | N/A        | N/A             | N/A              | N/A                | N/A          | N/A           | N/A               | N/A             | N/A            |
|                      |                                       |          |   | L                     | 1       | 944          | 101        | ***        | 31/4       |                 |                  | 31/4               |              | 21/2          |                   |                 |                |
| 10*19643             | 12-2-14                               | Q        | PATRICIA LOUISE CROW AND HOY GLENN CROW   | TH EXPLORATION LLC    | 1/8+    | 205A<br>988  | 877<br>439 | N/A        | N/A        | N/A             | N/A              | N/A                | N/A          | N/A           | N/A               | N/A             | N/A            |
| 10*23349             | 12-2-14                               | Q        | LYNN ELLEN BARCUS AND PAUL E BARCUS JR  | TH EXPLORATION LLC    | 1/8+    | 211A         | 335        | N/A        | N/A        | N/A             | N/A              | N/A                | N/A          | N/A           | N/A               | N/A             | N/A            |
| 10*23403             | 12-2-14                               | Q        | JAN LEA ODONNELL AND KELLY ODONNELL   | TH EXPLORATION LLC    | 1/8+    | 988<br>211A  | 436<br>338 | N/A        | N/A        | N/A             | N/A              | N/A                | N/A          | N/A           | N/A               | N/A             | N/A            |
| 20 20 100            |                                       |          |   |                       |         | 212A         | 32         |            |            |                 |                  |                    |              |               |                   |                 |                |
| 10*23426             | 12-2-14                               | Q        | STEVEN L & CAROL J NEWMAN   | TH EXPLORATION LLC    | 1/8+    | 988          | 433        | N/A        | N/A        | N/A             | N/A              | N/A                | N/A          | N/A           | N/A               | N/A             | N/A            |
| 10*23702             | 12-2-14                               | Q        | BRAD EYNON  | TH EXPLORATION LLC    | 1/8+    | 1015         | 152        | N/A        | N/A        | N/A             | N/A              | N/A                | N/A          | N/A           | N/A               | N/A             | N/A            |
| 10*23836             | 12-2-14                               | Q        | JON NEWMAN & SUSAN NEWMAN   | TH EXPLORATION LLC    | 1/8+    | 214A<br>1057 | 315<br>339 | N/A        | N/A        | N/A             | N/A              | N/A                | N/A          | N/A           | N/A               | N/A             | N/A            |
| 10*27186             | 12-2-14                               | Q        | LAURA J MAY AND ROGER A MAY   | TH EXPLORATION LLC    | 1/8+    | 230A         | 662        | N/A        | N/A        | N/A             | N/A              | N/A                | N/A          | N/A           | N/A               | N/A             | N/A            |
|                      |                                       |          | DODEST ANALOGA POLICIO NANCY DI AACCA POLIC   | TH EVELOPATION I I C  | 1/0.    | 230A<br>1057 | 664<br>337 | N/A        | N/A        | N/A             | N/A              | N/A                | N/A          | N/A           | N/A               | N/A             | N/A            |
| 10*27298             | 12-2-14                               | Q_       | ROBERT M MCCARDLE & NANCY R MCCARDLE  | TH EXPLORATION LLC    | 1/8+    | 1057         | 568        | N/A        | IN/A       | IN/A            | IV/A             | N/A                | N/A          | N/A           | IN/A              | IN/A            | IN/A           |
| 10*27435             | 12-2-14                               | Q_       | ROHN J BOWERS MARTIN  | TH EXPLORATION LLC    | 1/8+    | 230A         | 656        | N/A        | N/A        | N/A             | N/A              | N/A                | N/A          | N/A           | N/A               | N/A             | N/A            |
|                      |                                       |          |   |                       | 4 /0    | 230A         | 660        | N1/A       | 21.72      | 11/4            | 1                | NI/A               | 11/0         | 21/2          |                   |                 |                |
| 10*27439             | 12-2-14                               | Q        | GERALD H COOPER   | TH EXPLORATION LLC    | 1/8+    | 1058<br>230A | 570<br>658 | N/A        | N/A        | N/A             | N/A              | N/A                | N/A          | N/A           | N/A               | N/A             | N/A            |
| 10*27444             | 12-2-14                               | Ιq       | GREGORY T COOPER AND SUSAN COOPER   | TH EXPLORATION LLC    | 1/8+    | 1058         | 572        | N/A        | N/A        | N/A             | N/A              | N/A                | N/A          | N/A           | N/A               | N/A             | N/A            |
| 10*27521             | 12-2-14                               | Q        | GASPARE A INGRASSELINO  | TH EXPLORATION LLC    | 1/8+    | 234A         | 472        | N/A        | N/A        | N/A             | N/A              | N/A                | N/A          | N/A           | N/A               | N/A             | N/A            |
| 10*27569             | 12-2-14                               | Q        | ROBERT LOHR   | TH EXPLORATION LLC    | 1/8+    | 1060         | 484        | N/A        | N/A        | N/A             | N/A              | N/A                | N/A          | N/A           | N/A               | N/A             | N/A            |
|                      |                                       |          |   |                       |         | 1063         | 605        |            |            |                 |                  |                    |              |               |                   |                 | 1              |
| 10*27897             | 12-2-14                               | Q        | CAROL VASS  | TH EXPLORATION LLC    | 1/8+    | 232A<br>1064 | 346<br>145 | N/A        | N/A        | N/A             | N/A              | N/A                | N/A          | N/A           | N/A               | N/A             | N/A            |
| 10*27898             | 12-2-14                               | ۵        | PAUL G FOX AND CYNTHIA G FOX  | TH EXPLORATION LLC    | 1/8+    | 233A         | 522        | N/A        | N/A        | N/A             | N/A              | N/A                | N/A          | N/A           | N/A               | N/A             | N/A            |
| 10*27959             | 12-2-14                               | a        | STONE HILL MINERALS HOLDINGS LLC  | TH EXPLORATION LLC    | 1/8+    | 1063         | 594        | N/A        | N/A        | N/A             | N/A              | N/A                | N/A          | N/A           | N/A               | N/A             | N/A            |
| 10 27555             | 12.2.1                                |          | 0.00.20.2 |                       |         |              |            |            |            |                 |                  |                    | Consolidated | CNG Producing | Merger - Dominion |                 |                |
| 1                    |                                       |          |   |                       | 1       |              |            |            |            |                 |                  |                    | Gas          | Company       | Exploration &     | Merger - Consol | 1              |
|                      |                                       |          |   |                       |         |              |            |            |            | South Penn oil  | Hope Natural Gas | Consolidated Gas   | Transmission | changed name  | Production Inc    | Gas Company     | 1              |
|                      | 1                                     |          |   |                       |         | 1            |            |            |            | Company to Hope | Company to       | Supply Corp to     | Corp to CNG  | into Dominion | merger with and   | merged with and | CNX Gas        |
|                      | ì                                     |          |   |                       |         |              |            |            |            | Natural Gas     | Consolidated Gas | Consolidated Gas   | Development  | Exploration & | into Consol Gas   | into CNX Gas    | Company LLC to |
|                      |                                       |          |   | SOUTH PENN OIL        |         |              |            |            |            | Company:        | Supply Corp:     | Transmission Corp: | Company:     | Producing Inc | Company: CB       | Company LLC:    | TH Exploration |
| 10*39461             | 12-2-14                               | ا م      | JAMES M PARSONS   | COMPANY               | 1/8+    | 73           | 195        | N/A        | N/A        | 9A/227          | 233/387          | 66A/69             | 67A/453      | 5/10/2000     | 13/108            | MB 96/307       | LLC: 270A/479  |
| 10 33 101            | 1222                                  | <u> </u> |   |                       |         | 927          | 639        |            |            |                 |                  |                    |              |               |                   |                 |                |
| - 10*18205           | 5-25-16.1                             | w        | MELISSA PAINTER AND SHAUN PAINTER   | TH EXPLORATION LLC    | 1/8+    | 205A         | 891        | N/A        | N/A        | N/A             | N/A              | N/A                | N/A          | N/A           | N/A               | N/A             | N/A            |
| 10*18216             | 5-25-16.1                             | W        | BRUCE EDWARD BAILEY JR AND DARA BAILEY  | TH EXPLORATION LLC    | 1/8+    | 929          | 99         | N/A        | N/A        | N/A             | N/A              | N/A                | N/A          | N/A           | N/A               | N/A             | N/A            |
| 10****               | F 25 46 6                             |          | EDENDIC & DETTY DICHTED   | TH EXPLORATION LLC    | 1/8+    | 941<br>195A  | 235<br>166 | N/A        | N/A        | N/A             | N/A              | N/A                | N/A          | N/A           | N/A               | N/A             | N/A            |
| 10*19484<br>10*19485 | 5-25-16.1<br>5-25-16.1                | W        | FREDRIC & BETTY RICHTER ELIZABETH A HARTLE  | TH EXPLORATION LLC    | 1/8+    | 941          | 233        | N/A        | N/A        | N/A             | N/A              | N/A                | N/A          | N/A           | N/A               | N/A             | N/A            |
| 10 13403             | J-2J-10.1                             | - **     | Bearing (Marine)  |                       | 1 -,    | 944          | 101        |            | 4          |                 | ,                | 1                  |              |               | 1                 | 1               |                |
| 10*19643             | 5-25-16.1                             | w        | PATRICIA LOUISE CROW AND HOY GLENN CROW   | TH EXPLORATION LLC    | 1/8+    | 205A         | 877        | N/A        | N/A        | N/A             | N/A              | N/A                | N/A          | N/A           | N/A               | N/A             | N/A            |
| 10*23349             | 5-25-16.1                             | w        | LYNN ELLEN BARCUS AND PAUL E BARCUS JR  | TH EXPLORATION LLC    | 1/8+    | 988<br>211A  | 439<br>335 | N/A        | N/A        | N/A             | N/A              | N/A                | N/A          | N/A           | N/A               | N/A             | N/A            |
|                      |                                       | w        | JAN LEA ODONNELL AND KELLY ODONNELL   | TH EXPLORATION LLC    | 1/8+    | 988<br>211A  | 436<br>338 | N/A        | N/A        | N/A             | N/A              | N/A                | N/A          | N/A           | N/A               | N/A             | N/A            |
| 10*23403             | 5-25-16.1                             | vv       | JAN LEA ODONNELL AND RELLI ODONNELL   | TH EXPEDITATION LEC   | 1,01    | 212A         | 32         | 17/5       | 1975       | 1,77            | .,,,,,           |                    | 1,,,,        | 1777          | 19/2              | ''/             | 17/2           |
| 10*23426             | 5-25-16.1                             | w        | STEVEN L & CAROL J NEWMAN   | TH EXPLORATION LLC    | 1/8+    | 988          | 433        | N/A        | N/A        | N/A             | N/A              | N/A                | N/A          | N/A           | N/A               | N/A             | N/A            |

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|          |           |
| Lease ID | TMP       |
| 10*23702 | 5-25-16.1 |
| 10*23836 | 5-25-16.1 |
| 10*27186 | 5-25-16.1 |
| 10*27298 | 5-25-16.1 |
| 10*27435 | 5-25-16.3 |
| 10*27439 | 5-25-16.3 |
| 10*27444 | 5-25-16.3 |
| 10*27521 | 5-25-16.3 |
| 10*27569 | 5-25-16.3 |
| 10*27897 | 5-25-16.  |
| 10*27898 | 5-25-16.  |
| 10*27959 | 5-25-16.  |
| 10*27963 | 5-25-16.  |
| 10*39461 | 5-25-16.  |
| 10*18205 | 5-25-16   |
| 10*18216 | 5-25-16   |
|          |           |
| 10*19484 | 5-25-16   |
| 10*19485 | 5-25-16   |
| 10*19643 | 5-25-16   |
|          |           |

|                 | 1         |              |   |  |                 | Dag 3 5      | -l./n          | A!                | Aceie             | Assissment                            | Assignment        | Accionment         | Assissment        | Accionment        | Assissment        | Accim                                 | A and a second    |
|-----------------|-----------|--------------|---|--|-----------------|--------------|----------------|-------------------|-------------------|---------------------------------------|-------------------|--------------------|-------------------|-------------------|-------------------|---------------------------------------|-------------------|
| Lease ID        | TMP       |              | Grantor, Lessor, Etc.                   | Grantee, Lessee, Etc. TH EXPLORATION LLC | Royalty<br>1/8+ | Deed Bo      | ok/Page<br>152 | Assignment<br>N/A | Assignment<br>N/A | Assignment<br>N/A                     | Assignment<br>N/A | Assignment<br>N/A  | Assignment<br>N/A | Assignment<br>N/A | Assignment<br>N/A | Assignment<br>N/A                     | Assignment<br>N/A |
| 10*23702        | 5-25-16.1 | W            | BRAD EYNON                              | TH EXPLORATION LLC                       | 1/8+            | 214A         | 315            | N/A               | N/A               | N/A                                   | N/A               | N/A                | N/A               | N/A               | N/A               | N/A                                   | N/A               |
| L0*23836        | 5-25-16.1 | W            | JON NEWMAN & SUSAN NEWMAN               | TH EXPLORATION LLC                       | 1/01            | 1057         | 339            | 11/15             | 14/^              | 19/5                                  | 19/6              | 19/5               | 19/6              | N/A               | 11/7              | 19/5                                  |                   |
| . 0 + 0 7 4 0 5 | - 35 46 4 | w            | LAURA J MAY AND ROGER A MAY             | TH EXPLORATION LLC                       | 1/8+            | 230A         | 662            | N/A               | N/A               | N/A                                   | N/A               | N/A                | N/A               | N/A               | N/A               | N/A                                   | N/A               |
| 10*27186        | 5-25-16.1 | vv           | LAURA J MAT AND ROGER A MAT             | THE EXPLORATION CCC                      | 1,0.            | 230A         | 664            | 1475              | 147.              | 1,411                                 |                   | .4/.               | .,,               | 1,7,1             | 1,7,1             | 1,47.                                 | .,,,,             |
| 10*27298        | 5-25-16.1 | w            | ROBERT M MCCARDLE & NANCY R MCCARDLE    | TH EXPLORATION LLC                       | 1/8+            | 1057         | 337            | N/A               | N/A               | N/A                                   | N/A               | N/A                | N/A               | N/A               | N/A               | N/A                                   | N/A               |
| 10 2/290        | 3-23-10.1 |              | RODERT IN MICCARDLE & WATER RINGS MADE  |  | 1 77            | 1058         | 568            |                   |                   | , , , , , , , , , , , , , , , , , , , | •                 |                    |                   |                   |                   | , , , , , , , , , , , , , , , , , , , |                   |
| 10*27435        | 5-25-16.1 | w            | ROHN J BOWERS MARTIN                    | TH EXPLORATION LLC                       | 1/8+            | 230A         | 656            | N/A               | N/A               | N/A                                   | N/A               | N/A                | N/A               | N/A               | N/A               | N/A                                   | N/A               |
| 10 2/433        | 3 23 10.1 |              |   |  |                 | 230A         | 660            |                   |                   |                                       |                   |                    |                   |                   |                   |                                       |                   |
| 10*27439        | 5-25-16.1 | w            | GERALD H COOPER                         | TH EXPLORATION LLC                       | 1/8+            | 1058         | 570            | N/A               | N/A               | N/A                                   | N/A               | N/A                | N/A               | N/A               | N/A               | N/A                                   | N/A               |
|                 |           |              |   |  |                 | 230A         | 658            |                   |                   |                                       |                   |                    |                   |                   |                   |                                       | 1                 |
| 10*27444        | 5-25-16.1 | w            | GREGORY T COOPER AND SUSAN COOPER       | TH EXPLORATION LLC                       | 1/8+            | 1058         | 572            | N/A               | N/A               | N/A                                   | N/A               | N/A                | N/A               | N/A               | N/A               | N/A                                   | N/A               |
| 10*27521        | 5-25-16.1 | W            | GASPARE A INGRASSELINO                  | TH EXPLORATION LLC                       | 1/8+            | 234A         | 472            | N/A               | N/A               | N/A                                   | N/A               | N/A                | N/A               | N/A               | N/A               | N/A                                   | N/A               |
| 10*27569        | 5-25-16.1 | W            | ROBERT LOHR                             | TH EXPLORATION LLC                       | 1/8+            | 1060         | 484            | N/A               | N/A               | N/A                                   | N/A               | N/A                | N/A               | N/A               | N/A               | N/A                                   | N/A               |
|                 |           |              |   |  | l               | 1063         | 605            |                   |                   |                                       |                   | ,.                 |                   |                   |                   |                                       |                   |
| 10*27897        | 5-25-16.1 | W            | CAROL VASS                              | TH EXPLORATION LLC                       | 1/8+            | 232A         | 346            | N/A               | N/A               | N/A                                   | N/A               | N/A                | N/A               | N/A               | N/A               | N/A                                   | N/A               |
|                 |           |              |   |  |                 | 1064         | 145            |                   |                   |                                       |                   |                    |                   |                   |                   |                                       | 1                 |
| 10*27898        | 5-25-16.1 | W            | PAUL G FOX AND CYNTHIA G FOX            | TH EXPLORATION LLC                       | 1/8+            | 233A         | 522<br>594     | N/A<br>N/A        | N/A<br>N/A        | N/A<br>N/A                            | N/A<br>N/A        | N/A<br>N/A         | N/A<br>N/A        | N/A<br>N/A        | N/A<br>N/A        | N/A<br>N/A                            | N/A<br>N/A        |
| 10*27959        | 5-25-16.1 | W            | STONE HILL MINERALS HOLDINGS LLC        | TH EXPLORATION LLC                       | 1/8+            | 1063<br>232A | 339            | N/A<br>N/A        | N/A<br>N/A        | N/A                                   | N/A<br>N/A        | N/A<br>N/A         | N/A               | N/A<br>N/A        | N/A<br>N/A        | N/A<br>N/A                            | N/A<br>N/A        |
| 10*27963        | 5-25-16.1 | W            | STONE HILL MINERALS HOLDINGS LLC        | TH EXPLORATION LLC                       | 1/8+            | 232A         | 339            | IN/A              | N/A               | IN/A                                  | IN/A              | IN/A               | N/A               | Ivame Change -    | IN/A              | N/A                                   | N/A               |
|                 | 1         |              |   |  |                 |              | 1              |                   |                   |                                       |                   |                    | Consolidated      | CNG Producing     | Merger - Dominion | 1                                     | Í                 |
| ļ               |           |              |   |  |                 | 1            |                |                   |                   |                                       |                   |                    | Gas               | Company           | Exploration &     | Merger - Consol                       | Í                 |
| l               |           |              |   |  |                 |              | 1              |                   |                   | South Penn oil                        | Hope Natural Gas  | Consolidated Gas   | Transmission      | changed name      | Production Inc    | Gas Company                           | 1                 |
| İ               |           |              |   |  |                 |              |                |                   |                   | Company to Hope                       | Company to        | Supply Corp to     | Corp to CNG       | into Dominion     | merger with and   | merged with and                       | CNX Gas           |
| ŀ               |           |              |   | 1  |                 | 1            |                |                   |                   | Natural Gas                           | Consolidated Gas  | Consolidated Gas   | Development       | Exploration &     | into Consol Gas   | into CNX Gas                          | Company LLC to    |
| l .             |           |              |   | SOUTH PENN OIL                           |                 | l            |                |                   |                   | Company:                              | Supply Corp:      | Transmission Corp: | Company:          | Producing Inc     | Company: CB       | Company LLC:                          | TH Exploration    |
| 10*39461        | 5-25-16.1 | l w          | JAMES M PARSONS                         | COMPANY                                  | 1/8+            | 73           | 195            | N/A               | N/A               | 9A/227                                | 233/387           | 66A/69             | 67A/453           | 5/10/2000         | 13/108            | MB 96/307                             | LLC: 270A/479     |
| 10.39461        | 5-25-10.1 | - **         | JAMES WI FARSONS                        | COMPANY                                  | 1,01            | 927          | 639            |                   |                   | 7                                     |                   |                    |                   |                   |                   |                                       |                   |
| 10*18205        | 5-25-16   | 7            | MELISSA PAINTER AND SHAUN PAINTER       | TH EXPLORATION LLC                       | 1/8+            | 205A         | 891            | N/A               | N/A               | N/A                                   | N/A               | N/A                | N/A               | N/A               | N/A               | N/A                                   | N/A               |
| 10*18216        | 5-25-16   | Z            | BRUCE EDWARD BAILEY JR AND DARA BAILEY  | TH EXPLORATION LLC                       | 1/8+            | 929          | 99             | N/A               | N/A               | N/A                                   | N/A               | N/A                | N/A               | N/A               | N/A               | N/A                                   | N/A               |
| 10 10210        | 3 23 20   |              |   |  |                 | 941          | 235            |                   |                   |                                       |                   |                    |                   |                   |                   |                                       | ĺ                 |
| 10*19484        | 5-25-16   | l z          | FREDRIC & BETTY RICHTER                 | TH EXPLORATION LLC                       | 1/8+            | 195A         | 166            | N/A               | N/A               | N/A                                   | N/A               | N/A                | N/A               | N/A               | N/A               | N/A                                   | N/A               |
| 10*19485        | 5-25-16   | Z            | ELIZABETH A HARTLE                      | TH EXPLORATION LLC                       | 1/8+            | 941          | 233            | N/A               | N/A               | N/A                                   | N/A               | N/A                | N/A               | N/A               | N/A               | N/A                                   | N/A               |
|                 |           |              |   |  |                 | 944          | 101            |                   |                   |                                       |                   |                    |                   |                   |                   |                                       | i                 |
| 10*19643        | 5-25-16   | Z            | PATRICIA LOUISE CROW AND HOY GLENN CROW | TH EXPLORATION LLC                       | 1/8+            | 205A         | 877            | N/A               | N/A               | N/A                                   | N/A               | N/A                | N/A               | N/A               | N/A               | N/A                                   | N/A               |
|                 |           |              |   |  |                 | 988          | 439            |                   |                   |                                       |                   |                    |                   |                   |                   |                                       | 1 .               |
| 10*23349        | 5-25-16   | Z            | LYNN ELLEN BARCUS AND PAUL E BARCUS JR  | TH EXPLORATION LLC                       | 1/8+            | 211A         | 335            | N/A               | N/A               | N/A                                   | N/A               | N/A                | N/A               | N/A               | N/A               | N/A                                   | N/A               |
|                 |           | ļ            |   |  |                 | 988          | 436            |                   |                   |                                       | 81/8              |                    | N1/A              |                   |                   |                                       |                   |
| 10*23403        | 5-25-16   | Z            | JAN LEA ODONNELL AND KELLY ODONNELL     | TH EXPLORATION LLC                       | 1/8+            | 211A         | 338            | N/A               | N/A               | N/A                                   | N/A               | N/A                | N/A               | N/A               | N/A               | N/A                                   | N/A               |
| 1               |           |              |   | THE TWO I OR ATION HE                    | 1/0.            | 212A         |                | A1/A              | N/A               | N/A                                   | N/A               | N/A                | N/A               | N/A               | N/A               | N/A                                   | N/A               |
| 10*23426        | 5-25-16   | Z            | STEVEN L & CAROL J NEWMAN               | TH EXPLORATION LLC                       | 1/8+            | 988<br>1015  | 433<br>152     | N/A<br>N/A        | N/A               | N/A                                   | N/A               | N/A                | N/A               | N/A               | N/A               | N/A                                   | N/A               |
| 10*23702        | 5-25-16   | Z            | BRAD EYNON                              | TH EXPLORATION LLC TH EXPLORATION LLC    | 1/8+            | 214A         | 315            | N/A               | N/A               | N/A                                   | N/A               | N/A                | N/A               | N/A               | N/A               | N/A                                   | N/A               |
| 10*23836        | 5-25-16   | Z            | JON NEWMAN & SUSAN NEWMAN               | TH EXPLORATION LLC                       | 1/6+_           | 1057         | 339            | 14/6              | 145               | 1975                                  | 1975              | 11/7               | 197               | 14/2              | 14/6              | 11/7                                  |                   |
| 40*27406        | 5-25-16   | z            | LAURA J MAY AND ROGER A MAY             | TH EXPLORATION LLC                       | 1/8+            | 230A         | 662            | N/A               | N/A               | N/A                                   | N/A               | N/A                | N/A               | N/A               | N/A               | N/A                                   | N/A               |
| 10*27186        | 2-22-10   |              | LAUNA J IVIAT AIND ROGER A IVIAT        | THE LAN LONATION LLC                     | 1/01            | 230A         | 664            | 14/5              |                   | 1                                     | ,.,               | .,,,,              | .,,,,             | 1,                | 1 .,,,,           | ,,,                                   | .40               |
| 10*27209        | 5-25-16   | z            | ROBERT M MCCARDLE & NANCY R MCCARDLE    | TH EXPLORATION LLC                       | 1/8+            | 1057         | 337            | N/A               | N/A               | N/A                                   | N/A               | N/A                | N/A               | N/A               | N/A               | N/A                                   | N/A               |
| 10*27298        | 2-52-19   |              | NODERT WINCCARDLE & MANCER MICCARDLE    | THE EXILEDITATION LEC                    | 1,01            | 1058         | 568            | .,,,,             | 1,4,1             | 1                                     |                   |                    | 77                |                   | .,,               | ,                                     |                   |
| 10*27435        | 5-25-16   | z            | ROHN J BOWERS MARTIN                    | TH EXPLORATION LLC                       | 1/8+            | 230A         | 656            | N/A               | N/A               | N/A                                   | N/A               | N/A                | N/A               | N/A               | N/A               | N/A                                   | N/A               |
| 110 4/433       | J-2J-10   | <del> </del> |   | 1  | <del></del>     | 230A         | 660            | l                 | T                 | 1                                     |                   | l                  |                   | T                 | 1                 |                                       |                   |
|                 | 1         | 1            |   | 1  |                 |              |                |                   |                   |                                       |                   |                    |                   |                   |                   |                                       |                   |

| Lease ID | ТМР                | Tag      | Grantor, Lessor, Etc.                                    | Grantee, Lessee, Etc.  | Royalty |              | ok/Page    | Assignment | Assignment | Assignment | Assignment         | Assignment             | Assignment     | Assignment                       | Assignment               | Assignment         | Assignment          |
|----------|--------------------|----------|--|------------------------|---------|--------------|------------|------------|------------|------------|--------------------|------------------------|----------------|----------------------------------|--------------------------|--------------------|---------------------|
|          |                    |          | CRECORY T COORER AND SUICAN COORER                       | TH EXPLORATION LLC     | 1/8+    | 230A<br>1058 | 658<br>572 | N/A        | N/A        | N/A        | N/A                | N/A                    | N/A            | N/A                              | N/A                      | N/A                | N/A                 |
| 10*27444 | 5-25-16            | Z<br>Z   | GREGORY T COOPER AND SUSAN COOPER GASPARE A INGRASSELINO | TH EXPLORATION LLC     | 1/8+    | 234A         | 472        | N/A        | N/A        | N/A        | N/A                | N/A                    | N/A            | N/A                              | N/A                      | N/A<br>N/A         | N/A<br>N/A          |
| 10*27521 | 5-25-16<br>5-25-16 | <u>Z</u> | ROBERT LOHR  | TH EXPLORATION LLC     | 1/8+    | 1060         | 484        | N/A        | N/A        | N/A        | N/A                | N/A                    | N/A            | N/A                              | N/A                      | N/A                | N/A                 |
| 10*27569 | 5-25-16            |          | ROBERT LOHK  | TH EXPLORATION LLC     | 1/01    | 1063         | 605        | 19/5       | 14/5       | 14/6       | III/A              | 1975                   | 1975           | 17/7                             | 17/5                     | 19/6               | IV/A                |
| 10*27897 | 5-25-16            | z        | CAROL VASS   | TH EXPLORATION LLC     | 1/8+    | 232A         | 346        | N/A        | N/A        | N/A        | N/A                | N/A                    | N/A            | N/A                              | N/A                      | N/A                | N/A                 |
|          |                    |          |  |                        |         | 1064         | 145        |            |            |            |                    |                        |                |                                  |                          |                    |                     |
| 10*27898 | 5-25-16            | Z        | PAUL G FOX AND CYNTHIA G FOX                             | TH EXPLORATION LLC     | 1/8+    | 233A         | 522        | N/A        | N/A        | N/A        | N/A                | N/A                    | N/A            | N/A                              | N/A                      | N/A                | N/A                 |
| 10*27959 | 5-25-16            | Z        | STONE HILL MINERALS HOLDINGS LLC                         | TH EXPLORATION LLC     | 1/8+    | 1063         | 594        | N/A        | N/A        | N/A        | N/A                | N/A                    | N/A            | N/A                              | N/A                      | N/A                | N/A                 |
| 10*27963 | 5-25-16            | Z        | STONE HILL MINERALS HOLDINGS LLC                         | TH EXPLORATION LLC     | 1/8+    | 232A         | 339        | N/A        | N/A        | N/A        | N/A                | N/A                    | N/A            | N/A                              | N/A                      | N/A                | N/A                 |
|          |                    |          |  | 1                      |         | ļ            |            |            |            |            |                    |                        |                | Gastar                           | Merger - Gastar          | G4                 |                     |
|          |                    |          |  |                        |         |              |            |            |            |            |                    |                        |                | Exploration USA<br>Inc to Atinum | Exploration USA          | Gastar             | Atinum Marcellus    |
|          |                    |          |  |                        |         |              | 1          |            |            | i          | ì                  | i                      |                |                                  | Inc into Gastar          | Exploration Inc to | I LLC to TH         |
|          |                    |          |  | GASTAR EXPLORATION USA | 4 (0.   | 700          |            | 41/4       | 21/4       |            | N/A                |                        | 21.72          | Marcellus I LLC:                 | Exploration, Inc:        | TH Exploration II  | Exploration II LLC  |
| 10*14786 | 5-25-17            | BB       | TWILA O WHIPKEY  | INC                    | 1/8+    | 799          | 61         | N/A        | N/A        | N/A        | N/A                | N/A                    | N/A            | 806/1<br>Gastar                  | 21/41<br>Merger - Gastar | LLC: 36/9          | 43/563              |
|          |                    |          |  |                        |         |              |            |            |            |            |                    |                        |                | Exploration USA                  | Exploration USA          | Gastar             | Atinum Marcellus    |
|          |                    |          |  |                        |         |              |            |            |            |            |                    |                        |                | Inc to Atinum                    | Inc into Gastar          | Exploration Inc to | LLC to TH           |
|          |                    |          |  | GASTAR EXPLORATION USA |         |              |            |            |            |            |                    |                        |                | Marcellus I LLC:                 | Exploration, Inc:        | TH Exploration II  | Exploration II LLC  |
| 10*14797 | 5-25-17            | ВВ       | ORVILLE YOUNG  | INC                    | 1/8+    | 800          | 598        | N/A        | N/A        | N/A        | N/A                | N/A                    | N/A            | 806/1                            | 21/41                    | LLC: 36/9          | 43/563              |
| 10.14/9/ | 3-23-17            | ВВ       | ORVIELE TOONS  | iive -                 | 1,0.    | - 000        | 350        | .,,,,      | .,,,,      | .,,,,      | .,,,,,             |                        | .,,,,          | Gastar                           | Merger - Gastar          | EEC. 30/3          | 45/303              |
|          | 1                  |          |  |                        |         |              |            |            |            |            |                    |                        |                | Exploration USA                  | Exploration USA          | Gastar             | Atinum Marcellus    |
|          |                    |          |  |                        |         |              |            |            |            |            |                    |                        |                | Inc to Atinum                    | Inc into Gastar          | Exploration Inc to | I LLC to TH         |
|          |                    |          | ONWARD E BURGE TRUST STEPHEN W BURGE AS                  | GASTAR EXPLORATION USA |         |              |            |            |            |            |                    |                        |                | Marcellus I LLC:                 | Exploration, Inc:        | TH Exploration II  | Exploration II LLC  |
| 10*14822 | 5-25-17            | ВВ       | TRUSTEE  | INC                    | 1/8+    | 876          | 463        | N/A        | N/A        | N/A        | N/A                | N/A                    | N/A            | 35/144                           | 21/41                    | LLC: 36/9          | 43/563              |
|          |                    |          |  |                        |         |              |            |            |            |            |                    |                        |                | Gastar                           | Merger - Gastar          |                    |                     |
|          |                    |          |  |                        |         |              |            |            |            |            |                    |                        |                | Exploration USA                  | Exploration USA          | Gastar             | Atinum Marcellus    |
|          |                    |          |  |                        |         |              |            |            |            |            |                    |                        |                | Inc to Atinum                    | Inc into Gastar          | Exploration Inc to | I LLC to TH         |
| ì        | 1                  |          | SARAH L BURGE TRUST STEPHEN W BURGE AS                   | GASTAR EXPLORATION USA |         |              |            |            |            |            |                    |                        |                | Marcellus I LLC:                 | Exploration, Inc:        | TH Exploration II  | Exploration II LLC: |
| 10*14823 | 5-25-17            | BB       | TRUSTEE  | INC                    | 1/8+    | 876          | 459        | N/A        | N/A        | N/A        | N/A                | N/A                    | N/A            | 35/144                           | 21/41<br>Weiger - Syviv  | LLC: 36/9          | 43/563              |
|          |                    | İ        |  |                        |         |              |            |            |            |            |                    | Gastar Exploration     |                | i                                | Exchange                 |                    |                     |
|          |                    |          |  |                        |         |              |            |            |            |            |                    | USA Inc and Atinum     | Chesapeake     | Statoil USA                      | Titleholder LLC          |                    |                     |
|          |                    |          |  |                        |         |              |            |            |            |            |                    | Marcellus I LLC to     | Appalachia LLC | Onshore                          | mered with and           | Statoil USA        |                     |
| l        |                    |          |  |                        |         | l            |            |            |            |            | Gastar Exploration | Chesapeake             | to SWN         | Properties Inc to                | into SWN                 | Onshore            | SWN Production      |
|          |                    |          |  |                        |         |              |            |            |            |            | USA Inc to Atinum  | Appalachia LLC and     | Production     | SWN Exchange                     | Production               | Properties Inc to  | Company LLC to      |
| 1        |                    |          |  | GASTAR EXPLORATION USA |         |              |            |            |            |            | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:   | Titleholder LLC:                 | Company LLC: CB          | TH Exploration     | TH Exploration      |
| 10*17195 | 5-25-17            | ВВ       | PATRICIA HARTMAN   | INC                    | 1/8+    | 695          | 317        | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311 | 33/110         | 33/424                           | 19/624                   | LLC: 41/238        | LLC: 41/256         |
| 10-1/195 | 5-23-17            | DD       | PATRICIA HARTIMAN  | inc.                   | 1/01    | 1 055        | - 31/      | 147        | 1471       | 14/7       | 25,555             | Troperties inc. 27/311 | 33/110         | 33/424                           | werger - Swyin           | 11/238             | LLC. 41/230         |
|          |                    |          |  |                        |         | l            |            |            |            | •          |                    | Gastar Exploration     |                |                                  | Exchange                 |                    |                     |
|          | 1                  |          |  |                        |         |              |            |            |            |            |                    | USA Inc and Atinum     | Chesapeake     | Statoil USA                      | Titleholder LLC          |                    |                     |
| I        |                    |          |  |                        |         | 1            |            |            |            | 1          |                    | Marcellus I LLC to     | Appalachia LLC | Onshore                          | mered with and           | Statoil USA        |                     |
| 1        | 1                  |          |  |                        |         |              |            |            |            |            | Gastar Exploration | Chesapeake             | to SWN         | Properties Inc to                | into SWN                 | Onshore            | SWN Production      |
|          |                    | ]        |  |                        |         |              |            |            |            |            | USA Inc to Atinum  | Appalachia LLC and     | Production     | SWN Exchange                     | Production               | Properties Inc to  | Company LLC to      |
| 1        |                    | 1        |  | GASTAR EXPLORATION USA |         |              |            |            |            |            | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:   | Titleholder LLC:                 | Company LLC: CB          | TH Exploration     | TH Exploration      |
| 10*17196 | 5-25-17            | ВВ       | DELBERT R. MONTGOMERY                                    | INC                    | 1/8+    | 695          | 311        | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311 | 33/110         | 33/424                           | 19/624                   | LLC: 41/238        | LLC: 41/256         |

| Lease ID | TMP     | Tag | Grantor, Lessor, Etc.              | Grantee, Lessee, Etc.    | Royalty | Deed Bo | ok/Page | Assignment | Assignment | Assignment | Assignment         | Assignment                            | Assignment                | Assignment                 | Assignment                        | Assignment        | Assignment     |
|----------|---------|-----|------------------------------------|--------------------------|---------|---------|---------|------------|------------|------------|--------------------|---------------------------------------|---------------------------|----------------------------|-----------------------------------|-------------------|----------------|
|          |         |     |                                    |                          |         |         |         |            |            |            |                    | Gastar Exploration                    |                           |                            | Exchange                          |                   |                |
|          | 1       | İ   |                                    |                          | 1       |         |         |            |            | 1          |                    | USA Inc and Atinum                    | Chesapeake                | Statoil USA                | Titleholder LLC                   |                   |                |
|          | 1       |     |                                    |                          | 1       |         |         |            |            |            |                    | Marcellus I LLC to                    | Appalachia LLC            | Onshore                    | mered with and                    | Statoil USA       |                |
|          |         |     |                                    |                          |         |         |         |            |            |            | Gastar Exploration | Chesapeake                            | to SWN                    | Properties Inc to          | into SWN                          | Onshore           | SWN Production |
|          |         |     |                                    |                          |         |         |         |            |            |            | USA Inc to Atinum  | Appalachia LLC and                    | Production                | SWN Exchange               | Production                        | Properties Inc to | 1              |
|          |         |     |                                    | GASTAR EXPLORATION USA   |         |         |         |            |            |            | Marcellus I LLC:   | Statoil USA Onshore                   | Company LLC:              | Titleholder LLC:           | Company LLC: CB                   | TH Exploration    | TH Exploration |
| 10*17197 | 5-25-17 | ВВ  | GLORIA J. SIMMONS HAROLD SIMMONS   | INC                      | 1/8+    | 695     | 313     | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311                | 33/110                    | 33/424                     | 19/624                            | LLC: 41/238       | LLC: 41/256    |
| 10.17197 | 3-23-17 | 55  | GEORIA'S. SIMMONS TIANGED SIMMONS  |                          | 1 7 7   |         |         |            |            |            |                    |                                       |                           |                            | ivierger - Svviv                  |                   |                |
|          |         |     |                                    | İ                        | İ       | İ       |         |            |            | İ          |                    | Gastar Exploration                    | 61                        | 51.1.11.154                | Exchange                          |                   |                |
|          |         |     |                                    |                          |         |         |         |            |            |            |                    | USA Inc and Atinum                    | Chesapeake                | Statoil USA                | Titleholder LLC                   |                   |                |
|          |         | i   |                                    |                          |         |         |         |            |            |            | C                  | Marcellus I LLC to                    | Appalachia LLC            | Onshore                    | mered with and                    | Statoil USA       |                |
|          |         |     |                                    | 1                        |         | 1       |         |            |            |            | Gastar Exploration | Chesapeake                            | to SWN                    | Properties Inc to          | 1                                 | Onshore           | SWN Production |
|          | 1       |     |                                    | l                        |         |         | 1 1     |            |            |            | USA Inc to Atinum  | Appalachia LLC and                    | Production                | SWN Exchange               | Production                        | Properties Inc to |                |
|          | İ       |     |                                    | GASTAR EXPLORATION USA   | 4.0     |         |         | 11/1       | N/A        | N/A        | Marcellus I LLC:   | Statoil USA Onshore                   | Company LLC:              | Titleholder LLC:<br>33/424 | Company LLC: CB                   | TH Exploration    | TH Exploration |
| 10*17199 | 5-25-17 | ВВ  | PAMELA L DRAZIC AND JEFFREY DRAZIC | INC                      | 1/8+    | 695     | 315     | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311                | 33/110                    | 33/424                     | 19/624<br>Ivierger - SWIN         | LLC: 41/238       | LLC: 41/256    |
|          | 1       | 1   |                                    |                          |         |         |         |            |            |            |                    | Gastar Exploration                    |                           |                            | Exchange                          |                   | 1              |
|          | 1       | 1   |                                    | 1                        | ]       | ]       |         |            |            |            |                    | USA Inc and Atinum                    | Chesapeake                | Statoil USA                | Titleholder LLC                   |                   |                |
|          | 1       | 1   |                                    |                          |         |         |         |            |            |            |                    | Marcellus I LLC to                    | Appalachia LLC            | Onshore                    | mered with and                    | Statoil USA       |                |
| ì        |         |     |                                    |                          |         |         |         |            |            |            | Gastar Exploration | Chesapeake                            | to SWN                    | Properties Inc to          | into SWN                          | Onshore           | SWN Production |
|          |         | İ   |                                    |                          |         |         |         |            |            |            | USA Inc to Atinum  | Appalachia LLC and                    | Production                | SWN Exchange               | Production                        | Properties Inc to | Company LLC to |
|          |         |     |                                    | GASTAR EXPLORATION USA   |         |         |         |            |            |            | Marcellus I LLC:   | Statoil USA Onshore                   | Company LLC:              | Titleholder LLC:           | Company LLC: CB                   | TH Exploration    | TH Exploration |
| 10*17200 | 5-25-17 | ВВ  | STEPHANIE L BATES                  | INC                      | 1/8+    | 697     | 156     | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311                | 33/110                    | 33/424                     | 19/624<br>Werger - Syviv          | LLC: 41/238       | LLC: 41/256    |
|          |         |     |                                    |                          | 1       |         |         |            |            |            |                    | Gastar Exploration                    |                           |                            | Exchange                          | i                 |                |
| ĺ        | 1       | l   |                                    | 1                        |         |         | 1 1     |            |            | 1          |                    | USA Inc and Atinum                    | Chesapeake                | Statoil USA                | Titleholder LLC                   | 1                 |                |
|          |         |     |                                    |                          |         |         |         |            |            |            |                    | Marcellus I LLC to                    | Appalachia LLC            | Onshore                    | mered with and                    | Statoil USA       |                |
|          |         |     |                                    |                          |         |         |         |            |            |            | Gastar Exploration | Chesapeake                            | to SWN                    | Properties Inc to          | 1                                 | Onshore           | SWN Production |
|          | 1       |     |                                    | - 1                      | 1       |         |         |            |            |            | USA Inc to Atinum  | Appalachia LLC and                    | Production                | SWN Exchange               | Production                        | Properties Inc to | Company LLC to |
|          | İ       |     |                                    | GASTAR EXPLORATION USA   |         |         |         |            |            |            | Marcellus I LLC:   | Statoil USA Onshore                   | Company LLC:              | Titleholder LLC:           | Company LLC: CB                   | TH Exploration    | TH Exploration |
| 10*17201 | 5-25-17 | ВВ  | DENISE A GALE                      | INC                      | 1/8+    | 697     | 395     | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311                | 33/110                    | 33/424                     | 19/624                            | LLC: 41/238       | LLC: 41/256    |
| 10 1/201 | 3 23 21 | 1   |                                    |                          |         |         |         |            |            |            |                    | Contan Fundametica                    |                           |                            | Ivierger - Svviv                  |                   |                |
|          | 1       |     |                                    | 1                        |         | İ       |         |            |            |            |                    | Gastar Exploration                    | Character                 | C4-4-ILLICA                | Exchange                          |                   |                |
|          |         |     |                                    | 1                        | 1       |         |         |            |            |            |                    | USA Inc and Atinum Marcellus I LLC to | Chesapeake Appalachia LLC | Statoil USA<br>Onshore     | Titleholder LLC<br>mered with and | Statoil USA       |                |
|          | İ       |     |                                    | 1                        |         |         |         |            |            |            | Gastar Exploration | Chesapeake                            | to SWN                    | Properties Inc to          | into SWN                          | Onshore           | SWN Production |
|          | ı       |     |                                    |                          | ]       |         |         |            |            |            | USA Inc to Atinum  | Appalachia LLC and                    | Production                | SWN Exchange               | Production                        | Properties Inc to | 1              |
|          | 1       |     |                                    | CACTAR EVEL ORATION LICA | 1       |         |         |            |            |            | Marcellus I LLC:   | Statoil USA Onshore                   | Company LLC:              | Titleholder LLC:           | Company LLC: CB                   | TH Exploration    | TH Exploration |
|          | 1       |     |                                    | GASTAR EXPLORATION USA   | 1/8+    | 697     | 385     | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311                | 33/110                    | 33/424                     | 19/624                            | LLC: 41/238       | LLC: 41/256    |
| 10*17202 | 5-25-17 | BB  | JANE GALE                          | INC                      | 1/0+    | 097     | 363     | IN/A       | N/A        | IV/A       | 23/333             | rioperties inc. 27/311                | 33/110                    | 33/424                     | Ivierger - SWIN                   | LLC. 41/238       | LLC. 41/230    |
|          |         | 1   |                                    |                          | 1       |         |         |            |            |            | -                  | Gastar Exploration                    |                           |                            | Exchange                          |                   |                |
|          | 1       | 1   |                                    |                          |         |         |         |            |            |            |                    | USA Inc and Atinum                    | Chesapeake                | Statoil USA                | Titleholder LLC                   |                   |                |
|          | 1       | 1   |                                    |                          | 1       | 1       |         |            |            | 1          |                    | Marcellus I LLC to                    | Appalachia LLC            | Onshore                    | mered with and                    | Statoil USA       |                |
|          | 1       | 1   |                                    |                          |         |         |         |            |            |            | Gastar Exploration | Chesapeake                            | to SWN                    | Properties Inc to          | into SWN                          | Onshore           | SWN Production |
|          | 1       | 1   |                                    |                          |         |         |         |            |            | 1          | USA Inc to Atinum  | Appalachia LLC and                    | Production                | SWN Exchange               | Production                        | Properties Inc to | 1 ''           |
|          | 1       |     |                                    | GASTAR EXPLORATION USA   |         |         |         |            |            |            | Marcellus I LLC:   | Statoil USA Onshore                   | Company LLC:              | Titleholder LLC:           | Company LLC: CB                   | TH Exploration    | TH Exploration |
| 10*17203 | 5-25-17 | ВВ  | BARRY RAY MOORE                    | INC                      | 1/8+    | 697     | 387     | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311                | 33/110                    | 33/424                     | 19/624                            | LLC: 41/238       | LLC: 41/256    |

| Lease ID | ТМР     | Tag | Grantor, Lessor, Etc.                   | Grantee, Lessee, Etc.  | Royalty | Deed Bo | ok/Page | Assignment | Assignment | Assignment | Assignment         | Assignment             | Assignment     | Assignment        | Assignment                 | Assignment        | Assignment     |
|----------|---------|-----|---|------------------------|---------|---------|---------|------------|------------|------------|--------------------|------------------------|----------------|-------------------|----------------------------|-------------------|----------------|
|          |         |     |   |                        |         |         |         |            |            |            |                    | Gastar Exploration     | 1              |                   | Exchange                   |                   |                |
|          |         |     |   | 1                      |         |         |         |            |            |            |                    | USA Inc and Atinum     | Chesapeake     | Statoil USA       | Titleholder LLC            |                   |                |
|          |         |     |   |                        |         |         |         |            |            | 1          |                    | Marcellus I LLC to     | Appalachia LLC | Onshore           | mered with and             | Statoil USA       |                |
| 1        |         |     |   |                        |         |         |         |            |            |            | Gastar Exploration | Chesapeake             | to SWN         | Properties Inc to | into SWN                   | Onshore           | SWN Production |
| 1        |         |     |   |                        |         |         |         |            |            |            | USA Inc to Atinum  | Appalachia LLC and     | Production     | SWN Exchange      | Production                 | Properties Inc to | Company LLC to |
|          |         |     |   | GASTAR EXPLORATION USA |         |         |         |            |            |            | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:   | Titleholder LLC:  | Company LLC: CB            | TH Exploration    | TH Exploration |
| 10*17204 | 5-25-17 | BB  | CLARENCE RICHARD ZESIGER & MARY ZESIGER | INC                    | 1/8+    | 697     | 391     | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311 | 33/110         | 33/424            | 19/624<br>Ivierger - Svviv | LLC: 41/238       | LLC: 41/256    |
|          |         |     |   |                        |         |         |         |            |            |            |                    | Gastar Exploration     |                |                   | Exchange                   |                   |                |
| 1        |         |     |   |                        |         |         |         |            |            |            |                    | USA Inc and Atinum     | Chesapeake     | Statoil USA       | Titleholder LLC            | i                 |                |
| İ        |         |     |   |                        |         |         |         |            |            |            |                    | Marcellus I LLC to     | Appalachia LLC | Onshore           | mered with and             | Statoil USA       |                |
|          |         |     |   |                        |         |         |         |            |            |            | Gastar Exploration | Chesapeake             | to SWN         | Properties Inc to | into SWN                   | Onshore           | SWN Production |
|          |         |     |   |                        |         |         |         |            |            |            | USA Inc to Atinum  | Appalachia LLC and     | Production     | SWN Exchange      | Production                 | Properties Inc to | Company LLC to |
|          |         |     |   | GASTAR EXPLORATION USA |         |         |         |            |            |            | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:   | Titleholder LLC:  | Company LLC: CB            | TH Exploration    | TH Exploration |
| 10*17206 | 5-25-17 | BB  | M VIRGINIA & EDWARD C MARSH             | INC                    | 1/8+    | 697     | 399     | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311 | 33/110         | 33/424            | 19/624<br>Ivierger - Swin  | LLC: 41/238       | LLC: 41/256    |
|          |         |     |   |                        |         |         |         |            |            |            |                    | Gastar Exploration     |                |                   | Exchange                   |                   |                |
|          |         |     |   |                        |         |         |         |            |            |            |                    | USA Inc and Atinum     | Chesapeake     | Statoil USA       | Titleholder LLC            |                   |                |
|          |         |     |   |                        |         |         |         |            |            |            |                    | Marcellus I LLC to     | Appalachia LLC | Onshore           | mered with and             | Statoil USA       |                |
|          |         |     |   | 1                      |         |         |         |            |            |            | Gastar Exploration | Chesapeake             | to SWN         | Properties Inc to | into SWN                   | Onshore           | SWN Production |
| i        |         |     |   |                        |         |         |         |            |            |            | USA Inc to Atinum  | Appalachia LLC and     | Production     | SWN Exchange      | Production                 | Properties Inc to | Company LLC to |
| i        | ì       |     | DEBORAH K. KLIMASZEWSKI FRANK           | GASTAR EXPLORATION USA |         |         |         |            |            |            | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:   | Titleholder LLC:  | Company LLC: CB            | TH Exploration    | TH Exploration |
| 10*17207 | 5-25-17 | ВВ  | KLIMASZEWSKI, SR.                       | INC                    | 1/8+    | 697     | 389     | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311 | 33/110         | 33/424            | 19/624<br>Weiger - Swin    | LLC: 41/238       | LLC: 41/256    |
|          |         |     |   |                        |         |         |         |            |            |            |                    | Gastar Exploration     |                | 1                 | Exchange                   | 1                 |                |
|          |         |     |   |                        |         | [       |         |            |            |            |                    | USA Inc and Atinum     | Chesapeake     | Statoil USA       | Titleholder LLC            | 1                 |                |
|          |         |     |   |                        |         |         |         |            |            |            |                    | Marcellus I LLC to     | Appalachia LLC | Onshore           | mered with and             | Statoil USA       |                |
|          |         |     |   |                        |         |         |         |            |            |            | Gastar Exploration | Chesapeake             | to SWN         | Properties Inc to | into SWN                   | Onshore           | SWN Production |
|          |         |     |   |                        |         | İ       |         |            |            |            | USA Inc to Atinum  | Appalachia LLC and     | Production     | SWN Exchange      | Production                 | Properties Inc to | Company LLC to |
|          |         | ļ   |   | GASTAR EXPLORATION USA |         |         |         |            |            |            | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:   | Titleholder LLC:  | Company LLC: CB            | TH Exploration    | TH Exploration |
| 10*17210 | 5-25-17 | BB  | MARILYN NOEL                            | INC                    | 1/8+    | 697     | 393     | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311 | 33/110         | 33/424            | 19/624<br>Werger - Swin    | LLC: 41/238       | LLC: 41/256    |
|          |         |     |   |                        |         |         |         |            |            |            |                    | Gastar Exploration     | İ              |                   | Exchange                   |                   |                |
|          |         |     |   |                        |         |         |         |            |            |            |                    | USA Inc and Atinum     | Chesapeake     | Statoil USA       | Titleholder LLC            |                   |                |
|          |         |     |   |                        |         |         |         |            |            |            |                    | Marcellus I LLC to     | Appalachia LLC | Onshore           | mered with and             | Statoil USA       |                |
|          |         |     |   |                        |         |         |         |            |            |            | Gastar Exploration | Chesapeake             | to SWN         | Properties Inc to | into SWN                   | Onshore           | SWN Production |
|          | 1       |     |   |                        |         | İ       |         |            |            |            | USA Inc to Atinum  | Appalachia LLC and     | Production     | SWN Exchange      | Production                 | Properties Inc to | Company LLC to |
|          |         |     |   | GASTAR EXPLORATION USA |         |         |         |            |            | 1          | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:   | Titleholder LLC:  | Company LLC: CB            | TH Exploration    | TH Exploration |
| 10*17211 | 5-25-17 | ВВ  | GARY WAYNE ZESIGER & VITORINA ZESIGER   | INC                    | 1/8+    | 697     | 397     | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311 | 33/110         | 33/424            | 19/624                     | LLC: 41/238       | LLC: 41/256    |
|          |         |     |   |                        |         |         |         |            |            |            |                    | Gastar Exploration     |                |                   | Exchange                   |                   |                |
|          |         |     |   |                        |         |         |         |            |            |            |                    | USA Inc and Atinum     | Chesapeake     | Statoil USA       | Titleholder LLC            |                   |                |
|          |         |     |   |                        |         |         |         |            |            | 1          |                    | Marcellus I LLC to     | Appalachia LLC | Onshore           | mered with and             | Statoil USA       |                |
|          |         |     |   |                        |         |         |         |            |            |            | Gastar Exploration | Chesapeake             | to SWN         | Properties Inc to | into SWN                   | Onshore           | SWN Production |
|          | 1       |     | 1                                       |                        |         |         |         |            |            |            | USA Inc to Atinum  | Appalachia LLC and     | Production     | SWN Exchange      | Production                 | Properties Inc to | Company LLC to |
|          |         | 1   |   | GASTAR EXPLORATION USA |         |         |         |            |            |            | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:   | Titleholder LLC:  | Company LLC: CB            | TH Exploration    | TH Exploration |
| 10*17212 | 5-25-17 | ВВ  | DARRELL NEWLAND LYDIA NEWLAND           | INC                    | 1/8+    | 697     | 158     | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311 | 33/110         | 33/424            | 19/624                     | LLC: 41/238       | LLC: 41/256    |

| Lease ID | ТМР     | Tag      | Grantor, Lessor, Etc.                       | Grantee, Lessee, Etc.  | Royalty | Deed Bo     | ok/Page    | Assignment | Assignment  | Assignment       | Assignment                        | Assignment             | Assignment        | Assignment        | Assignment         | Assignment        | Assignment                 |
|----------|---------|----------|---|------------------------|---------|-------------|------------|------------|-------------|------------------|-----------------------------------|------------------------|-------------------|-------------------|--------------------|-------------------|----------------------------|
|          |         |          |   |                        |         |             |            |            |             |                  |                                   | Gastar Exploration     |                   |                   | Exchange           |                   |                            |
|          |         |          |   |                        |         |             |            |            |             |                  |                                   | USA Inc and Atinum     | Chesapeake        | Statoil USA       | Titleholder LLC    |                   |                            |
|          |         |          |   |                        |         |             |            |            |             |                  |                                   | 1                      |                   | 1                 | 1                  |                   |                            |
|          |         |          |   | !                      |         |             |            |            |             |                  | Contraction to the contraction of | Marcellus I LLC to     | Appalachia LLC    | Onshore           | mered with and     | Statoil USA       |                            |
|          |         |          |   |                        |         |             |            |            |             |                  | Gastar Exploration                | Chesapeake             | to SWN            | Properties Inc to |                    | Onshore           | SWN Production             |
|          |         |          |   |                        |         |             |            |            |             |                  | USA Inc to Atinum                 | Appalachia LLC and     | Production        | SWN Exchange      | Production         | Properties Inc to |                            |
|          |         | 1        |   | GASTAR EXPLORATION USA |         |             |            |            |             |                  | Marcellus I LLC:                  | Statoil USA Onshore    | Company LLC:      | Titleholder LLC:  | Company LLC: CB    | 1 '               | TH Exploration             |
| 10*17213 | 5-25-17 | BB       | CAROL DEEN GARDNER                          | INC                    | 1/8+    | 697         | 154        | N/A        | N/A         | N/A              | 23/353                            | Properties Inc: 27/311 | 33/110            | 33/424            | 19/624             | LLC: 41/238       | LLC: 41/256                |
| 10*18275 | 5-25-17 | BB       | BETTY JEAN NEELY                            | TH EXPLORATION LLC     | 1/8+    | 929         | 60         | N/A        | N/A         | N/A              | N/A                               | N/A                    | N/A               | N/A               | N/A                | N/A               | N/A                        |
|          |         | <b>,</b> | MARY LOU WILSON AND STANLEY D WILSON        |                        |         |             |            |            |             |                  |                                   |                        | l .               | l .               |                    |                   | 1                          |
| 10*18366 | 5-25-17 | BB       | MICHAEL WILSON AIF                          | TH EXPLORATION LLC     | 1/8+    | 931         | 311        | N/A        | N/A         | N/A              | N/A                               | N/A                    | N/A               | N/A               | N/A                | N/A               | N/A                        |
| 10*18369 | 5-25-17 | BB       | CRAIG ALAN YOHO AND DONNA M YOHO            | TH EXPLORATION LLC     | 1/8+    | 931         | 303        | N/A        | N/A         | N/A              | N/A                               | N/A                    | N/A               | N/A               | N/A                | N/A               | N/A                        |
| 10*18370 | 5-25-17 | BB       | SAMUEL D YOHO                               | TH EXPLORATION LLC     | 1/8+    | 931         | 300        | N/A        | N/A         | N/A              | N/A                               | N/A                    | N/A               | N/A               | N/A                | N/A               | N/A                        |
|          |         |          | DAVID N DEVICK TRUSTEE OF THE TONI JO MASON |                        | 4/0     |             | 400        |            | l           |                  | l                                 |                        | l                 |                   |                    |                   | 1                          |
| 10*18379 | 5-25-17 | ВВ       | LIVING TRUST                                | TH EXPLORATION LLC     | 1/8+    | 932         | 439        | N/A        | N/A         | N/A              | N/A                               | N/A                    | N/A               | N/A               | N/A                | N/A               | N/A                        |
| 10*19540 | 5-25-17 | ВВ       | ERICA M MASON                               | TH EXPLORATION LLC     | 1/8+    | 942         | 53         | N/A        | N/A         | N/A              | N/A                               | N/A                    | N/A               | N/A               | N/A                | N/A               | N/A                        |
| 10*19652 | 5-25-17 | BB       | JACK R HAMMERS                              | TH EXPLORATION LLC     | 1/8+    | 944         | 108        | N/A        | N/A         | N/A              | N/A                               | N/A                    | N/A               | N/A               | N/A                | N/A               | N/A                        |
| 10*19903 | 5-25-17 | BB       | PAUL F HAMMERS                              | TH EXPLORATION LLC     | 1/8+    | 948         | 236        | N/A        | N/A         | N/A              | N/A                               | N/A                    | N/A               | N/A               | N/A                | N/A               | N/A                        |
| 10*22008 | 5-25-17 | BB       | COLIN R YOHO AND NORMA L YOHO               | TH EXPLORATION LLC     | 1/8+    | 953         | 304        | N/A        | N/A         | N/A              | N/A                               | N/A                    | N/A               | N/A               | N/A                | N/A               | N/A                        |
| 10*22025 | 5-25-17 | BB       | MARK EUGENE YOHO & MARY YOHO                | TH EXPLORATION LLC     | 1/8+    | 960         | 544<br>459 | N/A<br>N/A | N/A<br>N/A  | N/A<br>N/A       | N/A<br>N/A                        | N/A<br>N/A             | N/A               | N/A               | N/A                | N/A               | N/A                        |
| 10*22129 | 5-25-17 | BB       | JANICE N HAUDENSCHILT                       | TH EXPLORATION LLC     | 1/8+    | 961         |            |            | <del></del> | <del></del>      |                                   |                        | N/A               | N/A               | N/A                | N/A               | N/A                        |
| 10*22441 | 5-25-17 | BB       | APRIL ROSE POSTLETHWAIT                     | TH EXPLORATION LLC     | 1/8+    | 963         | 646        | N/A        | N/A         | N/A              | N/A<br>N/A                        | N/A                    | N/A               | N/A               | N/A                | N/A               | N/A                        |
| 10*22510 | 5-25-17 | BB       | DONNA V YOHO                                | TH EXPLORATION LLC     | 1/8+    | 964         | 432        | N/A        | N/A         | N/A              |                                   | N/A                    | N/A               | N/A               | N/A                | N/A               | N/A                        |
| 10*23372 | 5-25-17 | BB       | DEWEY A MILICIA                             | TH EXPLORATION LLC     | 1/8+    | 1008<br>988 | 320<br>429 | N/A<br>N/A | N/A<br>N/A  | N/A<br>N/A       | N/A<br>N/A                        | N/A<br>N/A             | N/A               | N/A               | N/A                | N/A               | N/A                        |
| 10*23373 | 5-25-17 | BB       | DANA MILICIA HUMPHREYS                      | TH EXPLORATION LLC     | 1/8+    |             |            | N/A<br>N/A | N/A<br>N/A  | <del></del>      | <del></del>                       | <u> </u>               | N/A               | N/A               | N/A                | N/A               | N/A                        |
| 10*23446 | 5-25-17 | BB       | NICOLETTA MILICIA BLOODWORTH                | TH EXPLORATION LLC     | 1/8+    | 1008        | 316<br>548 |            | N/A<br>N/A  | N/A              | N/A<br>N/A                        | N/A                    | N/A               | N/A               | N/A                | N/A               | N/A                        |
| 10*25627 | 5-25-17 | BB       | CHESTNUT HOLDINGS INC                       | TH EXPLORATION LLC     | 1/8+    | 1034        | 548        | N/A        | N/A         | N/A              | N/A                               | N/A                    | N/A               | N/A               | N/A                | N/A               | N/A                        |
|          |         |          |   |                        |         |             |            |            |             |                  |                                   |                        |                   |                   | Name Chane -       |                   |                            |
|          |         |          |   |                        |         |             |            |            | ŀ           |                  | Gastar Exploration                |                        |                   | Merger - SWN      | Statoil USA        |                   |                            |
|          |         |          |   |                        |         |             |            |            |             |                  | USA Inc and Atinum                |                        |                   | Exchange          | Onshore            | 1                 |                            |
|          |         |          |   |                        |         |             |            |            |             |                  | Marcellus I LLC to                |                        | Statoil USA       | Titleholder LLC   | Properties Inc     | l                 |                            |
|          |         |          |   |                        |         |             |            |            |             | Gastar           | Chesapeake                        |                        | Onshore           | mered with and    | chaned its name to |                   | Equinor USA                |
|          |         |          |   |                        |         |             |            |            |             | Exploration USA  | Appalachia LLC and                | Chesapeake             | Properties Inc to | into SWN          | Equinor USA        | SWN Production    | Onshore                    |
|          | 1       |          | 1   |                        |         |             |            |            |             | Inc to Atinum    | Statoil USA                       | Appalachia LLC to      | SWN Exchange      | Production        | Onshore            | Company LLC to    | 1 1                        |
| 1        | 1       |          |   | GASTAR EXPLORATION USA | İ       |             |            |            |             | Marcellus I LLC: | Onshore Properties                | SWN Production         | Titleholder LLC:  | Company LLC: CB   | 1                  | TH Exploration    | 1 ' 1                      |
| 10*27078 | 5-25-17 | ВВ       | CECILIA D NEWLAND                           | INC                    | 1/8+    | 697         | 381        | N/A        | N/A         | 23/353           | Inc: 27/311                       | Company LLC: 33/110    | 33/424            | 19/624            | 2/427              | LLC: 44/141       | TH Exploration LLC: 44/147 |
| 10.5/0/8 | 3-23-17 | DD .     | CECILIA D NEWLAND                           | iive .                 | 1/01    | 037         | 301        | 19/5       | 19/7        | 23/333           | 1110. 27/311                      | Company LLC. 33/110    | 33/424            | 13/024            | 2/42/              | LLC. 44/141       | LLC: 44/14/                |
|          | ļ       |          |   | <b>l</b> i             |         |             |            |            |             | 1                |                                   |                        |                   |                   | Name Chane -       |                   |                            |
|          | 1       |          |   |                        |         |             |            |            |             |                  | Gastar Exploration                |                        |                   | Merger - SWN      | Statoil USA        |                   |                            |
|          | 1       |          |   |                        |         |             |            |            |             | 1                | USA Inc and Atinum                |                        |                   | Exchange          | Onshore            | 1                 |                            |
|          |         |          |   |                        |         |             |            |            |             |                  | Marcellus I LLC to                |                        | Statoil USA       | Titleholder LLC   | Properties Inc     |                   |                            |
| 1        |         |          |   |                        |         |             |            |            |             | Gastar           | Chesapeake                        |                        | Onshore           | mered with and    | chaned its name to |                   | Equinor USA                |
|          |         |          |   |                        |         |             |            |            |             | Exploration USA  | Appalachia LLC and                | Chesapeake             | Properties Inc to | into SWN          | Equinor USA        | SWN Production    | Onshore                    |
|          |         | 1        |   |                        |         |             |            |            |             | Inc to Atinum    | Statoil USA                       | Appalachia LLC to      | SWN Exchange      | Production        | Onshore            | Company LLC to    | Properties Inc to          |
|          |         |          |   | GASTAR EXPLORATION USA |         |             |            |            |             | Marcellus I LLC: | Onshore Properties                | SWN Production         | Titleholder LLC:  | Company LLC: CB   | 1                  | TH Exploration    | TH Exploration             |
| 10*27095 | 5-25-17 | ВВ       | DAPHNE HUFFMAN AND CHARLES HUFFMAN          | INC                    | 1/8+    | 697         | 383        | N/A        | N/A         | 23/353           | Inc: 27/311                       | Company LLC: 33/110    | 33/424            | 19/624            | 2/427              | LLC: 44/141       |                            |
| 10*27085 | 2-22-1/ | I BB     | DALUISE UOLLINIAIN AIND CHARLES UOLLINIAIN  | INC                    | 1/07    | 05/         | 303        | IN/A       | I N/A       | [ 23/333         | I IIIC. 27/311                    | Company LLC. 33/110    | 33/424            | 19/024            |                    | LLC: 44/141       | LLC: 44/147                |

|          |         |      |   |                        |         |         |         |            | l          | l                |                    |                        | l                 |                   |                              | l                  | l                   |
|----------|---------|------|---|------------------------|---------|---------|---------|------------|------------|------------------|--------------------|------------------------|-------------------|-------------------|------------------------------|--------------------|---------------------|
| Lease ID | TMP     | Tag  | Grantor, Lessor, Etc.                   | Grantee, Lessee, Etc.  | Royalty | Deed Bo | ok/Page | Assignment | Assignment | Assignment       | Assignment         | Assignment             | Assignment        | Assignment        | Assignment                   | Assignment         | Assignment          |
|          |         |      |   |                        |         |         |         |            |            |                  |                    |                        |                   |                   | Name Chane -                 |                    |                     |
| 1        |         |      |   | i l                    |         |         |         |            |            | i                | Gastar Exploration |                        |                   | Merger - SWN      | Statoil USA                  |                    |                     |
|          |         |      |   |                        |         |         |         |            |            |                  | USA Inc and Atinum |                        |                   | Exchange          | Onshore                      |                    |                     |
| Į.       |         |      |   |                        |         |         |         |            |            | 1 .              | Marcellus I LLC to |                        | Statoil USA       | Titleholder LLC   | Properties Inc               |                    |                     |
|          | ì       | 1    |   |                        |         |         |         |            |            | Gastar           | Chesapeake         |                        | Onshore           | mered with and    | chaned its name to           | )                  | Equinor USA         |
|          |         |      |   | ! !                    |         |         | 1 1     |            |            | Exploration USA  | 1                  | Chesapeake             | Properties Inc to | into SWN          | Equinor USA                  | SWN Production     | Onshore             |
|          |         |      |   | 1                      |         |         | i i     |            |            | Inc to Atinum    | Statoil USA        | Appalachia LLC to      | SWN Exchange      | Production        | Onshore                      | Company LLC to     | Properties Inc to   |
| ľ        |         |      |   | GASTAR EXPLORATION USA |         | ــــ    |         |            |            | Marcellus I LLC: |                    | SWN Production         | Titleholder LLC:  | Company LLC: CB   | Properties Inc:              | TH Exploration     | TH Exploration      |
| 10*27086 | 5-25-17 | BB   | DONALD R NEWLAND AND SUZANNE NEWLAND    | INC                    | 1/8+    | 698     | 639     | N/A        | N/A        | 23/353           | Inc: 27/311        | Company LLC: 33/110    | 33/424            | 19/624            | 2/427                        | LLC: 44/141        | LLC: 44/147         |
| 1.       |         |      | PIKEWOOD ENERGY CORPORATION AN OHIO     | THE EVEL OF ATION LLC  | 1/8+    | 1060    | 572     | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                          | N/A                | N/A                 |
| 10*27714 | 5-25-17 | BB   | CORPORATION                             | TH EXPLORATION LLC     | 1/8+    | 1000    | 3/2     | N/A        | IN/A       | IN/A             | IN/A               | IN/A                   | IN/A              | Gastar            | Merger - Gastar              | IN/A               | N/A                 |
|          | Į       |      |   |                        |         |         |         |            |            | 1                |                    |                        |                   | Exploration USA   | Exploration USA              | Gastar             | Atinum Marcellus    |
|          | ł       |      |   | 1                      |         |         | 1 1     |            |            |                  |                    |                        |                   | Inc to Atinum     | Inc into Gastar              | Exploration Inc to |                     |
|          |         |      |   | GASTAR EXPLORATION USA |         |         | 1 1     |            |            |                  |                    |                        |                   | Marcellus I LLC:  | Exploration, Inc:            | TH Exploration II  | Exploration II LLC: |
| 10*14786 | 5-25-18 | DD   | TWILA O WHIPKEY                         | INC                    | 1/8+    | 799     | 61      | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | 806/1             | 21/41                        | LLC: 36/9          | 43/563              |
| 20 21100 |         |      |   |                        |         |         |         |            |            |                  |                    |                        |                   | Gastar            | Merger - Gastar              |                    |                     |
| -        |         |      |   | 1                      |         |         | 1       |            |            | 1                |                    |                        |                   | Exploration USA   | Exploration USA              | Gastar             | Atinum Marcellus    |
|          |         | l    |   | 1                      |         |         |         |            |            |                  |                    |                        |                   | Inc to Atinum     | Inc into Gastar              | Exploration Inc to | 1                   |
| ł        |         |      |   | GASTAR EXPLORATION USA |         |         |         |            | l .        | l .              | l .                | l .                    |                   | Marcellus I LLC:  | Exploration, Inc:            | TH Exploration II  | Exploration II LLC: |
| 10*14797 | 5-25-18 | DD   | ORVILLE YOUNG                           | INC                    | 1/8+    | 800     | 598     | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | 806/1<br>Gastar   | 21/41<br>Merger - Gastar     | LLC: 36/9          | 43/563              |
|          | l       | 1    |   |                        | ļ       |         |         |            |            |                  |                    |                        | İ                 | Exploration USA   | Exploration USA              | Gastar             | Atinum Marcellus    |
|          | İ       | 1    |   |                        |         |         |         |            |            | 1                |                    |                        |                   | Inc to Atinum     | Inc into Gastar              | Exploration Inc to |                     |
| 1        |         | ł    | ONWARD E BURGE TRUST STEPHEN W BURGE AS | GASTAR EXPLORATION USA |         |         |         |            |            |                  |                    |                        |                   | Marcellus I LLC:  | Exploration, Inc:            | TH Exploration II  | Exploration II LLC: |
| 40*44022 | 5-25-18 | DD   | TRUSTEE                                 | INC                    | 1/8+    | 876     | 463     | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | 35/144            | 21/41                        | LLC: 36/9          | 43/563              |
| 10*14822 | 5-25-18 | UU   | TROSTEE                                 | inc                    | 1/01    | 0,0     | 103     |            | 197        | 1971             | .,,,,              | .,,,,                  | 1971              | Gastar            | Merger - Gastar              | LLC. 30/3          | 43/303              |
|          | l       | 1    |   |                        |         |         |         |            | Į          |                  |                    |                        |                   | Exploration USA   | Exploration USA              | Gastar             | Atinum Marcellus    |
|          | 1       |      |   |                        |         |         |         |            |            |                  |                    |                        |                   | Inc to Atinum     | Inc into Gastar              | Exploration Inc to | I LLC to TH         |
| 1        |         | 1    | SARAH L BURGE TRUST STEPHEN W BURGE AS  | GASTAR EXPLORATION USA |         | 1       |         |            |            |                  |                    |                        |                   | Marcellus I LLC:  | Exploration, Inc:            | TH Exploration II  | Exploration II LLC: |
| 10*14823 | 5-25-18 | DD   | TRUSTEE                                 | INC                    | 1/8+    | 876     | 459     | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | 35/144            | 21/41                        | LLC: 36/9          | 43/563              |
|          |         |      |   |                        |         |         |         |            |            |                  |                    | Gastar Exploration     |                   |                   | iviergei - Svviv<br>Exchange |                    |                     |
|          |         |      |   |                        |         |         |         |            |            |                  |                    | USA Inc and Atinum     | Chesapeake        | Statoil USA       | Titleholder LLC              |                    |                     |
|          | İ       |      |   |                        |         |         |         |            | 1          |                  | i                  | Marcellus I LLC to     | Appalachia LLC    | Onshore           | mered with and               | Statoil USA        |                     |
| ı        |         |      |   |                        |         | 1       |         |            |            |                  | Gastar Exploration | Chesapeake             | to SWN            | Properties Inc to | into SWN                     | Onshore            | SWN Production      |
|          |         |      |   |                        |         |         |         |            |            |                  | USA Inc to Atinum  | Appalachia LLC and     | Production        | SWN Exchange      | Production                   | Properties Inc to  |                     |
|          |         |      |   | GASTAR EXPLORATION USA |         |         |         |            |            |                  | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:      | Titleholder LLC:  | Company LLC: CB              | TH Exploration     | TH Exploration      |
| 10*17195 | 5-25-18 | DD   | PATRICIA HARTMAN                        | INC                    | 1/8+    | 695     | 317     | N/A        | N/A        | N/A              | 23/353             | Properties Inc: 27/311 | 33/110            | 33/424            | 19/624                       | LLC: 41/238        | LLC: 41/256         |
| 10-1/195 | 5-25-18 | 1 00 | FATRICIA DARTIVIAN                      |                        | 1,0.    | 1 0,55  | 31/     | 1975       | .,,,,      | † ····           | 25,555             |                        | 55,225            | 35, 424           | werger - Swin                | 220. 72/230        | 220. 72/230         |
| 1        |         |      |   |                        |         |         | ]       |            |            |                  |                    | Gastar Exploration     |                   |                   | Exchange                     |                    | 1                   |
|          |         |      |   |                        | 1       |         |         |            |            | 1                |                    | USA Inc and Atinum     | Chesapeake        | Statoil USA       | Titleholder LLC              | 1                  |                     |
|          |         |      |   |                        |         |         |         |            |            | 1                | l .                | Marcellus I LLC to     | Appalachia LLC    | Onshore           | mered with and               | Statoil USA        |                     |
|          |         |      |   |                        | 1       |         |         |            |            | 1                | Gastar Exploration | Chesapeake             | to SWN            | Properties Inc to | into SWN                     | Onshore            | SWN Production      |
|          |         |      |   |                        |         | 1       |         |            |            |                  | USA Inc to Atinum  | Appalachia LLC and     | Production        | SWN Exchange      | Production                   | Properties Inc to  | Company LLC to      |
|          |         |      |   | GASTAR EXPLORATION USA |         |         |         |            |            | l                | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:      | Titleholder LLC:  | Company LLC: CB              | TH Exploration     | TH Exploration      |
| 10*17196 | 5-25-18 | DD   | DELBERT R. MONTGOMERY                   | INC                    | 1/8+    | 695     | 311     | N/A        | N/A        | N/A              | 23/353             | Properties Inc: 27/311 | 33/110            | 33/424            | 19/624                       | LLC: 41/238        | LLC: 41/256         |

|          |          |     | Γ                                  |                          |         | T       |          |            |            | T          |                    |                               | I              | 1                 | T                          | Τ                 |                |
|----------|----------|-----|------------------------------------|--------------------------|---------|---------|----------|------------|------------|------------|--------------------|-------------------------------|----------------|-------------------|----------------------------|-------------------|----------------|
|          |          | _   |                                    | C                        | D lb    | D4 B-   | alı/Dana | Ai         | A          | A          | A                  | A                             | A!             |                   |                            |                   |                |
| Lease ID | TMP      | Tag | Grantor, Lessor, Etc.              | Grantee, Lessee, Etc.    | Royalty | Deed Bo | ok/Page  | Assignment | Assignment | Assignment | Assignment         | Assignment                    | Assignment     | Assignment        | Assignment                 | Assignment        | Assignment     |
|          |          |     |                                    |                          |         |         |          |            |            |            |                    | Gastar Exploration            |                |                   | Exchange                   |                   |                |
|          |          |     |                                    |                          | ĺ       |         |          |            |            |            |                    | USA Inc and Atinum            | Chesapeake     | Statoil USA       | Titleholder LLC            |                   |                |
| l        |          |     |                                    | 1                        |         |         |          |            |            |            |                    | Marcellus I LLC to            | Appalachia LLC | Onshore           | mered with and             | Statoil USA       |                |
| ł        |          |     |                                    |                          |         |         |          |            |            |            | Gastar Exploration | Chesapeake                    | to SWN         | Properties Inc to | into SWN                   | Onshore           | SWN Production |
|          |          |     |                                    |                          |         |         |          |            |            |            | USA Inc to Atinum  | Appalachia LLC and            | Production     | SWN Exchange      | Production                 | Properties Inc to | Company LLC to |
|          |          |     |                                    | GASTAR EXPLORATION USA   |         |         |          |            |            | l .        | Marcellus I LLC:   | Statoil USA Onshore           | Company LLC:   | Titleholder LLC:  | Company LLC: CB            | TH Exploration    | TH Exploration |
| 10*17197 | 5-25-18  | DD  | GLORIA J. SIMMONS HAROLD SIMMONS   | INC                      | 1/8+    | 695     | 313      | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311        | 33/110         | 33/424            | 19/624<br>Ivierger - Svviv | LLC: 41/238       | LLC: 41/256    |
|          |          |     |                                    |                          |         |         |          |            |            |            |                    | Gastar Exploration            |                |                   | Exchange                   |                   |                |
| 1        |          |     |                                    |                          |         |         |          |            |            |            |                    | USA Inc and Atinum            | Chesapeake     | Statoil USA       | Titleholder LLC            |                   |                |
| i        | i        |     |                                    |                          |         |         |          |            |            |            |                    | Marcellus I LLC to            | Appalachia LLC | Onshore           | mered with and             | Statoil USA       |                |
| 1        |          |     |                                    |                          |         |         |          |            |            |            | Gastar Exploration | Chesapeake                    | to SWN         | Properties Inc to | into SWN                   | Onshore           | SWN Production |
|          | 1        |     |                                    |                          | l       | İ       |          |            |            |            | USA Inc to Atinum  | Appalachia LLC and            | Production     | SWN Exchange      | Production                 | Properties Inc to | Company LLC to |
|          |          |     |                                    | GASTAR EXPLORATION USA   |         | ł       |          |            |            |            | Marcellus I LLC:   | Statoil USA Onshore           | Company LLC:   | Titleholder LLC:  | Company LLC: CB            | TH Exploration    | TH Exploration |
| 10*17199 | 5-25-18  | DD  | PAMELA L DRAZIC AND JEFFREY DRAZIC | INC                      | 1/8+    | 695     | 315      | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311        | 33/110         | 33/424            | 19/624                     | LLC: 41/238       | LLC: 41/256    |
| 10 17133 | 3 23 10  |     |                                    |                          |         |         |          |            |            |            |                    |                               |                |                   | Merger - SWIN              | 1,7,20            | 120: 12/250    |
|          |          |     |                                    |                          |         |         |          |            |            |            |                    | Gastar Exploration            |                |                   | Exchange                   |                   |                |
|          |          |     |                                    |                          |         |         | 1        |            |            |            |                    | USA Inc and Atinum            | Chesapeake     | Statoil USA       | Titleholder LLC            |                   | 1              |
|          |          |     |                                    |                          |         |         |          |            |            |            |                    | Marcellus I LLC to            | Appalachia LLC | Onshore           | mered with and             | Statoil USA       | 1              |
|          |          |     |                                    |                          |         |         |          |            |            |            | Gastar Exploration | Chesapeake                    | to SWN         | Properties Inc to | into SWN                   | Onshore           | SWN Production |
|          |          |     |                                    |                          |         | 1       |          |            |            |            | USA Inc to Atinum  | Appalachia LLC and            | Production     | SWN Exchange      | Production                 | Properties Inc to | Company LLC to |
|          |          |     |                                    | GASTAR EXPLORATION USA   |         |         | l        |            |            |            | Marcellus I LLC:   | Statoil USA Onshore           | Company LLC:   | Titleholder LLC:  | Company LLC: CB            | TH Exploration    | TH Exploration |
| 10*17200 | 5-25-18  | DD  | STEPHANIE L BATES                  | INC                      | 1/8+    | 697     | 156      | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311        | 33/110         | 33/424            | 19/624<br>                 | LLC: 41/238       | LLC: 41/256    |
| l        |          |     | 1                                  |                          |         | 1       |          |            |            |            |                    | Gastar Exploration            |                |                   | Exchange                   |                   |                |
|          |          |     |                                    |                          |         |         |          |            |            |            | ľ                  | USA Inc and Atinum            | Chesapeake     | Statoil USA       | Titleholder LLC            |                   |                |
|          |          |     |                                    |                          |         |         |          |            | 1          |            |                    | Marcellus I LLC to            | Appalachia LLC | Onshore           | mered with and             | Statoil USA       |                |
|          |          |     |                                    |                          |         |         |          |            |            | 1          | Gastar Exploration | Chesapeake                    | to SWN         | Properties Inc to | into SWN                   | Onshore           | SWN Production |
|          | 1        |     |                                    |                          |         |         | •        |            |            |            | USA Inc to Atinum  | Appalachia LLC and            | Production     | SWN Exchange      | Production                 | Properties Inc to | Company LLC to |
|          | İ        |     |                                    | GASTAR EXPLORATION USA   |         |         |          |            |            |            | Marcellus I LLC:   | Statoil USA Onshore           | Company LLC:   | Titleholder LLC:  | Company LLC: CB            | TH Exploration    | TH Exploration |
| 10*17201 | 5-25-18  | DD  | DENISE A GALE                      | INC                      | 1/8+    | 697     | 395      | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311        | 33/110         | 33/424            | 19/624                     | LLC: 41/238       | LLC: 41/256    |
|          |          |     |                                    |                          |         |         |          |            |            |            |                    |                               |                |                   | Merger - 24414             |                   |                |
|          |          | Ì   |                                    |                          |         |         |          |            |            |            |                    | Gastar Exploration            | Ch             |                   | Exchange                   | ļ                 |                |
| ì        | 1        |     |                                    |                          |         |         |          |            |            |            |                    | USA Inc and Atinum            | Chesapeake     | Statoil USA       | Titleholder LLC            |                   | 1              |
|          | <b>!</b> |     |                                    |                          |         |         |          |            |            |            | C                  | Marcellus I LLC to            | Appalachia LLC | Onshore           | mered with and             | Statoil USA       | l l            |
|          |          |     | ,                                  |                          |         |         |          |            |            |            | Gastar Exploration | Chesapeake Appalachia LLC and | to SWN         | Properties Inc to | into SWN                   | Onshore           | SWN Production |
|          |          |     |                                    | CASTAR EVEL ORATION LISA |         |         |          |            |            |            | USA Inc to Atinum  |                               | Production     | SWN Exchange      | Production                 | Properties Inc to | Company LLC to |
|          |          |     |                                    | GASTAR EXPLORATION USA   | 1/0.    | 607     | 205      | N/A        | N/A        | N/A        | Marcellus I LLC:   | Statoil USA Onshore           | Company LLC:   | Titleholder LLC:  | Company LLC: CB            | TH Exploration    | TH Exploration |
| 10*17202 | 5-25-18  | DD  | JANE GALE                          | INC                      | 1/8+    | 697     | 385      | N/A        | N/A        | IN/A       | 23/353             | Properties Inc: 27/311        | 33/110         | 33/424            | 19/624<br>Ivierger - Svviv | LLC: 41/238       | LLC: 41/256    |
| 1        | 1        |     |                                    |                          |         |         |          |            |            |            |                    | Gastar Exploration            |                |                   | Exchange                   |                   |                |
|          | 1        |     |                                    |                          |         |         |          |            | 1          |            |                    | USA Inc and Atinum            | Chesapeake     | Statoil USA       | Titleholder LLC            |                   |                |
|          | 1        |     |                                    |                          |         |         |          |            |            |            |                    | Marcellus I LLC to            | Appalachia LLC | Onshore           | mered with and             | Statoil USA       |                |
|          | 1        | 1   |                                    |                          |         | 1       |          |            |            |            | Gastar Exploration | Chesapeake                    | to SWN         | Properties Inc to | into SWN                   | Onshore           | SWN Production |
|          |          |     |                                    |                          |         |         |          |            |            |            | USA Inc to Atinum  | Appalachia LLC and            | Production     | SWN Exchange      | Production                 | Properties Inc to | Company LLC to |
|          |          |     |                                    | GASTAR EXPLORATION USA   |         | 1       |          |            |            |            | Marcellus I LLC:   | Statoil USA Onshore           | Company LLC:   | Titleholder LLC:  | Company LLC: CB            | TH Exploration    | TH Exploration |
| 10*17203 | 5-25-18  | DD  | BARRY RAY MOORE                    | INC                      | 1/8+    | 697     | 387      | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311        | 33/110         | 33/424            | 19/624                     | LLC: 41/238       | LLC: 41/256    |

| Lease ID | ТМР     | Tag | Grantor, Lessor, Etc.                   | Grantee, Lessee, Etc.   | Royalty | Deed Bo | ok/Page | Assignment | Assignment | Assignment | Assignment                           | Assignment                            | Assignment                   | Assignment                        | Assignment                     | Assignment                          | Assignment                       |
|----------|---------|-----|---|-------------------------|---------|---------|---------|------------|------------|------------|--------------------------------------|---------------------------------------|------------------------------|-----------------------------------|--------------------------------|-------------------------------------|----------------------------------|
|          |         |     |   |                         |         |         |         |            |            |            |                                      | Gastar Exploration                    |                              |                                   | Exchange                       |                                     |                                  |
|          |         |     |   | 1                       |         |         |         |            |            |            | 1                                    | USA Inc and Atinum                    | Chesapeake                   | Statoil USA                       | Titleholder LLC                |                                     |                                  |
|          |         |     |   | 1                       |         |         |         |            |            |            | 1                                    | Marcellus I LLC to                    | Appalachia LLC               | Onshore                           | mered with and                 | Statoil USA                         |                                  |
|          |         |     |   | 1                       |         |         |         |            | 1          |            | Gastar Exploration                   | Chesapeake                            | to SWN                       | Properties Inc to                 | into SWN                       | Onshore                             | SWN Production                   |
|          |         |     |   |                         |         |         |         |            |            |            | USA Inc to Atinum                    | Appalachia LLC and                    | Production                   | SWN Exchange                      | Production                     | Properties Inc to                   |                                  |
|          |         |     |   | GASTAR EXPLORATION USA  |         |         |         |            |            |            | Marcellus I LLC:                     | Statoil USA Onshore                   | Company LLC:                 | Titleholder LLC:                  | Company LLC: CB                | TH Exploration                      | TH Exploration                   |
| 10*17204 | 5-25-18 | DD  | CLARENCE RICHARD ZESIGER & MARY ZESIGER | INC                     | 1/8+    | 697     | 391     | N/A        | N/A        | N/A        | 23/353                               | Properties Inc: 27/311                | 33/110                       | 33/424                            | 19/624                         | LLC: 41/238                         | LLC: 41/256                      |
|          |         |     |   |                         |         |         |         |            |            |            |                                      | Castar Evaluration                    |                              |                                   | Ivierger - SWIN                |                                     |                                  |
|          | 1       |     |   |                         |         |         |         |            |            |            |                                      | Gastar Exploration                    | Chassassia                   | Statoil USA                       | Exchange                       | 5                                   |                                  |
|          |         |     |   |                         |         |         |         |            |            |            |                                      | USA Inc and Atinum Marcellus I LLC to | Chesapeake<br>Appalachia LLC | Onshore                           | Titleholder LLC mered with and | Chahail LICA                        |                                  |
|          | ( i     |     |   |                         |         |         |         |            |            | ł          | Castar Evaloration                   | Chesapeake                            | to SWN                       | Properties Inc to                 | into SWN                       | Statoil USA<br>Onshore              | CIA/AL Dan danakina              |
|          |         |     |   |                         |         |         |         |            | 1          | 1          | USA Inc to Atinum                    | Appalachia LLC and                    | Production                   | SWN Exchange                      | · Production                   |                                     | SWN Production                   |
| 1        |         |     |   | CASTAR EVELORATION LISA |         |         |         |            | 1          |            | Marcellus I LLC:                     | Statoil USA Onshore                   | Company LLC:                 | Titleholder LLC:                  | Company LLC: CB                | Properties Inc to<br>TH Exploration | Company LLC to<br>TH Exploration |
|          |         |     | A CHARGON A GENEVARR CAMARCI            | GASTAR EXPLORATION USA  | 1/8+    | 697     | 399     | N/A        | N/A        | N/A        | 23/353                               | Properties Inc: 27/311                | 33/110                       | 33/424                            | 19/624                         | LLC: 41/238                         | LLC: 41/256                      |
| 10*17206 | 5-25-18 | DD  | M VIRGINIA & EDWARD C MARSH             | INC                     | 1/07    | 037     | 333     | N/A        | 14/7       | 19/5       | 23/333                               | Properties inc. 27/311                | 33/110                       | 33/424                            | IVIEIGEI - SVVIV               | 110. 41/236                         | LLC. 41/230                      |
|          |         |     |   |                         |         | 1       |         |            |            |            |                                      | Gastar Exploration                    | 1                            |                                   | Exchange                       |                                     |                                  |
| 1        |         |     |   |                         |         |         |         |            |            |            |                                      | USA Inc and Atinum                    | Chesapeake                   | Statoil USA                       | Titleholder LLC                |                                     |                                  |
|          |         |     |   |                         | ł       | ŀ       |         |            |            |            |                                      | Marcellus I LLC to                    | Appalachia LLC               | Onshore                           | mered with and                 | Statoil USA                         |                                  |
| }        |         |     |   |                         |         |         |         |            |            |            | Gastar Exploration                   | Chesapeake                            | to SWN                       | Properties Inc to                 | into SWN                       | Onshore                             | SWN Production                   |
|          |         |     |   |                         |         |         |         |            |            |            | USA Inc to Atinum                    | Appalachia LLC and                    | Production                   | SWN Exchange                      | Production                     | Properties Inc to                   | Company LLC to                   |
|          |         |     | DEBORAH K. KLIMASZEWSKI FRANK           | GASTAR EXPLORATION USA  |         |         |         |            |            |            | Marcellus I LLC:                     | Statoil USA Onshore                   | Company LLC:                 | Titleholder LLC:                  | Company LLC: CB                | TH Exploration                      | TH Exploration                   |
| 10*17207 | 5-25-18 | DD  | KLIMASZEWSKI, SR.                       | INC                     | 1/8+    | 697     | 389     | N/A        | N/A        | N/A        | 23/353                               | Properties Inc: 27/311                | 33/110                       | 33/424                            | 19/624<br>  IVIETGET - SWIN    | LLC: 41/238                         | LLC: 41/256                      |
|          |         |     |   |                         |         |         |         |            |            |            |                                      | Gastar Exploration                    |                              |                                   | Exchange                       |                                     |                                  |
| 1        | 1       |     |   |                         |         |         |         |            |            | 1          |                                      | USA Inc and Atinum                    | Chesapeake                   | Statoil USA                       | Titleholder LLC                |                                     |                                  |
|          |         |     |   |                         |         | 1       |         |            |            |            |                                      | Marcellus I LLC to                    | Appalachia LLC               | Onshore                           | mered with and                 | Statoil USA                         |                                  |
|          |         |     |   |                         |         |         |         |            |            |            | Gastar Exploration                   | Chesapeake                            | to SWN                       | Properties Inc to                 | into SWN                       | Onshore                             | SWN Production                   |
|          | '       |     |   |                         | i       |         |         |            |            |            | USA Inc to Atinum                    | Appalachia LLC and                    | Production                   | SWN Exchange                      | Production                     | Properties Inc to                   | 1                                |
|          | ļ       |     |   | GASTAR EXPLORATION USA  |         |         |         |            |            |            | Marcellus I LLC:                     | Statoil USA Onshore                   | Company LLC:                 | Titleholder LLC:                  | Company LLC: CB                | TH Exploration                      | TH Exploration                   |
| 10*17210 | 5-25-18 | DD  | MARILYN NOEL                            | INC                     | 1/8+    | 697     | 393     | N/A        | N/A        | N/A        | 23/353                               | Properties Inc: 27/311                | 33/110                       | 33/424                            | 19/624                         | LLC: 41/238                         | LLC: 41/256                      |
| 10 17210 | 3 23 20 |     |   |                         |         |         |         |            |            |            |                                      |                                       |                              |                                   | iviergei - Svviv               |                                     |                                  |
|          | Ì       |     |   |                         |         |         |         |            |            |            |                                      | Gastar Exploration                    |                              |                                   | Exchange                       |                                     |                                  |
| 1        |         |     |   |                         |         |         |         |            |            |            |                                      | USA Inc and Atinum                    | Chesapeake                   | Statoil USA                       | Titleholder LLC                |                                     |                                  |
|          |         |     |   | 1                       |         |         |         |            | 1          |            | Castas Frankisa                      | Marcellus I LLC to Chesapeake         | Appalachia LLC               | Onshore                           | mered with and                 | Statoil USA                         |                                  |
|          |         |     |   |                         |         |         |         |            |            |            | Gastar Exploration USA Inc to Atinum | Appalachia LLC and                    | to SWN<br>Production         | Properties Inc to<br>SWN Exchange | into SWN<br>Production         | Onshore                             | SWN Production                   |
| l        | 1       |     |   | GASTAR EXPLORATION USA  |         | İ       |         |            |            |            | Marcellus I LLC:                     | Statoil USA Onshore                   | Company LLC:                 | Titleholder LLC:                  | Company LLC: CB                | Properties Inc to<br>TH Exploration | Company LLC to                   |
|          |         |     | CARVANAVALE ZECICER R MITORINA ZECICER  | INC                     | 1/8+    | 697     | 397     | N/A        | N/A        | N/A        | 23/353                               | Properties Inc: 27/311                | 33/110                       | 33/424                            | 19/624                         | LLC: 41/238                         | TH Exploration<br>LLC: 41/256    |
| 10*17211 | 5-25-18 | DD  | GARY WAYNE ZESIGER & VITORINA ZESIGER   | INC                     | 1/0+    | 097     | 397     | IN/A       | IN/A       | IN/A       | 23/333                               | rroperties inc. 2//311                | 33/110                       | 33/424                            | Meiger - Swin                  | LLC. 41/238                         | LLC: 41/236                      |
|          | 1       |     |   |                         |         |         |         |            |            |            |                                      | Gastar Exploration                    |                              | 1                                 | Exchange                       |                                     |                                  |
|          | 1       |     |   |                         |         |         |         |            |            |            |                                      | USA Inc and Atinum                    | Chesapeake                   | Statoil USA                       | Titleholder LLC                |                                     | 1                                |
|          | 1       |     |   |                         |         |         |         |            | 1          |            |                                      | Marcellus I LLC to                    | Appalachia LLC               | Onshore                           | mered with and                 | Statoil USA                         |                                  |
|          | i       |     |   |                         |         | ĺ       |         |            | 1          |            | Gastar Exploration                   | Chesapeake                            | to SWN                       | Properties Inc to                 | into SWN                       | Onshore                             | SWN Production                   |
| 1        | 1       |     |   |                         |         |         |         |            |            | ĺ          | USA Inc to Atinum                    | Appalachia LLC and                    | Production                   | SWN Exchange                      | Production                     | Properties Inc to                   | Company LLC to                   |
|          | 1       |     |   | GASTAR EXPLORATION USA  |         |         |         |            | 1          |            | Marcellus I LLC:                     | Statoil USA Onshore                   | Company LLC:                 | Titleholder LLC:                  | Company LLC: CB                | TH Exploration                      | TH Exploration                   |
| 10*17212 | 5-25-18 | DD  | DARRELL NEWLAND LYDIA NEWLAND           | INC                     | 1/8+    | 697     | 158     | N/A        | N/A        | N/A        | 23/353                               | Properties Inc: 27/311                | 33/110                       | 33/424                            | 19/624                         | LLC: 41/238                         | LLC: 41/256                      |

| Lease ID | ТМР     | Tag | Grantor, Lessor, Etc.                       | Grantee, Lessee, Etc.  | Royalty | Deed Bo | ok/Page    | Assignment | Assignment | Assignment       | Assignment         | Assignment             | Assignment        | Assignment        | Assignment         | Assignment        | Assignment        |
|----------|---------|-----|---|------------------------|---------|---------|------------|------------|------------|------------------|--------------------|------------------------|-------------------|-------------------|--------------------|-------------------|-------------------|
|          |         |     |   |                        |         |         |            |            |            |                  |                    |                        |                   |                   | Merger - Swin      | 11119             | - risorgiiineite  |
|          |         |     |   |                        |         | ĺ       |            |            |            |                  |                    | Gastar Exploration     | l                 |                   | Exchange           |                   |                   |
| ì        | i       |     |   | i                      |         |         |            |            |            |                  | 1                  | USA Inc and Atinum     | Chesapeake        | Statoil USA       | Titleholder LLC    |                   |                   |
| i        |         |     |   |                        |         |         |            |            |            |                  |                    | Marcellus I LLC to     | Appalachia LLC    | Onshore           | mered with and     | Statoil USA       |                   |
|          |         |     |   |                        |         |         |            |            |            |                  | Gastar Exploration | Chesapeake             | to SWN            | Properties Inc to | into SWN           | Onshore           | SWN Production    |
|          |         |     | 1   |                        |         |         |            |            |            |                  | USA Inc to Atinum  | Appalachia LLC and     | Production        | SWN Exchange      | Production         | Properties Inc to | Company LLC to    |
|          | 1       |     |   | GASTAR EXPLORATION USA |         |         |            |            |            |                  | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:      | Titleholder LLC:  | Company LLC: CB    | TH Exploration    | TH Exploration    |
| 10*17213 | 5-25-18 | DD  | CAROL DEEN GARDNER                          | INC                    | 1/8+    | 697     | 154        | N/A        | N/A        | N/A              | 23/353             | Properties Inc: 27/311 | 33/110            | 33/424            | 19/624             | LLC: 41/238       | LLC: 41/256       |
| 10*18275 | 5-25-18 | DD  | BETTY JEAN NEELY                            | TH EXPLORATION LLC     | 1/8+    | 929     | 60         | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                | N/A               | N/A               |
|          |         |     | MARY LOU WILSON AND STANLEY D WILSON        |                        |         | 1       | 1 1        |            |            |                  |                    |                        |                   |                   |                    |                   |                   |
| 10*18366 | 5-25-18 | DD  | MICHAEL WILSON AIF                          | TH EXPLORATION LLC     | 1/8+    | 931     | 311        | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                | N/A               | N/A               |
| 10*18369 | 5-25-18 | DD  | CRAIG ALAN YOHO AND DONNA M YOHO            | TH EXPLORATION LLC     | 1/8+    | 931     | 303        | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                | N/A               | N/A               |
| 10*18370 | 5-25-18 | DD  | SAMUEL D YOHO                               | TH EXPLORATION LLC     | 1/8+    | 931     | 300        | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                | N/A               | N/A               |
|          |         |     | DAVID N DEVICK TRUSTEE OF THE TONI JO MASON |                        |         |         |            |            | 1 .        | 1                | 1 .                | 1                      |                   |                   |                    |                   |                   |
| 10*18379 | 5-25-18 | DD  | LIVING TRUST                                | TH EXPLORATION LLC     | 1/8+    | 932     | 439        | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                | N/A               | N/A               |
| 10*19540 | 5-25-18 | DD  | ERICA M MASON                               | TH EXPLORATION LLC     | 1/8+    | 942     | 53         | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                | N/A               | N/A               |
| 10*19652 | 5-25-18 | DD  | JACK R HAMMERS                              | TH EXPLORATION LLC     | 1/8+    | 944     | 108        | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                | N/A               | N/A               |
| 10*19903 | 5-25-18 | DD  | PAUL F HAMMERS                              | TH EXPLORATION LLC     | 1/8+    | 948     | 236        | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                | N/A               | N/A               |
| 10*22008 | 5-25-18 | DD  | COLIN R YOHO AND NORMA L YOHO               | TH EXPLORATION LLC     | 1/8+    | 953     | 304        | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                | N/A               | N/A               |
| 10*22025 | 5-25-18 | DD  | MARK EUGENE YOHO & MARY YOHO                | TH EXPLORATION LLC     | 1/8+    | 960     | 544        | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                | N/A               | N/A               |
| 10*22129 | 5-25-18 | DD  | JANICE N HAUDENSCHILT                       | TH EXPLORATION LLC     | 1/8+    | 961     | 459        | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                | N/A               | N/A               |
| 10*22441 | 5-25-18 | DD  | APRIL ROSE POSTLETHWAIT                     | TH EXPLORATION LLC     | 1/8+    | 963     | 646        | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                | N/A               | N/A               |
| 10*22510 | 5-25-18 | DD  | DONNA V YOHO                                | TH EXPLORATION LLC     | 1/8+    | 964     | 432        | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                | N/A               | N/A               |
| 10*23372 | 5-25-18 | DD  | DEWEY A MILICIA                             | TH EXPLORATION LLC     | 1/8+    | 1008    | 320        | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                | N/A               | N/A               |
| 10*23373 | 5-25-18 | DD  | DANA MILICIA HUMPHREYS                      | TH EXPLORATION LLC     | 1/8+    | 988     | 429        | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                | N/A               | N/A               |
| 10*23446 | 5-25-18 | DD  | NICOLETTA MILICIA BLOODWORTH                | TH EXPLORATION LLC     | 1/8+    | 1008    | 316<br>548 | N/A        | N/A<br>N/A | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                | N/A               | N/A               |
| 10*25627 | 5-25-18 | DD  | CHESTNUT HOLDINGS INC                       | TH EXPLORATION LLC     | 1/8+    | 1034    | 548        | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                | N/A               | N/A               |
| 1        |         | 1   |   |                        |         |         |            |            |            |                  |                    |                        | ]                 |                   | Name Chane -       |                   |                   |
| i        |         |     |   |                        |         | 1       |            |            | ļ          | 1                | Gastar Exploration |                        | İ                 | Merger - SWN      | Statoil USA        |                   |                   |
|          | 1       |     |   |                        |         |         |            |            | 1          |                  | USA Inc and Atinum |                        |                   | Exchange          | Onshore            |                   |                   |
| 1        | ŀ       |     |   |                        |         |         |            |            | ł          |                  | Marcellus I LLC to |                        | Statoil USA       | Titleholder LLC   | Properties Inc     |                   |                   |
| İ        | 1       | ,   |   |                        | 1       |         |            |            |            | Gastar           | Chesapeake         |                        | Onshore           | mered with and    | chaned its name to |                   | Equinor USA       |
|          | ŀ       |     |   |                        |         | 1       |            |            |            | Exploration USA  | 1 .                | Chesapeake             | Properties Inc to | into SWN          | Equinor USA        | SWN Production    | Onshore           |
| l        | i       |     |   |                        |         |         |            |            |            | Inc to Atinum    | Statoil USA        | Appalachia LLC to      | SWN Exchange      | Production        | Onshore            | Company LLC to    | Properties Inc to |
|          |         |     |   | GASTAR EXPLORATION USA | 1       |         |            |            |            | Marcellus I LLC: | 1                  | SWN Production         | Titleholder LLC:  | Company LLC: CB   | 1                  | TH Exploration    | 1 ' 1             |
| 40*07070 | 5-25-18 | DD  | CECILIA D NEWLAND                           | INC                    | 1/8+    | 697     | 381        | N/A        | N/A        | 23/353           | Inc: 27/311        | Company LLC: 33/110    | 33/424            | 19/624            | 2/427              |                   | TH Exploration    |
| 10*27078 | 5-25-18 | טט  | CECILIA D NEWLAND                           | INC                    | 1/07    | 057     | 301        | N/A        | IN/A       | 23/333           | IIIC. 27/311       | Company LLC. 33/110    | 33/424            | 19/024            | 2/42/              | LLC: 44/141       | LLC: 44/147       |
|          | l       |     |   |                        |         |         |            |            | 1          |                  |                    |                        | ĺ                 |                   | Name Chane -       |                   |                   |
|          |         |     |   |                        |         |         |            |            |            | 1                | Gastar Exploration |                        |                   | Merger - SWN      | Statoil USA        |                   |                   |
|          | 1       |     |   |                        | 1       | 1       |            |            | }          |                  | USA Inc and Atinum |                        |                   | Exchange          | Onshore            |                   |                   |
|          |         |     |   |                        |         |         |            |            |            |                  | Marcellus I LLC to |                        | Statoil USA       | Titleholder LLC   | Properties Inc     |                   |                   |
|          |         |     |   |                        |         |         |            |            |            | Gastar           | Chesapeake         |                        | Onshore           | mered with and    | chaned its name to |                   | Equinor USA       |
|          | 1       |     |   |                        |         |         |            |            |            | Exploration USA  |                    | Chesapeake             | Properties Inc to | into SWN          | Equinor USA        | SWN Production    | Onshore           |
|          |         |     |   |                        |         |         |            |            |            | Inc to Atinum    | Statoil USA        | Appalachia LLC to      | SWN Exchange      | Production        | Onshore            | Company LLC to    | Properties Inc to |
|          | 1       |     |   | GASTAR EXPLORATION USA |         | 1       |            |            |            | Marcellus I LLC: | Onshore Properties | SWN Production         | Titleholder LLC:  | Company LLC: CB   | Properties Inc:    | TH Exploration    | TH Exploration    |
| 10*27005 | E 25 10 | DD  | DAPHNE HUFFMAN AND CHARLES HUFFMAN          | INC                    | 1/8+    | 697     | 383        | N/A        | N/A        | 23/353           | Inc: 27/311        | Company LLC: 33/110    | 33/424            | 19/624            | 2/427              | LLC: 44/141       |                   |
| 10*27085 | 5-25-18 | עט  | TOWER HOLLINAM AND CHARLES HOLLINAM         | 1040                   | 1/0+    | 1 031   | _ 555      | 11/7       | 11/7       | 20/333           | 1 1110. 27/311     | company LLC. 33/110    | 33/444            | 13/024            | 4/44/              | LLC. 44/141       | LLC: 44/147       |

| ID        | TMP     | Tog  | Grantor, Lessor, Etc.                           | Grantee, Lessee, Etc.  | Royalty | Deed Bo | ok/Page | Assignment | Assignment | Assignment       | Assignment                            | Assignment          | Assignment        | Assignment                       | Assignment                           | Assignment                              | Assignment                   |
|-----------|---------|------|---|------------------------|---------|---------|---------|------------|------------|------------------|---------------------------------------|---------------------|-------------------|----------------------------------|--------------------------------------|---|------------------------------|
| Lease ID  | TMP     | Tag  | Grantor, Lessor, Etc.                           | Grantee, Lessee, Etc.  | ROYAILY | Deed Bo | OKJFage | Assignment | Assignment | Assignment       | Assignment                            | Assignment          | Assignment        | Assignment                       |                                      | Assignment                              | Assignment                   |
|           |         |      |   |                        |         |         |         |            |            |                  | Ct Flti                               |                     |                   |                                  | Name Chane -<br>Statoil USA          |   |                              |
|           |         |      |   |                        |         |         |         |            |            |                  | Gastar Exploration USA Inc and Atinum |                     |                   | Merger - SWN<br>Exchange         | Onshore                              |   |                              |
|           |         |      |   |                        |         |         |         |            |            |                  | 1                                     |                     | Statoil USA       | Titleholder LLC                  |                                      |   |                              |
|           |         |      |   |                        |         |         |         |            |            | Gastar           | Marcellus I LLC to Chesapeake         |                     | Onshore           | mered with and                   | Properties Inc<br>chaned its name to |   | Equinor USA                  |
|           |         |      |   |                        |         |         |         |            |            | Exploration USA  | 1 .                                   | Chesapeake          | Properties Inc to | into SWN                         | Equinor USA                          | SWN Production                          | Onshore                      |
|           |         |      |   |                        |         |         | [       |            |            | Inc to Atinum    | Statoil USA                           | Appalachia LLC to   | SWN Exchange      | Production                       | Onshore                              | Company LLC to                          | Properties Inc t             |
|           |         |      |   | GASTAR EXPLORATION USA |         |         |         |            |            | Marcellus I LLC: | Onshore Properties                    | SWN Production      | Titleholder LLC:  | Company LLC: CB                  | I                                    | TH Exploration                          | TH Exploration               |
|           | 5 25 40 | DD   | DONALD R NEWLAND AND SUZANNE NEWLAND            | INC                    | 1/8+    | 698     | 639     | N/A        | N/A        | 23/353           | Inc: 27/311                           | Company LLC: 33/110 |                   | 19/624                           | 2/427                                | LLC: 44/141                             | LLC: 44/147                  |
| 10*27086  | 5-25-18 | טט   | PIKEWOOD ENERGY CORPORATION AN OHIO             | INC                    | 1/01    | 036     | 033     | N/A        | 19/5       | 23/333           | 1110. 27/311                          | Company LEC. 33/110 | 33/424            | 15/024                           | 2/42/                                | LLC. 44/141                             | LLC. 44/147                  |
| 10*27714  | 5-25-18 | DD   | CORPORATION                                     | TH EXPLORATION LLC     | 1/8+    | 1060    | 572     | N/A        | N/A        | N/A              | N/A                                   | N/A                 | N/A               | N/A                              | N/A                                  | N/A                                     | N/A                          |
| 10 2//14  | 3 23 10 | - 55 | Cold Citation                                   |                        |         |         |         |            |            |                  |                                       |                     |                   | Gastar                           | Merger - Gastar                      |   |                              |
|           |         |      |   |                        |         | ļ       |         |            |            |                  |                                       |                     |                   | Exploration USA                  | Exploration USA                      | Gastar                                  | Atinum Marcelli              |
|           | •       |      |   |                        |         |         |         |            |            |                  |                                       |                     |                   | Inc to Atinum                    | Inc into Gastar                      | Exploration Inc to                      | 1                            |
|           |         |      |   | GASTAR EXPLORATION USA |         | l       |         |            |            | l .              |                                       |                     | l .               | Marcellus I LLC:                 | Exploration, Inc:                    | TH Exploration II                       | 1 '                          |
| -10*14786 | 5-26-11 | GG   | TWILA O WHIPKEY                                 | INC                    | 1/8+    | 799     | 61      | N/A        | N/A        | N/A              | N/A                                   | N/A                 | N/A               | 806/1<br>Gastar                  | 21/41<br>Merger - Gastar             | LLC: 36/9                               | 43/563                       |
|           |         |      | İ   |                        |         |         |         |            |            | 1                |                                       |                     |                   | Exploration USA                  | Exploration USA                      | Gastar                                  | Atinum Marcello              |
|           | ľ       |      |   |                        |         | ļ       |         |            |            | 1                |                                       |                     |                   | Inc to Atinum                    | Inc into Gastar                      | Exploration Inc to                      | 1                            |
|           |         |      |   | GASTAR EXPLORATION USA |         |         |         |            |            | i                |                                       |                     |                   | Marcellus I LLC:                 | Exploration, Inc:                    | TH Exploration II                       | Exploration II LL            |
| 10*14792  | 5-26-11 | GG   | тімотну уоно                                    | INC                    | 1/8+    | 799     | 536     | N/A        | N/A        | N/A              | N/A                                   | N/A                 | N/A               | 806/1                            | 21/41                                | LLC: 36/9                               | 43/563                       |
| 10-14/92  | 5-20-11 | - 66 | TIMOTHI TOTO                                    | inc.                   | 1/01    | ,,,,    | 330     | .47.       | .,,,,      | 1411             | 14:1                                  |                     |                   | Gastar                           | Merger - Gastar                      | 1 |                              |
|           |         |      |   |                        |         |         |         |            |            |                  |                                       |                     |                   | Exploration USA                  | Exploration USA                      | Gastar                                  | Atinum Marcelli              |
|           |         |      |   | 1                      |         |         |         |            | 1          |                  | Í                                     | ļ                   | 1                 | Inc to Atinum                    | Inc into Gastar                      | Exploration Inc to                      | I LLC to TH                  |
|           |         |      |   | GASTAR EXPLORATION USA |         | ĺ       |         |            |            | 1                |                                       | i                   |                   | Marcellus I LLC:                 | Exploration, Inc:                    | TH Exploration II                       | Exploration II LL            |
| 10*14797  | 5-26-11 | GG   | ORVILLE YOUNG                                   | INC                    | 1/8+    | 800     | 598     | N/A        | N/A        | N/A              | N/A                                   | N/A                 | N/A               | 806/1<br>Gastar                  | 21/41<br>Merger - Gastar             | LLC: 36/9                               | 43/563                       |
|           |         |      |   |                        |         |         |         |            |            | 1                |                                       |                     |                   | Exploration USA                  | Exploration USA                      | Gastar                                  | Atinum Marcellu              |
|           |         |      | 1   |                        |         |         |         |            | ļ          |                  |                                       |                     |                   | Inc to Atinum                    | Inc into Gastar                      | Exploration Inc to                      | I LLC to TH                  |
|           |         |      | CANALADO E DUDGE TRUST CTERUEN IA RUDGE AS      | GASTAR EXPLORATION USA |         |         |         |            | }          |                  |                                       |                     |                   | Marcellus I LLC:                 | Exploration, Inc:                    | TH Exploration II                       | Exploration II LL            |
| 40*44000  | 5 36 44 | GG   | ONWARD E BURGE TRUST STEPHEN W BURGE AS TRUSTEE | INC                    | 1/8+    | 876     | 463     | N/A        | N/A        | N/A              | N/A                                   | N/A                 | N/A               | 35/144                           | 21/41                                | LLC: 36/9                               | 43/563                       |
| 10*14822  | 5-26-11 | GG   | TRUSTEE   | INC                    | 1/0+    | 870     | 403     | N/A        | 19/5       | 14/7             | 19/6                                  | 14/5                | 14/5              | Gastar                           | Merger - Gastar                      | LLC. 30/3                               | 45/303                       |
|           |         |      |   |                        |         |         |         |            | 1          |                  |                                       | i                   |                   | Exploration USA                  | Exploration USA                      | Gastar                                  | Atinum Marcellu              |
|           | İ       | 1    |   |                        |         |         |         |            |            |                  |                                       |                     |                   | Inc to Atinum                    | Inc into Gastar                      | Exploration Inc to                      | I LLC to TH                  |
|           |         |      | SARAH L BURGE TRUST STEPHEN W BURGE AS          | GASTAR EXPLORATION USA |         | 1       |         |            |            |                  |                                       |                     |                   | Marcellus I LLC:                 | Exploration, Inc:                    | TH Exploration II                       | Exploration II LL            |
| 10*14823  | 5-26-11 | GG   | TRUSTEE   | INC                    | 1/8+    | 876     | 459     | N/A        | N/A        | N/A              | N/A                                   | N/A                 | N/A               | 35/144                           | 21/41                                | LLC: 36/9                               | 43/563                       |
|           |         |      |   |                        |         |         |         |            |            |                  |                                       |                     |                   | Gastar                           | Merger - Gastar                      | Contain                                 |                              |
|           | 1       |      |   |                        |         |         |         |            |            | 1                |                                       |                     |                   | Exploration USA<br>Inc to Atinum | Exploration USA                      | Gastar<br>Exploration Inc to            | Atinum Marcellu              |
| İ         |         |      |   | CASTAR SVELORATION     |         |         |         |            |            |                  |                                       |                     | 1                 | Marcellus I LLC:                 | Inc into Gastar<br>Exploration, Inc: | 1 '                                     | l .                          |
|           |         |      | DEDECO A WORD                                   | GASTAR EXPLORATION USA | 1/0.    | 072     | 219     | N/A        | N/A        | N/A              | N/A                                   | N/A                 | N/A               | 35/119                           | 21/41                                | TH Exploration II LLC: 36/9             | Exploration II LLG<br>43/563 |
| 10*14969  | 5-26-11 | GG   | REBECCA S WORD                                  | IINC                   | 1/8+    | 872     | 719     | N/A        | IN/A       | IN/A             | IN/A                                  | IN/M                | IN/A              | Gastar                           | Merger - Gastar                      | 1 110. 30/9                             | 43/303                       |
|           | 1       |      |   |                        |         |         |         |            |            |                  |                                       |                     | 1                 | Exploration USA                  | Exploration USA                      | Gastar                                  | Atinum Marcellu              |
|           | 1       |      |   |                        |         |         |         |            |            |                  |                                       |                     |                   | Inc to Atinum                    | Inc into Gastar                      | Exploration Inc to                      | I LLC to TH                  |
|           | 1       |      |   | GASTAR EXPLORATION USA |         |         |         |            |            |                  |                                       |                     | }                 | Marcellus I LLC:                 | Exploration, Inc:                    | TH Exploration II                       | Exploration II LLG           |
| 10*14970  | 5-26-11 | GG   | GRACE EXLINE                                    | INC                    | 1/8+    | 872     | 623     | N/A        | N/A        | N/A              | N/A                                   | N/A                 | N/A               | 35/119                           | 21/41                                | LLC: 36/9                               | 43/563                       |

| Lease ID | ТМР     | Tag  | Grantor, Lessor, Etc.              | Grantee, Lessee, Etc.  | Royalty | Deed Bo | ok/Page | Assignment | Assignment | Assignment | Assignment                            | Assignment                                | Assignment                 | Assignment                       | Assignment                    | Assignment                          | Assignment                    |
|----------|---------|------|------------------------------------|------------------------|---------|---------|---------|------------|------------|------------|---------------------------------------|---|----------------------------|----------------------------------|-------------------------------|-------------------------------------|-------------------------------|
|          |         |      |                                    |                        |         |         |         |            |            |            |                                       | Gastar Exploration                        |                            |                                  | Exchange                      |                                     |                               |
|          |         |      |                                    |                        | 1       |         |         |            |            |            |                                       | USA Inc and Atinum                        | Chesapeake                 | Statoil USA                      | Titleholder LLC               |                                     |                               |
|          |         |      |                                    |                        |         |         |         |            |            |            |                                       | Marcellus I LLC to                        | Appalachia LLC             | Onshore                          | mered with and                | Statoil USA                         |                               |
|          |         |      |                                    |                        |         |         | i i     |            |            |            | Gastar Exploration                    | Chesapeake                                | to SWN                     | Properties Inc to                | into SWN                      | Onshore                             | SWN Production                |
|          |         |      |                                    |                        |         |         |         |            |            |            | USA Inc to Atinum                     | Appalachia LLC and                        | Production                 | SWN Exchange                     | Production                    | Properties Inc to                   |                               |
| 1        | 1       |      |                                    | GASTAR EXPLORATION USA |         |         |         |            |            |            | Marcellus I LLC:                      | Statoil USA Onshore                       | Company LLC:               | Titleholder LLC:                 | Company LLC: CB               | 1 '                                 | TH Exploration                |
| 10*17195 | 5-26-11 | GG   | PATRICIA HARTMAN                   | INC                    | 1/8+    | 695     | 317     | N/A        | N/A        | N/A        | 23/353                                | Properties Inc: 27/311                    | 33/110                     | 33/424                           | 19/624                        | LLC: 41/238                         | LLC: 41/256                   |
| 10 1/133 | 3 20 22 |      |                                    |                        |         |         |         |            |            |            |                                       | Gastar Exploration                        |                            |                                  | Exchange                      |                                     |                               |
|          |         |      |                                    |                        |         | 1       |         |            |            |            |                                       | USA Inc and Atinum                        | Chesapeake                 | Statoil USA                      | Titleholder LLC               |                                     |                               |
|          | 1       |      |                                    |                        |         |         |         |            |            |            |                                       | Marcellus I LLC to                        | Appalachia LLC             | Onshore                          | mered with and                | Statoil USA                         | 1                             |
|          |         |      |                                    |                        |         |         |         |            |            |            | Gastar Exploration                    | Chesapeake                                | to SWN                     | Properties Inc to                | 1                             | Onshore                             | SWN Production                |
| i        |         |      |                                    |                        |         | 1       |         |            |            |            | USA Inc to Atinum                     | Appalachia LLC and                        | Production                 | SWN Exchange                     | Production                    | Properties Inc to                   |                               |
|          | 1       | l    |                                    | GASTAR EXPLORATION USA |         | İ       |         |            |            |            | Marcellus I LLC:                      | Statoil USA Onshore                       | Company LLC:               | Titleholder LLC:                 | Company LLC: CB               | TH Exploration                      | TH Exploration                |
| 10*17196 | 5-26-11 | GG   | DELBERT R. MONTGOMERY              | INC                    | 1/8+    | 695     | 311     | N/A        | N/A        | N/A        | 23/353                                | Properties Inc: 27/311                    | 33/110                     | 33/424                           | 19/624                        | LLC: 41/238                         | LLC: 41/256                   |
| 10 1/150 | 32011   | - 55 |                                    |                        |         |         |         |            |            |            |                                       | Castas Fundametica                        |                            | 1                                | ivierger - Svviv              |                                     |                               |
|          |         |      |                                    |                        |         |         |         |            |            |            |                                       | Gastar Exploration USA Inc and Atinum     | Chesapeake                 | Statoil USA                      | Exchange<br>Titleholder LLC   |                                     |                               |
|          |         |      |                                    |                        |         | İ       |         |            |            |            |                                       | Marcellus I LLC to                        | Appalachia LLC             | Onshore                          | mered with and                | Statoil USA                         |                               |
|          | 1       |      |                                    | 1                      | 1       |         |         |            |            |            | Gastar Exploration                    | Chesapeake                                | to SWN                     | Properties Inc to                | ſ                             | Onshore                             | SWN Production                |
| i        |         |      |                                    |                        | 1       |         |         |            |            | 1          | USA Inc to Atinum                     | Appalachia LLC and                        | Production                 | SWN Exchange                     | Production                    | Properties Inc to                   | Company LLC to                |
|          | 1       |      |                                    | GASTAR EXPLORATION USA | 1       |         |         |            |            |            | Marcellus I LLC:                      | Statoil USA Onshore                       | Company LLC:               | Titleholder LLC:                 | Company LLC: CB               | 1 '                                 | TH Exploration                |
|          |         | GG   | GLORIA J. SIMMONS HAROLD SIMMONS   | INC                    | 1/8+    | 695     | 313     | N/A        | N/A        | N/A        | 23/353                                | Properties Inc: 27/311                    | 33/110                     | 33/424                           | 19/624                        | LLC: 41/238                         | LLC: 41/256                   |
| 10*17197 | 5-26-11 | 66   | GLORIA J. SIMIMONS HAROLD SIMIMONS | IIVC                   | 1,01    | 055     | 313     | .47.       | 147.       | 1,7.1      | 10,000                                |   | 33,223                     |                                  | Merger - Syviv                | 120. 12,250                         | 12, 12,250                    |
|          |         | İ    |                                    | 1                      |         | l       | 1       |            |            |            |                                       | Gastar Exploration                        |                            |                                  | Exchange                      |                                     |                               |
| 1        |         |      |                                    |                        |         |         |         |            |            |            |                                       | USA Inc and Atinum                        | Chesapeake                 | Statoil USA                      | Titleholder LLC               |                                     |                               |
|          |         |      |                                    |                        | İ       |         |         |            |            |            |                                       | Marcellus I LLC to                        | Appalachia LLC             | Onshore                          | mered with and                | Statoil USA                         | <b> </b>                      |
|          |         | 1    |                                    |                        |         |         |         |            |            |            | Gastar Exploration                    | Chesapeake                                | to SWN                     | Properties Inc to                | into SWN                      | Onshore                             | SWN Production                |
| 1        |         | 1    |                                    |                        |         |         |         |            |            |            | USA Inc to Atinum<br>Marcellus I LLC: | Appalachia LLC and<br>Statoil USA Onshore | Production<br>Company LLC: | SWN Exchange<br>Titleholder LLC: | Production<br>Company LLC: CB | Properties Inc to<br>TH Exploration | Company LLC to TH Exploration |
|          |         |      |                                    | GASTAR EXPLORATION USA | 1/8+    | 695     | 315     | N/A        | N/A        | N/A        | 23/353                                | Properties Inc: 27/311                    | 33/110                     | 33/424                           | 19/624                        | LLC: 41/238                         | LLC: 41/256                   |
| 10*17199 | 5-26-11 | GG   | PAMELA L DRAZIC AND JEFFREY DRAZIC | IINC                   | 1/0+    | 093     | 313     | N/A        | N/A        | 19/6       | 23/333                                |   | 33/110                     | 33/424                           | ivierger - Svviv              | LLC. 41/238                         | LLC. 41/230                   |
| į        |         |      |                                    |                        |         |         |         |            |            |            |                                       | Gastar Exploration                        |                            |                                  | Exchange                      |                                     | 1                             |
|          |         |      |                                    |                        |         |         |         |            |            |            |                                       | USA Inc and Atinum                        | Chesapeake                 | Statoil USA                      | Titleholder LLC               |                                     | [                             |
|          | 1       | ļ    |                                    |                        | 1       |         |         |            |            | 1          |                                       | Marcellus I LLC to                        | Appalachia LLC             | Onshore                          | mered with and                | Statoil USA                         |                               |
|          |         |      |                                    |                        |         |         |         |            | 1          |            | Gastar Exploration                    | Chesapeake                                | to SWN                     | Properties Inc to                | into SWN                      | Onshore                             | SWN Production                |
| ĺ        |         |      |                                    |                        | l       |         |         |            |            |            | USA Inc to Atinum                     | Appalachia LLC and                        | Production                 | SWN Exchange                     | Production                    | Properties Inc to                   | Company LLC to                |
|          |         |      |                                    | GASTAR EXPLORATION USA |         |         |         |            |            |            | Marcellus I LLC:                      | Statoil USA Onshore                       | Company LLC:               | Titleholder LLC:                 | Company LLC: CB               | TH Exploration                      | TH Exploration                |
| 10*17200 | 5-26-11 | GG_  | STEPHANIE L BATES                  | INC                    | 1/8+    | 697     | 156     | N/A        | N/A        | N/A        | 23/353                                | Properties Inc: 27/311                    | 33/110                     | 33/424                           | 19/624<br>Werger - Swin       | LLC: 41/238                         | LLC: 41/256                   |
|          |         |      |                                    |                        |         |         |         |            |            |            |                                       | Gastar Exploration                        |                            |                                  | Exchange                      | 1                                   |                               |
|          | 1       |      |                                    |                        |         |         |         |            |            |            |                                       | USA Inc and Atinum                        | Chesapeake                 | Statoil USA                      | Titleholder LLC               |                                     |                               |
|          | 1       |      |                                    |                        |         |         |         |            |            |            |                                       | Marcellus I LLC to                        | Appalachia LLC             | Onshore                          | mered with and                | Statoil USA                         | 1                             |
| 1        |         |      | 1                                  |                        |         |         |         |            |            |            | Gastar Exploration                    | Chesapeake                                | to SWN                     | Properties Inc to                | into SWN                      | Onshore                             | SWN Production                |
|          | i       |      |                                    |                        | 1       |         |         |            |            |            | USA Inc to Atinum                     | Appalachia LLC and                        | Production                 | SWN Exchange                     | Production                    | Properties Inc to                   | Company LLC to                |
|          | 1       |      |                                    | GASTAR EXPLORATION USA |         |         |         |            |            |            | Marcellus I LLC:                      | Statoil USA Onshore                       | Company LLC:               | Titleholder LLC:                 | Company LLC: CB               | TH Exploration                      | TH Exploration                |
| 10*17201 | 5-26-11 | GG   | DENISE A GALE                      | INC                    | 1/8+    | 697     | 395     | N/A        | N/A        | N/A        | 23/353                                | Properties Inc: 27/311                    | 33/110                     | 33/424                           | 19/624                        | LLC: 41/238                         | LLC: 41/256                   |

| Lease ID | ТМР     | Tag  | Grantor, Lessor, Etc.                   | Grantee, Lessee, Etc.  | Royalty | Deed Bo | ok/Page | Assignment | Assignment | Assignment | Assignment         | Assignment             | Assignment                   | Assignment        | Assignment                     | Assignment             | Assignment                       |
|----------|---------|------|---|------------------------|---------|---------|---------|------------|------------|------------|--------------------|------------------------|------------------------------|-------------------|--------------------------------|------------------------|----------------------------------|
|          |         |      |   |                        | ļ       | 1       |         |            |            |            |                    | Gastar Exploration     |                              |                   | Exchange                       |                        |                                  |
|          |         |      |   |                        |         |         |         |            | 1          |            |                    | USA Inc and Atinum     | Chesapeake                   | Statoil USA       | Titleholder LLC                |                        |                                  |
|          |         |      |   | 1                      |         | 1       |         |            | ļ          |            |                    | Marcellus I LLC to     | Appalachia LLC               | Onshore           | mered with and                 | Statoil USA            |                                  |
|          |         |      |   | İ                      |         |         |         |            |            |            | Gastar Exploration | Chesapeake             | to SWN                       | Properties Inc to | into SWN                       | Onshore                | SWN Production                   |
|          |         |      |   | 1                      |         |         |         |            |            |            | USA Inc to Atinum  | Appalachia LLC and     | Production                   | SWN Exchange      | Production                     | Properties Inc to      | Company LLC to                   |
|          |         |      |   | GASTAR EXPLORATION USA |         |         |         |            |            |            | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:                 | Titleholder LLC:  | Company LLC: CB                | TH Exploration         | TH Exploration                   |
| 10*17202 | 5-26-11 | GG   | JANE GALE                               | INC                    | 1/8+    | 697     | 385     | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311 | 33/110                       | 33/424            | 19/624                         | LLC: 41/238            | LLC: 41/256                      |
| 10 17202 | 32022   |      |   |                        |         |         |         |            |            |            |                    | Gastar Exploration     |                              |                   | Ivierger - Svviv               |                        | ,                                |
| Ì        | 1       |      |   |                        |         | 1       |         |            |            | 1          |                    | USA Inc and Atinum     | Charanasha                   | Statoil USA       | Exchange                       |                        |                                  |
|          |         |      |   |                        |         |         | 1 1     |            |            |            |                    | Marcellus I LLC to     | Chesapeake<br>Appalachia LLC | Onshore           | Titleholder LLC mered with and | Chaha:I LICA           |                                  |
|          | 1       |      |   |                        |         |         |         |            |            |            | Gastar Exploration | Chesapeake             | to SWN                       | Properties Inc to | into SWN                       | Statoil USA<br>Onshore | SWN Production                   |
| İ        |         | 1    |   |                        |         |         |         |            |            |            | USA Inc to Atinum  | Appalachia LLC and     | Production                   | SWN Exchange      | Production                     | Properties Inc to      | 1                                |
|          |         | İ    | 1                                       | GASTAR EXPLORATION USA |         |         |         |            |            |            | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:                 | Titleholder LLC:  | Company LLC: CB                | 1 '                    | Company LLC to<br>TH Exploration |
| 40*47707 | F 26 11 | GG   | BARRY RAY MOORE                         | INC                    | 1/8+    | 697     | 387     | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311 | 33/110                       | 33/424            | 19/624                         | LLC: 41/238            | LLC: 41/256                      |
| 10*17203 | 5-26-11 | - 66 | BARRY RAT WOORE                         | inc inc                | 1,0.    | 057     | 30/     | 11/7       | 1976       | 147        | 25/555             |                        | 33,110                       | 33/424            | ivierger - Svviv               | LLC. 41/238            | LLC. 41/230                      |
|          |         |      |   |                        |         |         | 1 1     |            |            |            |                    | Gastar Exploration     |                              |                   | Exchange                       |                        | 1                                |
|          |         |      |   |                        |         |         |         |            |            |            |                    | USA Inc and Atinum     | Chesapeake                   | Statoil USA       | Titleholder LLC                |                        |                                  |
| ì        |         | 1    |   |                        |         |         |         |            |            |            |                    | Marcelius I LLC to     | Appalachia LLC               | Onshore           | mered with and                 | Statoil USA            |                                  |
|          |         |      |   |                        | 1       |         |         |            |            |            | Gastar Exploration | Chesapeake             | to SWN                       | Properties Inc to | into SWN                       | Onshore                | SWN Production                   |
|          |         |      |   |                        |         |         |         |            |            |            | USA Inc to Atinum  | Appalachia LLC and     | Production                   | SWN Exchange      | Production                     | Properties Inc to      | Company LLC to                   |
| 1        | İ       |      |   | GASTAR EXPLORATION USA |         |         |         |            |            |            | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:                 | Titleholder LLC:  | Company LLC: CB                | TH Exploration         | TH Exploration                   |
| 10*17204 | 5-26-11 | GG   | CLARENCE RICHARD ZESIGER & MARY ZESIGER | INC                    | 1/8+    | 697     | 391     | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311 | 33/110                       | 33/424            | 19/624<br>IVIERGEI - SVVIV     | LLC: 41/238            | LLC: 41/256                      |
| I        |         |      |   |                        |         |         |         |            |            |            | 1                  | Gastar Exploration     |                              |                   | Exchange                       |                        |                                  |
|          |         | l    |   |                        |         |         |         |            |            |            |                    | USA Inc and Atinum     | Chesapeake                   | Statoil USA       | Titleholder LLC                |                        |                                  |
|          |         |      |   |                        |         |         |         |            |            |            |                    | Marcellus I LLC to     | Appalachia LLC               | Onshore           | mered with and                 | Statoil USA            |                                  |
|          |         |      |   |                        | 1       | 1       | 1 1     |            |            |            | Gastar Exploration | Chesapeake             | to SWN                       | Properties Inc to | into SWN                       | Onshore                | SWN Production                   |
| ł        | 1       |      |   |                        | ŀ       |         | }       |            |            |            | USA Inc to Atinum  | Appalachia LLC and     | Production                   | SWN Exchange      | Production                     | Properties Inc to      | Company LLC to                   |
|          |         |      |   | GASTAR EXPLORATION USA |         |         | 1 1     |            |            |            | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:                 | Titleholder LLC:  | Company LLC: CB                | TH Exploration         | TH Exploration                   |
| 10*17206 | 5-26-11 | GG   | M VIRGINIA & EDWARD C MARSH             | INC                    | 1/8+    | 697     | 399     | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311 | 33/110                       | 33/424            | 19/624<br>Ivierger - Svv Iv    | LLC: 41/238            | LLC: 41/256                      |
|          |         |      |   |                        |         |         |         |            |            | 1          |                    | Gastar Exploration     |                              |                   | Exchange                       |                        |                                  |
|          |         |      |   |                        |         |         |         |            |            | 1          |                    | USA Inc and Atinum     | Chesapeake                   | Statoil USA       | Titleholder LLC                | i                      | }                                |
|          | 1       |      |   |                        | 1       |         | 1 1     |            |            |            |                    | Marcellus I LLC to     | Appalachia LLC               | Onshore           | mered with and                 | Statoil USA            |                                  |
| 1        | 1       |      |   |                        | ł       |         |         |            |            |            | Gastar Exploration | Chesapeake             | to SWN                       | Properties Inc to | into SWN                       | Onshore                | SWN Production                   |
|          |         |      |   |                        | [       |         |         |            |            |            | USA Inc to Atinum  | Appalachia LLC and     | Production                   | SWN Exchange      | Production                     | Properties Inc to      | Company LLC to                   |
|          |         |      | DEBORAH K. KLIMASZEWSKI FRANK           | GASTAR EXPLORATION USA |         |         |         |            |            |            | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:                 | Titleholder LLC:  | Company LLC: CB                | TH Exploration         | TH Exploration                   |
| 10*17207 | 5-26-11 | GG   | KLIMASZEWSKI, SR.                       | INC                    | 1/8+    | 697     | 389     | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311 | 33/110                       | 33/424            | 19/624                         | LLC: 41/238            | LLC: 41/256                      |
| 10 1/20/ | 3-20 11 | +    | KENT DEET SING SIN                      |                        | 7       |         |         |            |            |            |                    |                        |                              |                   | wergér - Sww                   |                        | 2201 12/200                      |
|          | 1       |      |   |                        |         |         |         |            | 1          |            |                    | Gastar Exploration     |                              |                   | Exchange                       |                        |                                  |
| 1        | 1       |      |   |                        |         |         |         |            |            |            |                    | USA Inc and Atinum     | Chesapeake                   | Statoil USA       | Titleholder LLC                |                        |                                  |
|          | 1       |      |   |                        |         |         |         |            |            | 1          | <b>.</b>           | Marcellus I LLC to     | Appalachia LLC               | Onshore           | mered with and                 | Statoil USA            | l l                              |
|          |         |      |   |                        |         | 1       |         |            |            |            | Gastar Exploration | Chesapeake             | to SWN                       | Properties Inc to | into SWN                       | Onshore                | SWN Production                   |
|          | 1       |      |   |                        | 1       |         |         |            |            |            | USA Inc to Atinum  | Appalachia LLC and     | Production                   | SWN Exchange      | Production                     | Properties Inc to      | Company LLC to                   |
|          | 1       |      |   | GASTAR EXPLORATION USA | 1       |         |         |            | l          |            | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:                 | Titleholder LLC:  | Company LLC: CB                | TH Exploration         | TH Exploration                   |
| 10*17210 | 5-26-11 | GG   | MARILYN NOEL                            | INC                    | 1/8+    | 697     | 393     | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311 | 33/110                       | 33/424            | 19/624                         | LLC: 41/238            | LLC: 41/256                      |

| Lease ID             | ТМР     | Tag | Grantor, Lessor, Etc.                                     | Grantee, Lessee, Etc.                 | Royalty | Deed Bo    | ok/Page    | Assignment | Assignment | Assignment | Assignment         | Assignment                    | Assignment     | Assignment        | Assignment              | Assignment         | Assignment         |
|----------------------|---------|-----|---|---------------------------------------|---------|------------|------------|------------|------------|------------|--------------------|-------------------------------|----------------|-------------------|-------------------------|--------------------|--------------------|
|                      |         |     |   |                                       |         |            |            |            |            |            |                    | Gastar Exploration            |                |                   | Exchange                |                    |                    |
|                      |         |     |   |                                       |         |            |            |            |            |            |                    | USA Inc and Atinum            | Chesapeake     | Statoil USA       | Titleholder LLC         |                    |                    |
|                      | 1 1     |     |   |                                       |         |            |            |            | İ          |            |                    | Marcellus I LLC to            | Appalachia LLC | Onshore           | mered with and          | Statoil USA        |                    |
|                      | i i     |     |   |                                       |         |            |            |            |            |            | Cantan Fundametica | 1                             |                | l                 |                         |                    | CHAIL Document     |
|                      | i i     |     |   |                                       |         |            |            |            |            |            | Gastar Exploration | Chesapeake                    | to SWN         | Properties Inc to | into SWN                | Onshore            | SWN Production     |
|                      | 1       |     |   |                                       |         |            |            |            |            |            | USA Inc to Atinum  | Appalachia LLC and            | Production     | SWN Exchange      | Production              | Properties Inc to  |                    |
|                      | 1 1     |     |   | GASTAR EXPLORATION USA                |         |            |            |            | l          |            | Marcellus I LLC:   | Statoil USA Onshore           | Company LLC:   | Titleholder LLC:  | Company LLC: CB         | TH Exploration     | TH Exploration     |
| 10*17211             | 5-26-11 | GG  | GARY WAYNE ZESIGER & VITORINA ZESIGER                     | INC                                   | 1/8+    | 697        | 397        | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311        | 33/110         | 33/424            | 19/624<br>Werger - SWW  | LLC: 41/238        | LLC: 41/256        |
|                      |         |     |   |                                       |         |            |            |            |            |            | 1                  | Gastar Exploration            |                |                   | Exchange                |                    | 1                  |
|                      |         |     |   |                                       |         |            |            |            |            |            |                    | USA Inc and Atinum            | Chesapeake     | Statoil USA       | Titleholder LLC         |                    | ŀ                  |
|                      |         |     |   |                                       |         |            |            |            |            |            |                    | Marcellus I LLC to            | Appalachia LLC | Onshore           | mered with and          | Statoil USA        | [                  |
|                      |         |     |   | (                                     |         |            | 1          |            |            |            | Gastar Exploration | Chesapeake                    | to SWN         | Properties Inc to | into SWN                | Onshore            | CIA/Al Draduction  |
|                      |         |     |   |                                       |         |            |            |            |            |            |                    |                               |                |                   |                         | l                  | SWN Production     |
|                      |         |     |   |                                       | 1       | 1          |            |            |            |            | USA Inc to Atinum  | Appalachia LLC and            | Production     | SWN Exchange      | Production              | Properties Inc to  | Company LLC to     |
|                      |         |     |   | GASTAR EXPLORATION USA                |         |            |            |            |            |            | Marcellus I LLC:   | Statoil USA Onshore           | Company LLC:   | Titleholder LLC:  | Company LLC: CB         | TH Exploration     | TH Exploration     |
| 10*17212             | 5-26-11 | GG  | DARRELL NEWLAND LYDIA NEWLAND                             | INC                                   | 1/8+    | 697        | 158        | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311        | 33/110         | 33/424            | 19/624<br>Werger - Swin | LLC: 41/238        | LLC: 41/256        |
|                      |         |     |   |                                       |         |            |            |            |            |            |                    | Gastar Exploration            |                |                   | Exchange                |                    |                    |
|                      |         |     |   |                                       |         |            |            |            |            |            |                    | USA Inc and Atinum            | Chesapeake     | Statoil USA       | Titleholder LLC         |                    |                    |
| 1                    |         |     |   |                                       | 1       |            |            |            |            |            |                    | Marcellus I LLC to            | Appalachia LLC | Onshore           | mered with and          | Statoil USA        |                    |
|                      |         |     |   |                                       |         | 1          |            |            |            |            | Gastar Exploration | Chesapeake                    | to SWN         | Properties Inc to | into SWN                | Onshore            | SWN Production     |
| 1                    |         |     |   |                                       | l       |            |            |            |            |            | USA Inc to Atinum  | Appalachia LLC and            | Production     | SWN Exchange      | Production              | Properties Inc to  | Company LLC to     |
| 1                    | 1       |     |   | CACTAR EVELORATION LICA               |         |            |            |            |            |            | Marcellus I LLC:   | Statoil USA Onshore           | Company LLC:   | Titleholder LLC:  | Company LLC: CB         | l '                |                    |
|                      | ]       |     |   | GASTAR EXPLORATION USA                | 4/0.    | 607        |            | 21/4       | N/A        | N/A        | 23/353             | 1                             | 1              | 33/424            |                         | · •                | TH Exploration     |
| 10*17213             | 5-26-11 | GG  | CAROL DEEN GARDNER  | INC                                   | 1/8+    | 697<br>943 | 154<br>560 | N/A<br>N/A | N/A<br>N/A | N/A<br>N/A | 23/353<br>N/A      | Properties Inc: 27/311<br>N/A | 33/110<br>N/A  | N/A               | 19/624<br>N/A           | LLC: 41/238<br>N/A | LLC: 41/256<br>N/A |
| 10*17822             | 5-26-11 | GG  | ANTOINE E GERAUD  | TH EXPLORATION LLC                    | 1/8+    | 943        | 66         | N/A        | N/A        | N/A        | N/A                | N/A                           | N/A            | N/A               | N/A                     | N/A                | N/A<br>N/A         |
| 10*18114             | 5-26-11 | GG  |   | TH EXPLORATION LLC TH EXPLORATION LLC | 1/8+    | 927        | 73         | N/A        | N/A        | N/A        | N/A                | N/A                           | N/A            | N/A               | N/A                     | N/A                | N/A                |
| 10*18115             | 5-26-11 | GG  |   | TH EXPLORATION LLC                    | 1/8+    | 929        | 60         | N/A        | N/A        | N/A        | N/A                | N/A                           | N/A            | N/A               | N/A                     | N/A<br>N/A         | N/A                |
| 10*18275             | 5-26-11 | GG  | BETTY JEAN NEELY MARY LOU WILSON AND STANLEY D WILSON     | TH EXPLORATION LLC                    | 1/0+    | 323        | - 00       | 14/75      | I N/A      | 11/2       | 19/6               | 197                           | 1970           | IV/A              | 147                     | 14/7               | IN/A               |
|                      |         |     | 1   | TH EXPLORATION LLC                    | 1/8+    | 931        | 311        | N/A        | N/A        | N/A        | N/A                | N/A                           | N/A            | N/A               | N/A                     | N/A                | N/A                |
| 10*18366             | 5-26-11 | GG  | MICHAEL WILSON AIF  | TH EXPLORATION LLC                    | 1/8+    | 931        | 303        | N/A        | N/A        | N/A        | N/A                | N/A                           | N/A            | N/A               | N/A                     | N/A                | N/A                |
| 10*18369             | 5-26-11 | GG  | CRAIG ALAN YOHO AND DONNA M YOHO                          | TH EXPLORATION LLC                    | 1/8+    | 931        | 300        | N/A        | N/A        | N/A        | N/A                | N/A                           | N/A            | N/A               | N/A                     | N/A                | N/A                |
| 10*18370             | 5-26-11 | GG  | SAMUEL D YOHO DAVID N DEVICK TRUSTEE OF THE TONI JO MASON | TH EXPLORATION LLC                    | 1/61    | 331        | 300        | IV/A       | 14/7       | 14/7       | 14/2               | 197                           | 14/7           | 14/7              | 197                     | 19/7               | 19/6               |
| 10*10270             | 5-26-11 | GG  | LIVING TRUST  | TH EXPLORATION LLC                    | 1/8+    | 932        | 439        | N/A        | N/A        | N/A        | N/A                | N/A                           | N/A            | N/A               | N/A                     | N/A                | N/A                |
| 10*18379<br>10*18541 | 5-26-11 | GG  | PATRICK P MCHENRY   | TH EXPLORATION LLC                    | 1/8+    | 933        | 649        | N/A        | N/A        | N/A        | N/A                | N/A                           | N/A            | N/A               | N/A                     | N/A                | N/A                |
| 10*18541             | 5-26-11 | GG  | LUCILLE R MCHENRY   | TH EXPLORATION LLC                    | 1/8+    | 937        | 624        | N/A        | N/A        | N/A        | N/A                | N/A                           | N/A            | N/A               | N/A                     | N/A                | N/A                |
| 10*19486             | 5-26-11 | GG  | BARBARA ANN MAYNARD                                       | TH EXPLORATION LLC                    | 1/8+    | 941        | 229        | N/A        | N/A        | N/A        | N/A                | N/A                           | N/A            | N/A               | N/A                     | N/A                | N/A                |
| 10*19480             | 5-26-11 | GG  | ERICA M MASON   | TH EXPLORATION LLC                    | 1/8+    | 942        | 53         | N/A        | N/A        | N/A        | N/A                | N/A                           | N/A            | N/A               | N/A                     | N/A                | N/A                |
| 10*19543             | 5-26-11 | GG  | ROBERT I BONAR SR   | TH EXPLORATION LLC                    | 1/8+    | 942        | 61         | N/A        | N/A        | N/A        | N/A                | N/A                           | N/A            | N/A               | N/A                     | N/A                | N/A                |
| 10 15545             | 32011   |     |   |                                       |         |            |            | •          |            | •          |                    |                               |                |                   |                         |                    |                    |
| 10*19640             | 5-26-11 | GG  | MARGARET F RICHMOND DEBORAH FEDOR POA                     | TH EXPLORATION LLC                    | 1/8+    | 944        | 120        | N/A        | N/A        | N/A        | N/A                | N/A                           | N/A            | N/A               | N/A                     | N/A                | N/A                |
| 10*19641             | 5-26-11 | GG  | BRADFORD D LOWERY & DEBORAH LOWERY                        | TH EXPLORATION LLC                    | 1/8+    | 944        | 122        | N/A        | N/A        | N/A        | N/A                | N/A                           | N/A            | N/A               | N/A                     | N/A                | N/A                |
| 10*19650             | 5-26-11 | GG  | CLAUDIA LOWERY MALLOY                                     | TH EXPLORATION LLC                    | 1/8+    | 944        | 99         | N/A        | N/A        | N/A        | N/A                | N/A                           | N/A            | N/A               | N/A                     | N/A                | N/A                |
| 10*19652             | 5-26-11 | GG  | JACK R HAMMERS  | TH EXPLORATION LLC                    | 1/8+    | 944        | 108        | N/A        | N/A        | N/A        | N/A                | N/A                           | N/A            | N/A               | N/A                     | N/A                | N/A                |
| 10*19657             | 5-26-11 | GG  | JANET LEE SPARKS  | TH EXPLORATION LLC                    | 1/8+    | 964        | 440        | N/A        | N/A        | N/A        | N/A                | N/A                           | N/A            | N/A               | N/A                     | N/A                | N/A                |
| 10*19732             | 5-26-11 | GG  | CARL M MCHENRY AND PAMELA MCHENRY                         | TH EXPLORATION LLC                    | 1/8+    | 944        | 469        | N/A        | N/A        | N/A        | N/A                | N/A                           | N/A            | N/A               | N/A                     | N/A                | N/A                |
|                      | 1       |     |   |                                       |         | 960        | 188        |            |            |            |                    |                               |                |                   |                         |                    |                    |
| 10*19858             | 5-26-11 | GG  | JAMES MICHAEL YOHO  | TH EXPLORATION LLC                    | 1/8+    | 945        | 442        | N/A        | N/A        | N/A        | N/A                | N/A                           | N/A            | N/A               | N/A                     | N/A                | N/A                |
| 10*19903             | 5-26-11 | GG  | PAUL F HAMMERS  | TH EXPLORATION LLC                    | 1/8+    | 948        | 236        | N/A        | N/A        | N/A        | N/A                | N/A                           | N/A            | N/A               | N/A                     | N/A                | N/A                |
| 10*19996             | 5-26-11 | GG  | CHARLES D WOOD  | TH EXPLORATION LLC                    | 1/8+    | 947        | 589        | N/A        | N/A        | N/A        | N/A                | N/A                           | N/A            | N/A               | N/A                     | N/A                | N/A                |
| 10*21073             | 5-26-11 | GG  | ARDITH R ROSE AND TOMMY E ROSE                            | TH EXPLORATION LLC                    | 1/8+    | 951        | 608        | N/A        | N/A        | N/A        | N/A                | N/A                           | N/A            | N/A               | N/A                     | N/A                | N/A                |
| 10*21074             | 5-26-11 | GG  | MALCOLM E WOOD AND JOAN J WOOD                            | TH EXPLORATION LLC                    | 1/8+    | 951        | 610        | N/A        | N/A        | N/A        | N/A                | N/A                           | N/A            | N/A               | N/A                     | N/A                | N/A                |
|                      |         |     |   | TH EXPLORATION LLC                    | 1/8+    | 952        | 190        | N/A        | N/A        | N/A        | N/A                | N/A                           | N/A            | N/A               | N/A                     | N/A                | N/A                |

|          |         |      |  |  |        |            |               |            | ••                |                   |                   |                   |                   |                   |                   |            |            |
|----------|---------|------|--|--|--------|------------|---------------|------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------------|------------|
| Lease ID | TMP     |      | Grantor, Lessor, Etc.                    | Grantee, Lessee, Etc.  |        | Deed Bo    | ок/Page<br>59 | Assignment | Assignment<br>N/A | Assignment<br>N/A | Assignment<br>N/A | Assignment<br>N/A | Assignment<br>N/A | Assignment<br>N/A | Assignment<br>N/A | Assignment | Assignment |
| 10*21419 | 5-26-11 |      | DAPHNE HUFFMAN AND CHARLES HUFFMAN       | TH EXPLORATION LLC   | 1/8+   |            | 59<br>57      | N/A<br>N/A | N/A<br>N/A        | N/A               | N/A               | N/A               | N/A               | N/A<br>N/A        | N/A<br>N/A        | N/A<br>N/A | N/A        |
| 10*21431 | 5-26-11 |      | GARY WAYNE ZESIGER & VITORINA ZESIGER    | TH EXPLORATION LLC   | 1/8+   | 957        | 55            | N/A<br>N/A | N/A<br>N/A        | N/A<br>N/A        | N/A               | N/A               | N/A               | N/A<br>N/A        | N/A               | N/A<br>N/A | N/A<br>N/A |
| 10*21436 | 5-26-11 | GG   | CECILIA D NEWLAND                        | TH EXPLORATION LLC   | 1/8+   | 957        |               |            | N/A<br>N/A        | N/A<br>N/A        | N/A               | N/A               | N/A<br>N/A        | N/A<br>N/A        | N/A<br>N/A        |            |            |
| 10*21439 | 5-26-11 | GG   | M VIRGINIA & EDWARD C MARSH              | TH EXPLORATION LLC   | 1/8+   | 957<br>957 | 53<br>244     | N/A<br>N/A | N/A<br>N/A        | N/A               | N/A               | N/A               | N/A<br>N/A        | N/A<br>N/A        | N/A<br>N/A        | N/A<br>N/A | N/A        |
| 10*21469 | 5-26-11 | GG   | KIMBERLY S DENNY AND JAMES E DENNY       | TH EXPLORATION LLC   | 1/8+   |            | 190           | N/A<br>N/A | N/A<br>N/A        | N/A<br>N/A        | N/A<br>N/A        | N/A               | N/A<br>N/A        | N/A<br>N/A        | N/A<br>N/A        | N/A<br>N/A | N/A        |
| 10*21471 | 5-26-11 | GG   | RICHARD ROSS WILSON                      | TH EXPLORATION LLC   | 1/8+   | 960        | 190           | N/A        | IN/A              | N/A               | IV/A              | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
|          | 1       |      | ROBERT CRAIG MONTGOMERY AND CYNTHIA R    |  | 1/0.   | 050        | 496           | A1 / A     | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        |            |
| 10*21620 | 5-26-11 |      | MONTGOMERY                               | TH EXPLORATION LLC   | 1/8+   | 959        | 496           | N/A<br>N/A | N/A<br>N/A        | N/A               | N/A               | N/A               | N/A               | N/A<br>N/A        | N/A<br>N/A        |            | N/A        |
| 10*21621 | 5-26-11 | GG   | MARILYN NOEL                             | TH EXPLORATION LLC   | 1/8+   | 959        | 494           | N/A<br>N/A | N/A<br>N/A        | N/A               | N/A               | N/A               | N/A               | N/A<br>N/A        | N/A<br>N/A        | N/A<br>N/A | N/A        |
| 10*21658 | 5-26-11 | GG   | CLARENCE RICHARD ZESIGER & MARY ZESIGER  | TH EXPLORATION LLC   | 1/8+   | 959        |               |            |                   | N/A<br>N/A        | N/A<br>N/A        | N/A<br>N/A        | N/A<br>N/A        | N/A<br>N/A        |                   |            | N/A        |
| 10*21659 | 5-26-11 | GG   | DEBORAH BLOUGH                           | TH EXPLORATION LLC   | 1/8+   | 958        | 392           | N/A        | N/A<br>N/A        | N/A<br>N/A        | N/A<br>N/A        | N/A<br>N/A        | N/A<br>N/A        | N/A<br>N/A        | N/A<br>N/A        | N/A        | N/A        |
| 10*21660 | 5-26-11 | GG   | PAMELA L DRAZIC AND JEFFREY DRAZIC       | TH EXPLORATION LLC   | 1/8+   | 958        | 390           | N/A        |                   |                   | N/A<br>N/A        | N/A<br>N/A        |                   |                   |                   | N/A        | N/A        |
| 10*21830 | 5-26-11 | GG   | MARISSA MASON                            | TH EXPLORATION LLC   | 1/8+   | 960        | 200           | N/A        | N/A               | N/A               | N/A<br>N/A        | N/A               | N/A<br>N/A        | N/A               | N/A               | N/A        | N/A        |
| 10*21831 | 5-26-11 | GG   | MATTHEW MASON                            | TH EXPLORATION LLC   | 1/8+   | 966        | 122           | N/A        | N/A               | N/A               |                   |                   |                   | N/A               | N/A               | N/A        | N/A        |
| 10*21834 | 5-26-11 |      | GEORGE DANIEL KRUGER                     | TH EXPLORATION LLC   | 1/8+   | 960        | 204           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10*21944 | 5-26-11 |      | JILL A BECK                              | TH EXPLORATION LLC   | 1/8+   | 960        | 101           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10*21947 | 5-26-11 | GG   | WALLACE LYNN WENDEL                      | TH EXPLORATION LLC   | 1/8+   | 965        | 59            | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
|          |         |      | DEBORAH K KLIMASZEWSI AND FRANK          | 1  | 1 .    |            |               | _          |                   |                   |                   |                   |                   |                   |                   |            |            |
| 10*22007 | 5-26-11 | GG   | KLIMASZEWSKI                             | TH EXPLORATION LLC   | 1/8+   | 959        | 492           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10*22008 | 5-26-11 | GG   | COLIN R YOHO AND NORMA L YOHO            | TH EXPLORATION LLC   | 1/8+   | 953        | 304           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10*22025 | 5-26-11 | GG   | MARK EUGENE YOHO & MARY YOHO             | TH EXPLORATION LLC   | 1/8+   | 960        | 544           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10*22031 | 5-26-11 | GG   | PHILLIP YOHO AND PATRICIA YOHO           | TH EXPLORATION LLC   | 1/8+   | 960        | 535           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10*22032 | 5-26-11 | GG   | JOANNE E RAY                             | TH EXPLORATION LLC   | 1/8+   | 960        | 537           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10*22106 | 5-26-11 | GG   | BARRY RAY MOORE                          | TH EXPLORATION LLC   | 1/8+   | 954        | 643           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10*22129 | 5-26-11 | GG   | JANICE N HAUDENSCHILT                    | TH EXPLORATION LLC   | 1/8+   | 961        | 459           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10*22137 | 5-26-11 | GG   | CONNIE L NEELY                           | TH EXPLORATION LLC   | 1/8+   | 961        | 466           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10*22285 | 5-26-11 | GG   | DONALD JAMES WILSON AND SANDY L WILSON   | TH EXPLORATION LLC   | 1/8+   | 962        | 193           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10*22334 | 5-26-11 | GG   | JOHN BRYANT                              | TH EXPLORATION LLC   | 1/8+   | 962        | 540           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10*22434 | 5-26-11 | GG   | EDWIN NELSON WOOD                        | TH EXPLORATION LLC   | 1/8+   | 963        | 637           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10*22441 | 5-26-11 | GG   | APRIL ROSE POSTLETHWAIT                  | TH EXPLORATION LLC   | 1/8+   | 963        | 646           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10*22510 | 5-26-11 | GG   | DONNA V YOHO                             | TH EXPLORATION LLC   | 1/8+   | 964        | 432           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10*22561 | 5-26-11 | GG   | MARY ROSE YOHO                           | TH EXPLORATION LLC   | 1/8+   | 968        | 200           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10*22562 | 5-26-11 | GG   | HAROLD C SIMMONS                         | TH EXPLORATION LLC   | 1/8+   | 966        | 100           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10*22563 | 5-26-11 | GG   | KIMBERLY D STRAUCH                       | TH EXPLORATION LLC   | 1/8+   | 966        | 522           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10*22585 | 5-26-11 | GG   | CYNTHIA L CHICK                          | TH EXPLORATION LLC   | 1/8+   | 966        | 102           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10 11000 |         |      |  |  |        |            |               |            |                   |                   |                   |                   |                   |                   |                   |            |            |
| 10*22718 | 5-26-11 | GG   | WILLIAM R RICHMOND AND CONNIE S RICHMOND | TH EXPLORATION LLC   | 1/8+   | 963        | 389           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10*23042 | 5-26-11 | GG   | MARK A YOHO                              | TH EXPLORATION LLC   | 1/8+   | 1012       | 191           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10*23372 | 5-26-11 | GG   | DEWEY A MILICIA                          | TH EXPLORATION LLC   | 1/8+   | 1008       | 320           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10*23373 | 5-26-11 | GG   | DANA MILICIA HUMPHREYS                   | TH EXPLORATION LLC   | 1/8+   | 988        | 429           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10*23446 | 5-26-11 | GG   | NICOLETTA MILICIA BLOODWORTH             | TH EXPLORATION LLC   | 1/8+   | 1008       | 316           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10*23446 | 5-26-11 | GG   | LINDA K TOTTEN AND JERRY STEPHEN TOTTEN  | TH EXPLORATION LLC   | 1/8+   | 1010       | 358           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10*24003 | 5-26-11 | GG   | CHARLES SIBURT AND PAULA SIBURT          | TH EXPLORATION LLC   | 1/8+   | 1020       | 193           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10*24003 | 5-26-11 | GG   | MARY MARTHA BELLE DOYLE                  | TH EXPLORATION LLC   | 1/8+   | 1024       | 285           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10*24291 | 5-26-11 | GG   | DENISE A GALE                            | TH EXPLORATION LLC   | 1/8+   | 1008       | 324           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10*24491 | 5-26-11 | GG   | DEBRA JANE GALE                          | TH EXPLORATION LLC   | 1/8+   | 1021       | 122           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
|          | 5-26-11 | GG   | COLBY G WOOD                             | TH EXPLORATION LLC   | 1/8+   | 1027       | 103           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10*25065 | 5-26-11 | GG   | RODGER A HENDERSON JR                    | TH EXPLORATION LLC   | 1/8+   | 1027       | 97            | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10*25066 | 5-26-11 | GG   | CHESTNUT HOLDINGS INC                    | TH EXPLORATION LLC   | 1/8+   | 1027       | 548           | N/A        | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A               | N/A        | N/A        |
| 10*25627 | 3-20-11 | 1 00 | Terrestrior norphido inc                 | THE STATE OF THE S | 1 2/01 |            |               |            | 1                 |                   |                   |                   |                   |                   | .4                |            |            |

| Lease ID | ТМР                | Tag      | Grantor, Lessor, Etc.                                 | Grantee, Lessee, Etc.  | Royalty | Deed Bo | ok/Page | Assignment | Assignment | Assignment   | Assignment  | Assignment   | Assignment  | Assignment  | Assignment   | Assignment  | Assignment  |
|----------|--------------------|----------|---|------------------------|---------|---------|---------|------------|------------|--|---|--|---|---|--|---|---|
| 10*27078 | 5-26-11            |          | CECILIA D NEWLAND                                     | GASTAR EXPLORATION USA | 1/8+    | 697     | 381     | N/A        | N/A        | Gastar<br>Exploration USA<br>Inc to Atinum<br>Marcellus I LLC:<br>23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake<br>Appalachia LLC to<br>SWN Production<br>Company LLC: 33/110 | Statoil USA<br>Onshore<br>Properties Inc to<br>SWN Exchange<br>Titleholder LLC:<br>33/424 | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624 | Name Chane -<br>Statoil USA<br>Onshore<br>Properties Inc<br>chaned its name to<br>Equinor USA<br>Onshore<br>Properties Inc:<br>2/427 | SWN Production<br>Company LLC to<br>TH Exploration<br>LLC: 44/141 | Equinor USA<br>Onshore  |
|          |                    |          |   | GASTAR EXPLORATION USA |         |         |         |            |            | Gastar<br>Exploration USA<br>Inc to Atinum<br>Marcellus I LLC:           | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties             | Chesapeake<br>Appalachia LLC to<br>SWN Production                        | Statoil USA<br>Onshore<br>Properties Inc to<br>SWN Exchange<br>Titleholder LLC:           | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB        | Name Chane -<br>Statoil USA<br>Onshore<br>Properties Inc<br>chaned its name to<br>Equinor USA<br>Onshore<br>Properties Inc:          | SWN Production<br>Company LLC to<br>TH Exploration                | Equinor USA<br>Onshore<br>Properties Inc to<br>TH Exploration |
| 10*27085 | 5-26-11            | GG       | DAPHNE HUFFMAN AND CHARLES HUFFMAN                    | INC                    | 1/8+    | 697     | 383     | N/A        | N/A        | 23/353<br>Gastar   | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake   | Company LLC: 33/110  | 33/424 Statoil USA Onshore  | 19/624  Merger - SWN Exchange Titleholder LLC mered with and                                    | 2/427  Name Chane - Statoil USA Onshore Properties Inc chaned its name to  | LLC: 44/141   | LLC: 44/147   |
| 10*27086 | 5-26-11            | GG       | DONALD R NEWLAND AND SUZANNE NEWLAND                  | GASTAR EXPLORATION USA | 1/8+    | 698     | 639     | N/A        | N/A        | Exploration USA<br>Inc to Atinum<br>Marcellus I LLC:<br>23/353           |   | Chesapeake<br>Appalachia LLC to<br>SWN Production<br>Company LLC: 33/110 | Properties Inc to<br>SWN Exchange<br>Titleholder LLC:<br>33/424                           | into SWN<br>Production<br>Company LLC: CB<br>19/624   | Equinor USA<br>Onshore<br>Properties Inc:<br>2/427   | SWN Production<br>Company LLC to<br>TH Exploration<br>LLC: 44/141 | 1 '   |
| 40*27744 | 5 20 11            | cc       | PIKEWOOD ENERGY CORPORATION AN OHIO CORPORATION       | TH EXPLORATION LLC     | 1/8+    | 1060    | 572     | N/A        | N/A        | N/A  | N/A   | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   |
| 10*27714 | 5-26-11<br>5-26-11 | GG<br>GG | STONE HILL MINERALS HOLDINGS LLC                      | TH EXPLORATION LLC     | 1/8+    | 1063    | 594     | N/A        | N/A        | N/A  | N/A   | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   |
| 10*14786 | 5-23-11.3          | нн       | TWILA O WHIPKEY                                       | GASTAR EXPLORATION USA | 1/8+    | 799     | 61      | N/A        | N/A        | N/A  | N/A   | N/A  | N/A   | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 806/1                                     | Merger - Gastar<br>Exploration USA<br>Inc into Gastar<br>Exploration, Inc:<br>21/41  | Gastar<br>Exploration Inc to<br>TH Exploration II<br>LLC: 36/9    | Atinum Marcellus  |
| 10 14780 |                    |          |   | GASTAR EXPLORATION USA |         |         |         |            |            |  |   |  |   | Gastar<br>Exploration USA<br>Inc to Atinum<br>Marcellus I LLC:                                  | Merger - Gastar<br>Exploration USA<br>Inc into Gastar<br>Exploration, Inc:   | Gastar<br>Exploration Inc to<br>TH Exploration II                 | Atinum Marcellus<br>I LLC to TH<br>Exploration II LLC:        |
| 10*14797 | 5-23-11.3          | НН       | ORVILLE YOUNG ONWARD E BURGE TRUST STEPHEN W BURGE AS | GASTAR EXPLORATION USA | 1/8+    | 800     | 598     | N/A        | N/A        | N/A  | N/A   | N/A  | N/A   | 806/1 Gastar Exploration USA Inc to Atinum Marcellus I LLC:                                     | 21/41 Merger - Gastar Exploration USA Inc into Gastar Exploration, Inc:  | Gastar Exploration Inc to   | 43/563 Atinum Marcellus I LLC to TH Exploration II LLC:       |
| 10*14822 | 5-23-11.3          | нн       | SARAH L BURGE TRUST STEPHEN W BURGE AS                | GASTAR EXPLORATION USA | 1/8+    | 876     | 463     | N/A        | N/A        | N/A  | N/A   | N/A  | N/A   | 35/144 Gastar Exploration USA Inc to Atinum Marcellus I LLC:                                    | 21/41 Merger - Gastar Exploration USA Inc into Gastar Exploration, Inc:  | LLC: 36/9  Gastar  Exploration Inc to TH Exploration II           | Exploration II LLC:   |
| 10*14823 | 5-23-11.3          | НН       | TRUSTEE   | INC                    | 1/8+    | 876     | 459     | N/A        | N/A        | N/A  | N/A   | N/A  | N/A   | 35/144  | 21/41  | LLC: 36/9   | 43/563  |

| Lease ID | ТМР                                     | Tag  | Grantor, Lessor, Etc.              | Grantee, Lessee, Etc.  | Royalty | Deed Bo | ok/Page | Assignment | Assignment | Assignment | Assignment         | Assignment             | Assignment     | Assignment        | Assignment                 | Assignment        | Assignment     |
|----------|---|------|------------------------------------|------------------------|---------|---------|---------|------------|------------|------------|--------------------|------------------------|----------------|-------------------|----------------------------|-------------------|----------------|
|          |   |      |                                    |                        |         |         |         |            |            |            |                    | Gastar Exploration     |                |                   | Exchange                   |                   |                |
|          | 1                                       |      |                                    |                        |         |         |         |            |            |            |                    | USA Inc and Atinum     | Chesapeake     | Statoil USA       | Titleholder LLC            |                   |                |
| }        | 1                                       |      |                                    |                        |         |         |         |            |            |            |                    | Marcellus I LLC to     | Appalachia LLC | Onshore           | mered with and             | Statoil USA       | Ì              |
|          |   |      |                                    |                        |         |         |         |            |            |            | Gastar Exploration | Chesapeake             | to SWN         | Properties Inc to | into SWN                   | Onshore           | SWN Production |
|          | 1                                       |      |                                    |                        |         |         | 1       |            |            |            | USA Inc to Atinum  | Appalachia LLC and     | Production     | SWN Exchange      | Production                 | Properties Inc to | Company LLC to |
|          | 1                                       |      |                                    | GASTAR EXPLORATION USA |         |         |         |            |            |            | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:   | Titleholder LLC:  | Company LLC: CB            | TH Exploration    | TH Exploration |
| 10*17195 | 5-23-11.3                               | нн   | PATRICIA HARTMAN                   | INC                    | 1/8+    | 695     | 317     | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311 | 33/110         | 33/424            | 19/624                     | LLC: 41/238       | LLC: 41/256    |
| 10 1/133 | 3-23-11.3                               |      | TATIONALIA                         |                        | -,-     |         |         |            |            |            |                    |                        |                | ,                 | iviergéi - Svviv           |                   |                |
|          |   |      |                                    |                        |         |         | 1       |            |            | }          |                    | Gastar Exploration     |                |                   | Exchange                   |                   |                |
|          |   |      |                                    |                        |         |         | 1 1     |            |            |            |                    | USA Inc and Atinum     | Chesapeake     | Statoil USA       | Titleholder LLC            |                   |                |
|          | 1                                       |      |                                    |                        |         |         | i I     |            |            |            |                    | Marcellus I LLC to     | Appalachia LLC | Onshore           | mered with and             | Statoil USA       |                |
|          | 1                                       |      |                                    |                        |         |         | 1       |            |            |            | Gastar Exploration | Chesapeake             | to SWN         | Properties Inc to | into SWN                   | Onshore           | SWN Production |
|          |   |      |                                    |                        |         |         | 1 1     |            |            |            | USA Inc to Atinum  | Appalachia LLC and     | Production     | SWN Exchange      | Production                 | Properties Inc to | Company LLC to |
|          | 1 '                                     |      |                                    | GASTAR EXPLORATION USA | l .     |         | Ì       |            |            |            | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:   | Titleholder LLC:  | Company LLC: CB            | TH Exploration    | TH Exploration |
| 10*17196 | 5-23-11.3                               | НН   | DELBERT R. MONTGOMERY              | INC                    | 1/8+    | 695     | 311     | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311 | 33/110         | 33/424            | 19/624<br>Werger - Swin    | LLC: 41/238       | LLC: 41/256    |
|          | ,                                       |      |                                    |                        |         |         | i i     |            |            |            |                    | Gastar Exploration     |                |                   | Exchange                   |                   |                |
|          | 1                                       |      |                                    |                        |         |         |         |            |            |            |                    | USA Inc and Atinum     | Chesapeake     | Statoil USA       | Titleholder LLC            |                   |                |
|          | 1                                       |      |                                    |                        |         |         | 1 1     |            |            |            |                    | Marcellus I LLC to     | Appalachia LLC | Onshore           | mered with and             | Statoil USA       |                |
| 1        |   |      | İ                                  | İ                      | ļ       |         |         |            |            |            | Gastar Exploration | Chesapeake             | to SWN         | Properties Inc to | into SWN                   | Onshore           | SWN Production |
|          | 1                                       |      |                                    |                        |         |         | 1 1     |            |            |            | USA Inc to Atinum  | Appalachia LLC and     | Production     | SWN Exchange      | Production                 | Properties Inc to | Company LLC to |
| 1        | 1                                       |      |                                    | GASTAR EXPLORATION USA |         |         |         |            |            |            | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:   | Titleholder LLC:  | Company LLC: CB            | TH Exploration    | TH Exploration |
| 10*17197 | 5-23-11.3                               | l нн | GLORIA J. SIMMONS HAROLD SIMMONS   | INC                    | 1/8+    | 695     | 313     | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311 | 33/110         | 33/424            | 19/624                     | LLC: 41/238       | LLC: 41/256    |
| 10 1/15/ | 3 23 12.0                               |      |                                    |                        | i       |         |         |            |            |            |                    | C                      |                |                   | Iviergér - Svviv           |                   |                |
|          | ,                                       |      |                                    |                        |         |         | 1 1     |            |            |            |                    | Gastar Exploration     | al (           |                   | Exchange                   |                   |                |
| 1        |   |      |                                    |                        |         |         | }       |            |            |            |                    | USA Inc and Atinum     | Chesapeake     | Statoil USA       | Titleholder LLC            |                   |                |
| 1        |   |      |                                    |                        |         |         |         |            |            |            |                    | Marcellus I LLC to     | Appalachia LLC | Onshore           | mered with and             | Statoil USA       |                |
| 1        | 1                                       |      |                                    |                        | }       |         |         |            |            |            | Gastar Exploration | Chesapeake             | to SWN         | Properties Inc to | into SWN                   | Onshore           | SWN Production |
| 1        | '                                       |      |                                    |                        |         |         |         |            |            |            | USA Inc to Atinum  | Appalachia LLC and     | Production     | SWN Exchange      | Production                 | Properties Inc to | Company LLC to |
|          |   |      |                                    | GASTAR EXPLORATION USA |         |         |         |            |            |            | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:   | Titleholder LLC:  | Company LLC: CB            | TH Exploration    | TH Exploration |
| 10*17199 | 5-23-11.3                               | НН   | PAMELA L DRAZIC AND JEFFREY DRAZIC | INC                    | 1/8+    | 695     | 315     | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311 | 33/110         | 33/424            | 19/624<br>ivierger - 3vviv | LLC: 41/238       | LLC: 41/256    |
|          | !                                       |      |                                    |                        |         |         |         |            |            |            |                    | Gastar Exploration     |                |                   | Exchange                   | İ                 |                |
|          | 1                                       |      |                                    | 1                      |         |         |         |            |            |            |                    | USA Inc and Atinum     | Chesapeake     | Statoil USA       | Titleholder LLC            |                   |                |
|          | '                                       |      |                                    |                        |         |         | 1       |            |            |            |                    | Marcellus I LLC to     | Appalachia LLC | Onshore           | mered with and             | Statoil USA       |                |
| 1        |   |      |                                    | 1                      |         |         |         |            |            |            | Gastar Exploration | Chesapeake             | to SWN         | Properties Inc to | into SWN                   | Onshore           | SWN Production |
|          |   |      |                                    |                        |         |         | 1 1     |            |            |            | USA Inc to Atinum  | Appalachia LLC and     | Production     | SWN Exchange      | Production                 | Properties Inc to | Company LLC to |
|          |   |      |                                    | GASTAR EXPLORATION USA |         |         |         |            |            |            | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:   | Titleholder LLC:  | Company LLC: CB            | TH Exploration    | TH Exploration |
| 10*17200 | 5-23-11.3                               | нн   | STEPHANIE L BATES                  | INC                    | 1/8+    | 697     | 156     | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311 | 33/110         | 33/424            | 19/624                     | LLC: 41/238       | LLC: 41/256    |
|          | 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | 1    |                                    |                        |         |         |         |            |            |            |                    |                        |                |                   | ivierger - Svviv           |                   |                |
|          | 1                                       |      |                                    |                        |         |         |         |            |            |            |                    | Gastar Exploration     | Chara t        |                   | Exchange                   |                   |                |
| 1        | Ì                                       |      |                                    |                        |         |         |         |            |            |            |                    | USA Inc and Atinum     | Chesapeake     | Statoil USA       | Titleholder LLC            |                   | 1              |
|          | 1                                       |      |                                    |                        |         |         |         |            |            |            | 6-1                | Marcellus I LLC to     | Appalachia LLC | Onshore           | mered with and             | Statoil USA       | 1              |
|          | 1                                       |      |                                    |                        |         |         |         |            |            |            | Gastar Exploration | Chesapeake             | to SWN         | Properties Inc to | into SWN                   | Onshore           | SWN Production |
|          | 1                                       |      |                                    |                        |         | ĺ       |         |            |            |            | USA Inc to Atinum  | Appalachia LLC and     | Production     | SWN Exchange      | Production                 | Properties Inc to | Company LLC to |
|          | 1                                       | 1    |                                    | GASTAR EXPLORATION USA |         |         |         |            |            |            | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:   | Titleholder LLC:  | Company LLC: CB            | TH Exploration    | TH Exploration |
| 10*17201 | 5-23-11.3                               | HH   | DENISE A GALE                      | INC                    | 1/8+    | 697     | 395     | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311 | 33/110         | 33/424            | 19/624                     | LLC: 41/238       | LLC: 41/256    |



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| Lease ID | TMP       | Tag | Grantor, Lessor, Etc.                   | Grantee, Lessee, Etc.    | Royalty | Deed Bo | ok/Page | Assignment | Assignment | Assignment | Assignment                           | Assignment                            | Assignment                 | Assignment                     | Assignment                    | Assignment             | Assignment     |
|----------|-----------|-----|---|--------------------------|---------|---------|---------|------------|------------|------------|--------------------------------------|---------------------------------------|----------------------------|--------------------------------|-------------------------------|------------------------|----------------|
|          |           |     |   |                          |         |         |         |            |            |            |                                      | Gastar Exploration                    |                            |                                | _                             |                        |                |
|          | 1         |     |   |                          |         |         |         |            |            |            |                                      | USA Inc and Atinum                    | Charanaska                 | Statoil USA                    | Exchange<br>Titleholder LLC   | 1                      |                |
|          |           |     |   |                          |         |         |         |            |            |            |                                      | Marcellus I LLC to                    | Chesapeake Appalachia LLC  | Onshore                        | mered with and                | C4-4-1111C4            |                |
|          |           |     |   |                          |         |         |         |            |            |            | Gastar Exploration                   | Chesapeake                            |                            | 4                              |                               | Statoil USA            |                |
|          |           |     |   |                          |         |         | 1       |            |            |            | USA Inc to Atinum                    | Appalachia LLC and                    | to SWN                     | Properties Inc to SWN Exchange | into SWN                      | Onshore                | SWN Production |
|          |           |     |   | GASTAR EXPLORATION USA   |         |         |         |            |            |            | Marcellus I LLC:                     | Statoil USA Onshore                   | Production<br>Company LLC: | Titleholder LLC:               | Production                    | Properties Inc to      | Company LLC to |
|          |           |     | LANG CALE                               | INC                      | 1/8+    | 697     | 385     | N/A        | N/A        | N/A        | 23/353                               | Properties Inc: 27/311                |                            | 33/424                         | Company LLC: CB               | TH Exploration         | TH Exploration |
| 10*17202 | 5-23-11.3 | HH  | JANE GALE                               | INC                      | 1/6+    | 097     | 363     | IN/A       | IN/A       | IN/A       | 23/333                               | Properties inc. 27/311                | 33/110                     | 33/424                         | 19/624<br>Werger - 3WN        | LLC: 41/238            | LLC: 41/256    |
|          | 1         |     |   |                          |         |         |         |            |            |            |                                      | Gastar Exploration                    |                            |                                | Exchange                      |                        |                |
|          |           |     |   |                          |         |         |         |            |            |            | i                                    | USA Inc and Atinum                    | Chesapeake                 | Statoil USA                    | Titleholder LLC               |                        |                |
|          |           |     |   |                          |         | ŀ       | ŧ .     |            |            |            |                                      | Marcellus I LLC to                    | Appalachia LLC             | Onshore                        | mered with and                | Statoil USA            |                |
|          |           |     |   |                          |         |         |         |            |            |            | Gastar Exploration                   | Chesapeake                            | to SWN                     | Properties Inc to              | into SWN                      | Onshore                | SWN Production |
|          |           |     |   |                          |         | ļ       |         |            |            |            | USA Inc to Atinum                    | Appalachia LLC and                    | Production                 | SWN Exchange                   | Production                    | Properties Inc to      | Company LLC to |
|          |           |     |   | GASTAR EXPLORATION USA   |         | 1       |         |            |            |            | Marcellus I LLC:                     | Statoil USA Onshore                   | Company LLC:               | Titleholder LLC:               | Company LLC: CB               | TH Exploration         | TH Exploration |
| 10*17203 | 5-23-11.3 | нн  | BARRY RAY MOORE                         | INC                      | 1/8+    | 697     | 387     | N/A        | N/A        | N/A        | 23/353                               | Properties Inc: 27/311                | 33/110                     | 33/424                         | 19/624                        | LLC: 41/238            | LLC: 41/256    |
|          |           |     |   |                          |         |         |         |            |            |            |                                      | Castas Fundametica                    |                            |                                | Iviergéi - Svviv              |                        |                |
|          |           |     |   |                          |         |         |         |            |            |            |                                      | Gastar Exploration USA Inc and Atinum | Chesapeake                 | Statoil USA                    | Exchange                      |                        |                |
|          | 1         |     |   |                          |         |         | 1       |            |            |            |                                      | Marcellus I LLC to                    | Appalachia LLC             | Onshore                        | Titleholder LLC               |                        |                |
|          | 1         |     |   |                          | 1       |         |         |            |            |            | Coston Fundametica                   |                                       |                            |                                | mered with and                | Statoil USA            | l              |
|          |           |     |   |                          |         |         |         |            |            |            | Gastar Exploration USA Inc to Atinum | Chesapeake Appalachia LLC and         | to SWN                     | Properties Inc to              | into SWN                      | Onshore                | SWN Production |
|          |           |     |   | CASTAR EVEL ORATION LISA | ]       |         |         |            |            |            | Marcellus I LLC:                     | Statoil USA Onshore                   | Production                 | SWN Exchange                   | Production                    | Properties Inc to      | Company LLC to |
| l        |           |     | CLARENCE RICHARD ZESIGER & MARY ZESIGER | GASTAR EXPLORATION USA   | 1/8+    | 697     | 391     | N/A        | N/A        | N/A        | 23/353                               | 1                                     | Company LLC:<br>33/110     | Titleholder LLC:<br>33/424     | Company LLC: CB               | TH Exploration         | TH Exploration |
| 10*17204 | 5-23-11.3 | НН  | CLARENCE RICHARD ZESIGER & MARY ZESIGER | INC                      | 1/0+    | 097     | 291     | IN/A       | IN/A       | IN/A       | 23/333                               | Properties Inc: 27/311                | 33/110                     | 33/424                         | 19/624<br>Ivierger - Svv iv   | LLC: 41/238            | LLC: 41/256    |
|          |           |     |   |                          |         | i       |         |            |            |            |                                      | Gastar Exploration                    |                            |                                | Exchange                      |                        |                |
|          |           |     |   |                          |         |         | i i     |            |            |            |                                      | USA Inc and Atinum                    | Chesapeake                 | Statoil USA                    | Titleholder LLC               |                        |                |
|          |           |     |   |                          |         |         |         |            |            |            |                                      | Marcellus I LLC to                    | Appalachia LLC             | Onshore                        | mered with and                | Statoil USA            | [              |
|          |           |     |   |                          | i       | i       |         |            |            |            | Gastar Exploration                   | Chesapeake                            | to SWN                     | Properties Inc to              | into SWN                      | Onshore                | SWN Production |
| i        |           |     |   |                          |         |         |         |            |            |            | USA Inc to Atinum                    | Appalachia LLC and                    | Production                 | SWN Exchange                   | Production                    | Properties Inc to      | Company LLC to |
|          |           |     |   | GASTAR EXPLORATION USA   |         | İ       |         |            |            |            | Marcellus I LLC:                     | Statoil USA Onshore                   | Company LLC:               | Titleholder LLC:               | Company LLC: CB               | TH Exploration         | TH Exploration |
| 10*17206 | 5-23-11.3 | нн  | M VIRGINIA & EDWARD C MARSH             | INC                      | 1/8+    | 697     | 399     | N/A        | N/A        | N/A        | 23/353                               | Properties Inc: 27/311                | 33/110                     | 33/424                         | 19/624                        | LLC: 41/238            | LLC: 41/256    |
|          |           |     |   |                          |         |         |         |            |            |            |                                      | Gastar Exploration                    |                            |                                | ivierger - Svviv              |                        |                |
|          |           |     |   |                          |         |         |         |            |            |            |                                      | USA Inc and Atinum                    | Chesapeake                 | Statoil USA                    | Exchange<br>Titleholder LLC   |                        |                |
| 1        |           |     |   |                          |         |         |         |            |            |            |                                      | Marcellus I LLC to                    | Appalachia LLC             | Onshore                        | mered with and                | C4-4-11 11C A          |                |
|          |           |     |   | -                        | 1       |         |         |            |            |            | Gastar Exploration                   | Chesapeake                            | to SWN                     | Properties Inc to              | into SWN                      | Statoil USA<br>Onshore | Cum B          |
|          |           |     |   |                          |         |         |         |            |            |            | USA Inc to Atinum                    | Appalachia LLC and                    | Production                 | SWN Exchange                   |                               |                        | SWN Production |
|          |           |     | DEBORAH K. KLIMASZEWSKI FRANK           | GASTAR EXPLORATION USA   | 1       |         |         |            |            | Į.         | Marcellus I LLC:                     | Statoil USA Onshore                   | Company LLC:               | Titleholder LLC:               | Production<br>Company LLC: CB | Properties Inc to      | Company LLC to |
|          |           |     |   | INC                      | 1/8+    | 697     | 389     | N/A        | N/A        | N/A        | 23/353                               | Properties Inc: 27/311                | 33/110                     | 33/424                         |                               | TH Exploration         | TH Exploration |
| 10*17207 | 5-23-11.3 | нн  | KLIMASZEWSKI, SR.                       | INC                      | 1/8+    | 097     | 369     | IN/A       | IN/A       | IN/A       | 23/333                               | Properties inc: 27/311                | 33/110                     | 33/424                         | 19/624<br>                    | LLC: 41/238            | LLC: 41/256    |
|          |           | 1   |   |                          |         |         |         |            |            |            |                                      | Gastar Exploration                    |                            | 1                              | Exchange                      |                        | 1              |
|          | 1         |     |   |                          |         |         |         |            | 1          |            |                                      | USA Inc and Atinum                    | Chesapeake                 | Statoil USA                    | Titleholder LLC               |                        |                |
|          | 1         |     |   |                          |         |         |         |            |            |            |                                      | Marcellus I LLC to                    | Appalachia LLC             | Onshore                        | mered with and                | Statoil USA            |                |
|          |           | 1   |   |                          |         |         |         |            | 1          |            | Gastar Exploration                   | Chesapeake                            | to SWN                     | Properties Inc to              | into SWN                      | Onshore                | SWN Production |
|          |           |     |   |                          |         |         |         |            | 1          |            | USA Inc to Atinum                    | Appalachia LLC and                    | Production                 | SWN Exchange                   | Production                    | Properties Inc to      | Company LLC to |
|          |           |     |   | GASTAR EXPLORATION USA   |         |         |         |            |            |            | Marcellus I LLC:                     | Statoil USA Onshore                   | Company LLC:               | Titleholder LLC:               | Company LLC: CB               | TH Exploration         | TH Exploration |
| 10*17210 | 5-23-11.3 | нн  | MARILYN NOEL                            | INC                      | 1/8+    | 697     | 393     | N/A        | N/A        | N/A        | 23/353                               | Properties Inc: 27/311                | 33/110                     | 33/424                         | 19/624                        | LLC: 41/238            | LLC: 41/256    |

| Lease ID | ТМР       | Tag | Grantor, Lessor, Etc.                       | Grantee, Lessee, Etc.                 | Royalty      | Deed Bo    | ok/Page    | Assignment | Assignment | Assignment       | Assignment         | Assignment             | Assignment        | Assignment        | Assignment<br>werger - Swin | Assignment        | Assignment        |
|----------|-----------|-----|---|---------------------------------------|--------------|------------|------------|------------|------------|------------------|--------------------|------------------------|-------------------|-------------------|-----------------------------|-------------------|-------------------|
|          |           |     |   |                                       |              |            |            |            |            |                  | İ                  | Gastar Exploration     |                   |                   | Exchange                    | :                 |                   |
|          |           |     |   |                                       |              |            |            |            |            |                  | Ì                  | USA Inc and Atinum     | Chesapeake        | Statoil USA       | Titleholder LLC             |                   |                   |
|          |           |     |   |                                       |              |            |            |            |            |                  |                    |                        |                   | Onshore           | mered with and              | Statoil USA       |                   |
|          |           |     |   |                                       |              |            |            |            |            |                  | C                  | Marcellus I LLC to     | Appalachia LLC    |                   | 1                           |                   |                   |
|          |           |     |   |                                       |              |            |            |            |            |                  | Gastar Exploration | Chesapeake             | to SWN            | Properties Inc to | into SWN                    | Onshore           | SWN Production    |
|          |           |     |   |                                       |              |            |            |            |            |                  | USA Inc to Atinum  | Appalachia LLC and     | Production        | SWN Exchange      | Production                  | Properties Inc to | 1 ' '             |
|          |           |     |   | GASTAR EXPLORATION USA                |              |            |            | _          |            |                  | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:      | Titleholder LLC:  | Company LLC: CB             | TH Exploration    | TH Exploration    |
| 10*17211 | 5-23-11.3 | НН  | GARY WAYNE ZESIGER & VITORINA ZESIGER       | INC                                   | 1/8+         | 697        | 397        | N/A        | N/A        | N/A              | 23/353             | Properties Inc: 27/311 | 33/110            | 33/424            | 19/624<br>                  | LLC: 41/238       | LLC: 41/256       |
|          |           |     |   |                                       |              |            |            |            |            |                  |                    | Gastar Exploration     |                   |                   | Exchange                    |                   |                   |
|          | 1         |     |   |                                       |              |            | i          |            |            | İ                |                    | USA Inc and Atinum     | Chesapeake        | Statoil USA       | Titleholder LLC             |                   |                   |
|          |           |     |   |                                       |              |            |            |            |            |                  | 1                  | Marcellus I LLC to     | Appalachia LLC    | Onshore           | mered with and              | Statoil USA       |                   |
|          |           |     |   |                                       |              |            |            |            |            |                  | Gastar Exploration | Chesapeake             | to SWN            | Properties Inc to | into SWN                    | Onshore           | SWN Production    |
|          |           |     |   |                                       |              |            |            |            |            |                  | USA Inc to Atinum  | Appalachia LLC and     | Production        | SWN Exchange      | Production                  | Properties Inc to | 1                 |
|          | 1         |     |   | GASTAR EXPLORATION USA                |              |            |            |            |            |                  | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:      | Titleholder LLC:  | Company LLC: CB             | TH Exploration    | TH Exploration    |
|          |           |     |   | INC                                   | 1/0          | 697        | 158        | N/A        | N/A        | N/A              | 23/353             | Properties Inc: 27/311 | 33/110            | 33/424            | 19/624                      | LLC: 41/238       | LLC: 41/256       |
| 10*17212 | 5-23-11.3 | НН  | DARRELL NEWLAND LYDIA NEWLAND               | INC                                   | 1/8+         | 097        | 136        | N/A        | IN/A       | IN/A             | 23/333             | Properties inc. 27/311 | 33/110            | 33/424            | ivierger - Svviv            | LLC. 41/236       | LLC. 41/230       |
|          | ]         |     |   |                                       |              |            |            |            |            |                  |                    | Gastar Exploration     | 1                 |                   | Exchange                    |                   |                   |
|          |           |     |   |                                       |              |            |            |            |            |                  |                    | USA Inc and Atinum     | Chesapeake        | Statoil USA       | Titleholder LLC             | ]                 |                   |
|          |           |     |   |                                       |              |            |            |            |            |                  |                    | Marcellus I LLC to     | Appalachia LLC    | Onshore           | mered with and              | Statoil USA       |                   |
|          |           |     |   |                                       |              |            | 1          |            |            |                  | Gastar Exploration | Chesapeake             | to SWN            | Properties Inc to | into SWN                    | Onshore           | SWN Production    |
|          |           |     |   |                                       |              |            | i          |            |            |                  | USA Inc to Atinum  | Appalachia LLC and     | Production        | SWN Exchange      | Production                  | Properties Inc to | Company LLC to    |
|          |           |     |   | GASTAR EXPLORATION USA                |              |            |            |            |            |                  | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:      | Titleholder LLC:  | Company LLC: CB             | TH Exploration    | TH Exploration    |
| 10*17213 | 5-23-11.3 | нн  | CAROL DEEN GARDNER                          | INC                                   | 1/8+         | 697        | 154        | N/A        | N/A        | N/A              | 23/353             | Properties Inc: 27/311 | 33/110            | 33/424            | 19/624                      | LLC: 41/238       | LLC: 41/256       |
| 10*17213 | 5-23-11.3 | НН  | BETTY JEAN NEELY                            | TH EXPLORATION LLC                    | 1/8+         | 929        | 60         | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                         | N/A               | N/A               |
| 10 18273 | 3-23-11.3 |     | MARY LOU WILSON AND STANLEY D WILSON        |                                       |              |            |            |            |            |                  |                    |                        |                   |                   |                             |                   |                   |
| 10*18366 | 5-23-11.3 | нн  | MICHAEL WILSON AIF                          | TH EXPLORATION LLC                    | 1/8+         | 931        | 311        | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                         | N/A               | N/A               |
| 10*18369 | 5-23-11.3 | НН  | CRAIG ALAN YOHO AND DONNA M YOHO            | TH EXPLORATION LLC                    | 1/8+         | 931        | 303        | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                         | N/A               | N/A               |
| 10*18370 | 5-23-11.3 | нн  | SAMUEL D YOHO                               | TH EXPLORATION LLC                    | 1/8+         | 931        | 300        | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                         | N/A               | N/A               |
|          |           |     | DAVID N DEVICK TRUSTEE OF THE TONI JO MASON |                                       |              |            |            |            |            |                  |                    |                        |                   |                   |                             |                   |                   |
| 10*18379 | 5-23-11.3 | нн  | LIVING TRUST                                | TH EXPLORATION LLC                    | 1/8+         | 932        | 439        | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                         | N/A               | N/A               |
| 10*19540 | 5-23-11.3 | НН  | ERICA M MASON                               | TH EXPLORATION LLC                    | 1/8+         | 942        | 53         | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                         | N/A               | N/A               |
| 10*19652 | 5-23-11.3 | HH  | JACK R HAMMERS                              | TH EXPLORATION LLC                    | 1/8+         | 944        | 108        | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                         | N/A               | N/A               |
| 10*19903 | 5-23-11.3 | нн  | PAUL F HAMMERS                              | TH EXPLORATION LLC                    | 1/8+         | 948        | 236        | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                         | N/A               | N/A               |
| 10*22008 | 5-23-11.3 | НН  | COLIN R YOHO AND NORMA L YOHO               | TH EXPLORATION LLC                    | 1/8+         | 953        | 304        | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                         | N/A               | N/A               |
| 10*22025 | 5-23-11.3 | HH  | MARK EUGENE YOHO & MARY YOHO                | TH EXPLORATION LLC                    | 1/8+         | 960        | 544        | N/A        | N/A        | N/A              | N/A                | N/A<br>N/A             | N/A<br>N/A        | N/A<br>N/A        | N/A                         | N/A               | N/A               |
| 10*22129 | 5-23-11.3 | НН  | JANICE N HAUDENSCHILT                       | TH EXPLORATION LLC                    | 1/8+         | 961        | 459        | N/A        | N/A        | N/A<br>N/A       | N/A<br>N/A         | N/A<br>N/A             | N/A<br>N/A        | N/A<br>N/A        | N/A<br>N/A                  | N/A               | N/A<br>N/A        |
| 10*22441 | 5-23-11.3 | HH  | APRIL ROSE POSTLETHWAIT                     | TH EXPLORATION LLC                    | 1/8+         | 963<br>964 | 646<br>432 | N/A<br>N/A | N/A<br>N/A | N/A<br>N/A       | N/A                | N/A                    | N/A               | N/A               | N/A                         | N/A<br>N/A        | N/A<br>N/A        |
| 10*22510 | 5-23-11.3 | HH  | DONNA V YOHO                                | TH EXPLORATION LLC TH EXPLORATION LLC | 1/8+<br>1/8+ | 1008       | 320        | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                         | N/A               | N/A               |
| 10*23372 | 5-23-11.3 | HH  | DEWEY A MILICIA                             | TH EXPLORATION LLC                    | 1/8+         | 988        | 429        | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                         | N/A               | N/A               |
| 10*23373 | 5-23-11.3 | HH  | DANA MILICIA HUMPHREYS                      | TH EXPLORATION LLC                    | 1/8+         | 1008       | 316        | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                         | N/A               | N/A               |
| 10*23446 | 5-23-11.3 | HH  | NICOLETTA MILICIA BLOODWORTH                | TH EXPLORATION LLC                    | 1/8+         | 1034       | 548        | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A               | N/A                         | N/A               | N/A               |
| 10*25627 | 5-23-11.3 | HH  | CHESTNUT HOLDINGS INC                       | TH EXPLORATION LLC                    | 1/01         | 1034       | 340        | ily A      | 10/7       | 1977             | 1.47.              | 14//                   | .,,,,             | .,,,,             |                             |                   | 1477              |
| 1        |           |     |   |                                       |              |            |            |            |            |                  |                    |                        |                   |                   | Name Chane -                | 1                 |                   |
|          |           |     |   |                                       |              |            |            |            |            |                  | Gastar Exploration |                        |                   | Merger - SWN      | Statoil USA                 | 1                 | 1                 |
| 1        |           |     |   |                                       |              | 1          |            |            | ĺ          |                  | USA Inc and Atinum |                        | i                 | Exchange          | Onshore                     | 1                 | 1                 |
|          |           |     |   |                                       |              |            |            |            |            |                  | Marcellus I LLC to |                        | Statoil USA       | Titleholder LLC   | Properties Inc              | 1                 | 1                 |
| !        |           | 1   |   |                                       | 1            | 1          | [          |            | 1          | Gastar           | Chesapeake         |                        | Onshore           | mered with and    | chaned its name to          | 1                 | Equinor USA       |
| 1        |           |     |   |                                       | Į            | 1          |            |            |            | Exploration USA  | Appalachia LLC and | Chesapeake             | Properties Inc to | into SWN          | Equinor USA                 | SWN Production    | Onshore           |
|          |           |     |   |                                       | 1            |            |            |            |            | Inc to Atinum    | Statoil USA        | Appalachia LLC to      | SWN Exchange      | Production        | Onshore                     | Company LLC to    | Properties Inc to |
| 1        |           | 1   |   | GASTAR EXPLORATION USA                | 1            | 1          |            |            |            | Marcellus I LLC: | Onshore Properties | SWN Production         | Titleholder LLC:  | Company LLC: CB   | Properties Inc:             | TH Exploration    | TH Exploration    |
|          |           |     |   |                                       |              |            |            |            |            |                  |                    |                        |                   |                   |                             |                   |                   |

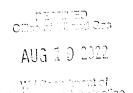
|          | 1         |     |                                      | l . i                  |         | l       | 1       |            | l          | 1                | l                  | l                      | 1                 | l                 | 1                           | 1                  | 1                             |
|----------|-----------|-----|--------------------------------------|------------------------|---------|---------|---------|------------|------------|------------------|--------------------|------------------------|-------------------|-------------------|-----------------------------|--------------------|-------------------------------|
| Lease ID | TMP       | Tag | Grantor, Lessor, Etc.                | Grantee, Lessee, Etc.  | Royalty | Deed Bo | ok/Page | Assignment | Assignment | Assignment       | Assignment         | Assignment             | Assignment        | Assignment        | Assignment                  | Assignment         | Assignment                    |
| ĺ        |           |     |                                      |                        |         |         |         |            |            |                  |                    |                        | İ                 |                   | Name Chane -                |                    |                               |
| ļ        | i         |     |                                      | }                      |         |         |         |            |            |                  | Gastar Exploration |                        |                   | Merger - SWN      | Statoil USA                 |                    |                               |
| . 1      |           |     |                                      | ]                      |         | 1       | 1 I     |            |            |                  | USA Inc and Atinum |                        |                   | Exchange          | Onshore                     |                    |                               |
|          |           |     |                                      |                        |         |         | i I     |            |            |                  | Marcellus I LLC to | -                      | Statoil USA       | Titleholder LLC   | Properties Inc              |                    |                               |
|          |           |     |                                      |                        |         |         |         |            |            | Gastar           | Chesapeake         |                        | Onshore           | mered with and    | chaned its name to          | 1                  | Equinor USA                   |
| ı İ      |           |     |                                      |                        |         |         |         |            |            | Exploration USA  | Appalachia LLC and | Chesapeake             | Properties Inc to | into SWN          | Equinor USA                 | SWN Production     | Onshore                       |
| , l      |           |     | i                                    | 1                      |         |         |         |            |            | Inc to Atinum    | Statoil USA        | Appalachia LLC to      | SWN Exchange      | Production        | Onshore                     | Company LLC to     | Properties Inc to             |
|          |           |     |                                      | GASTAR EXPLORATION USA |         | 1       |         |            |            | Marcellus I LLC: | Onshore Properties | SWN Production         | Titleholder LLC:  | Company LLC: CB   | Properties Inc:             | TH Exploration     | TH Exploration                |
| 10*27085 | 5-23-11.3 | НН  | DAPHNE HUFFMAN AND CHARLES HUFFMAN   | INC                    | 1/8+    | 697     | 383     | N/A        | N/A        | 23/353           | Inc: 27/311        | Company LLC: 33/110    | 33/424            | 19/624            | 2/427                       | LLC: 44/141        | LLC: 44/147                   |
| ( J      |           |     |                                      |                        |         |         | 1       |            |            |                  |                    |                        |                   |                   | Name Chane -                |                    |                               |
| 1        |           |     |                                      |                        |         |         | 1       |            |            |                  | Gastar Exploration |                        |                   | Merger - SWN      | Statoil USA                 |                    |                               |
| 1        |           |     |                                      |                        |         |         |         |            | 1          |                  | USA Inc and Atinum |                        |                   | Exchange          | Onshore                     | 1                  |                               |
| 1        |           |     |                                      |                        |         |         |         |            |            |                  | Marcellus I LLC to |                        | Statoil USA       | Titleholder LLC   | Properties Inc              | 1                  |                               |
| ( )      |           |     |                                      |                        |         |         |         |            |            | Gastar           | Chesapeake         |                        | Onshore           | mered with and    | chaned its name to          |                    | Equinor USA                   |
| ( )      |           |     |                                      |                        |         | 1       | 1       |            |            | Exploration USA  | Appalachia LLC and | Chesapeake             | Properties Inc to | into SWN          | Equinor USA                 | SWN Production     | Onshore                       |
| 1        |           |     |                                      |                        |         |         |         |            |            | Inc to Atinum    | Statoil USA        | Appalachia LLC to      | SWN Exchange      | Production        | Onshore                     | Company LLC to     | l.                            |
| ( )      | ļ ļ       |     |                                      | GASTAR EXPLORATION USA |         |         |         |            |            | Marcellus I LLC: | Onshore Properties | SWN Production         | Titleholder LLC:  | Company LLC: CB   | Properties Inc:             | TH Exploration     | TH Exploration                |
| 10*27086 | 5-23-11.3 | нн  | DONALD R NEWLAND AND SUZANNE NEWLAND | INC                    | 1/8+    | 698     | 639     | N/A        | N/A        | 23/353           | Inc: 27/311        | Company LLC: 33/110    | 33/424            | 19/624            | 2/427                       | LLC: 44/141        | LLC: 44/147                   |
|          |           |     | PIKEWOOD ENERGY CORPORATION AN OHIO  |                        |         |         |         |            |            |                  |                    |                        |                   |                   |                             |                    |                               |
| 10*27714 | 5-23-11.3 | НН  | CORPORATION                          | TH EXPLORATION LLC     | 1/8+    | 1060    | 572     | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | N/A<br>Gastar     | N/A<br>Merger - Gastar      | N/A                | N/A                           |
| 1 '      |           |     |                                      |                        | 1       |         |         |            | İ          |                  |                    |                        |                   | Exploration USA   | Exploration USA             | Gastar             | Atinum Marcellus              |
| 1 '      |           |     |                                      |                        |         |         |         |            | }          |                  |                    |                        |                   | Inc to Atinum     | Inc into Gastar             | Exploration Inc to |                               |
| ,        |           |     |                                      | GASTAR EXPLORATION USA |         |         |         |            |            | }                |                    |                        |                   | Marcellus I LLC:  | Exploration, Inc:           | TH Exploration II  | 1                             |
| 1        |           | .,  | TWILA O WHIPKEY                      | INC                    | 1/8+    | 799     | 61      | N/A        | N/A        | N/A              | N/A                | N/A                    | N/A               | 806/1             | 21/41                       | LLC: 36/9          | Exploration II LLC:<br>43/563 |
| 10*14786 | 5-23-11.8 | וו  | TWILA O WHIPKET                      | IIVC                   | 1/61    | /33     | 1 01    | 1970       | 14/7       | 19/6             | 19/6               | 11/7                   | 19/2              | 800/1             | werger - Swin               | LLC. 30/3          | 43/303                        |
| 1        |           |     |                                      |                        |         |         |         |            | l          |                  |                    | Gastar Exploration     |                   |                   | Exchange                    |                    |                               |
| ,        | i i       |     |                                      |                        |         |         | 1 1     |            |            |                  |                    | USA Inc and Atinum     | Chesapeake        | Statoil USA       | Titleholder LLC             |                    | 1                             |
| 1        |           |     |                                      |                        |         |         |         |            |            |                  |                    | Marcellus I LLC to     | Appalachia LLC    | Onshore           | mered with and              | Statoil USA        |                               |
| 1        |           |     |                                      |                        |         |         |         |            |            |                  | Gastar Exploration | Chesapeake             | to SWN            | Properties Inc to | into SWN                    | Onshore            | SWN Production                |
| '        |           |     |                                      |                        |         |         |         |            |            |                  | USA Inc to Atinum  | Appalachia LLC and     | Production        | SWN Exchange      | Production                  | Properties Inc to  | Company LLC to                |
|          |           |     |                                      | GASTAR EXPLORATION USA |         |         |         |            |            |                  | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:      | Titleholder LLC:  | Company LLC: CB             | TH Exploration     | TH Exploration                |
| 10*17195 | 5-23-11.8 | ננ  | PATRICIA HARTMAN                     | INC                    | 1/8+    | 695     | 317     | N/A        | N/A        | N/A              | 23/353             | Properties Inc: 27/311 | 33/110            | 33/424            | 19/624<br>Ivierger - Svviv  | LLC: 41/238        | LLC: 41/256                   |
|          |           |     |                                      |                        |         |         |         |            |            | 1                |                    | Gastar Exploration     |                   |                   |                             |                    |                               |
| !        |           |     |                                      |                        | 1       |         |         |            |            |                  |                    | USA Inc and Atinum     | Chesapeake        | Statoil USA       | Exchange<br>Titleholder LLC |                    |                               |
|          |           |     |                                      |                        |         |         |         |            | İ          | İ                |                    | Marcellus I LLC to     | Appalachia LLC    | Onshore           |                             | C+-+-:! ! ! ! C A  |                               |
| 1        |           |     |                                      |                        |         |         |         |            |            |                  | Castar Funlaration |                        | l                 |                   | mered with and              | Statoil USA        | Sum P. J                      |
| 1        |           | İ   |                                      | 1                      | 1       |         |         |            |            |                  | Gastar Exploration | Chesapeake             | to SWN            | Properties Inc to | into SWN                    | Onshore            | SWN Production                |
| !        |           | İ   |                                      |                        | }       |         |         |            |            |                  | USA Inc to Atinum  | Appalachia LLC and     | Production        | SWN Exchange      | Production                  | Properties Inc to  | 1 ' '                         |
| !        | l         | l   |                                      | GASTAR EXPLORATION USA | 1       |         |         |            |            |                  | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:      | Titleholder LLC:  | Company LLC: CB             | TH Exploration     | TH Exploration                |
| 10*17196 | 5-23-11.8 | زر  | DELBERT R. MONTGOMERY                | INC                    | 1/8+    | 695     | 311     | N/A        | N/A        | N/A              | 23/353             | Properties Inc: 27/311 | 33/110            | 33/424            | 19/624<br>Werger - Swin     | LLC: 41/238        | LLC: 41/256                   |
|          |           |     |                                      |                        |         |         |         |            |            |                  |                    | Gastar Exploration     |                   |                   | Exchange                    |                    |                               |
| 1        |           | 1   |                                      |                        | 1       | 1       |         |            | 1          |                  |                    | USA Inc and Atinum     | Chesapeake        | Statoil USA       | Titleholder LLC             |                    |                               |
|          | 1         |     |                                      |                        | 1       | 1       |         |            | 1          |                  |                    | Marcellus I LLC to     | Appalachia LLC    | Onshore           | mered with and              | Statoil USA        |                               |
|          |           |     |                                      |                        | 1       | 1       |         |            | 1          |                  | Gastar Exploration | Chesapeake             | to SWN            | Properties Inc to | into SWN                    | Onshore            | SWN Production                |
| i        |           |     |                                      |                        | 1       | 1       |         |            | i          |                  | USA Inc to Atinum  | Appalachia LLC and     | Production        | SWN Exchange      | Production                  | Properties Inc to  | 1                             |
|          |           |     | 1                                    | 1                      | ı       | 1       | i 1     |            | I          | 1                |                    |                        | 1                 |                   |                             |                    | 1 ' '                         |
|          | l         | 1   |                                      | GASTAR EXPLORATION USA | 1       | 1       | 1 1     |            | 1          | 1                | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:      | Titleholder LLC:  | Company LLC: CB             | TH Exploration     | TH Exploration                |

| Lease ID | ТМР       | Tag | Grantor, Lessor, Etc.                                    | Grantee, Lessee, Etc.    | Royalty | Deed Bo | ok/Page | Assignment | Assignment | Assignment | Assignment  | Assignment  | Assignment  | Assignment  | Assignment   | Assignment   | Assignment   |
|----------|-----------|-----|--|--------------------------|---------|---------|---------|------------|------------|------------|---|---|---|---|--|--|--|
|          |           |     |  | CASTAN EVAL OBATION LISA |         |         |         |            |            |            | Gastar Exploration USA Inc to Atinum Marcellus I LLC:                 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore  | Chesapeake Appalachia LLC to SWN Production                             | Statoil USA<br>Onshore<br>Properties Inc to<br>SWN Exchange<br>Titleholder LLC:           | Exchange Titleholder LLC mered with and into SWN Production  | Statoil USA<br>Onshore<br>Properties Inc to                                  | 1 ' '  |
| 10*17199 | 5-23-11.8 | ננ  | PAMELA L DRAZIC AND JEFFREY DRAZIC                       | GASTAR EXPLORATION USA   | 1/8+    | 695     | 315     | N/A        | N/A        | N/A        | 23/353  | Properties Inc: 27/311  | Company LLC:<br>33/110  | 33/424  | Company LLC: CB<br>19/624  | TH Exploration<br>LLC: 41/238  | TH Exploration<br>LLC: 41/256                            |
| 10*17200 | 5-23-11.8 | u   | STEPHANIE L BATES  | GASTAR EXPLORATION USA   | 1/8+    | 697     | 156     | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353          | Gastar Exploration USA Inc and Atinum Marcellus I LLC to  | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110         | Statoil USA<br>Onshore<br>Properties Inc to<br>SWN Exchange<br>Titleholder LLC:<br>33/424 | INITION TO THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF T | Statoil USA<br>Onshore<br>Properties Inc to<br>TH Exploration<br>LLC: 41/238 | SWN Production   |
|          |           |     |  | GASTAR EXPLORATION USA   | 1/8+    | 697     | 395     | N/A        | N/A        | N/A        | Gastar Exploration<br>USA Inc to Atinum<br>Marcellus I LLC:<br>23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311                         | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110         | Statoil USA<br>Onshore<br>Properties Inc to<br>SWN Exchange<br>Titleholder LLC:<br>33/424 | Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624   | Statoil USA<br>Onshore<br>Properties Inc to<br>TH Exploration<br>LLC: 41/238 | TH Exploration   |
| 10*17201 | 5-23-11.8 |     | DENISE A GALE  | GASTAR EXPLORATION USA   |         |         | 385     | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353          | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore  | Chesapeake<br>Appalachia LLC<br>to SWN<br>Production<br>Company LLC:    | Statoil USA<br>Onshore<br>Properties Inc to<br>SWN Exchange<br>Titleholder LLC:           | Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB  | Statoil USA<br>Onshore<br>Properties Inc to<br>TH Exploration                | SWN Production<br>Company LLC to<br>TH Exploration       |
| 10*17202 | 5-23-11.8 | JJ  | JANE GALE  | GASTAR EXPLORATION USA   | 1/8+    | 697     |         |            |            |            | Gastar Exploration USA Inc to Atinum Marcellus I LLC:                 | Appalachia LLC and<br>Statoil USA Onshore   | 33/110  Chesapeake Appalachia LLC to SWN Production Company LLC:        | 33/424  Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC:               | 19/624 INTERECTION EXCHANGE TITLEHOLDER LLC mered with and into SWN Production Company LLC: CB   | Statoil USA Onshore Properties Inc to TH Exploration                         | SWN Production<br>Company LLC to<br>TH Exploration       |
| 10*17203 | 5-23-11.8 | ננ  | BARRY RAY MOORE  CLARENCE RICHARD ZESIGER & MARY ZESIGER | GASTAR EXPLORATION USA   | 1/8+    | 697     | 387     | N/A        | N/A        | N/A        | 23/353  Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353  | Properties Inc: 27/311  Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | 33/110  Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | 33/424  Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424        | 19/624 INTERIOR SANIA Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624   | Statoil USA Onshore Properties inc to TH Exploration LLC: 41/238             | SWN Production Company LLC to TH Exploration LLC: 41/256 |

|          |           |      |  |                                       |         |  |            |            | Ι          | Γ          | 1                  |                        |                |                   | 1                           |                   |                  |
|----------|-----------|------|--|---------------------------------------|---------|--|------------|------------|------------|------------|--------------------|------------------------|----------------|-------------------|-----------------------------|-------------------|------------------|
|          | TMP       | Tag  | Grantor, Lessor, Etc.                          | Grantee, Lessee, Etc.                 | Royalty | Deed Bo  | ok/Page    | Assignment | Assignment | Assignment | Assignment         | Assignment             | Assignment     | Assignment        | Assignment                  | Assignment        | Assignment       |
| Lease ID | TIVE      | 1 dg | Giantor, Lessor, Ltc.                          |                                       | ,,      |  |            |            | -          |            |                    |                        | •              |                   | Assignment                  | rissignment       | Assignment       |
| 1        | i         |      |  |                                       |         |  |            |            |            |            |                    | Gastar Exploration     | ۱              |                   | Exchange                    | İ                 |                  |
| 1        | 1         |      |  |                                       |         |  |            |            |            | •          |                    | USA Inc and Atinum     | Chesapeake     | Statoil USA       | Titleholder LLC             |                   |                  |
|          |           |      |  |                                       |         |  |            |            |            |            |                    | Marcellus I LLC to     | Appalachia LLC | Onshore           | mered with and              | Statoil USA       |                  |
| 1        |           |      |  |                                       |         |  |            |            |            | }          | Gastar Exploration | Chesapeake             | to SWN         | Properties Inc to | into SWN                    | Onshore           | SWN Production   |
|          | l 1       |      |  |                                       | ĺ       |  |            |            |            |            | USA Inc to Atinum  | Appalachia LLC and     | Production     | SWN Exchange      | Production                  | Properties Inc to | Company LLC to   |
|          |           |      |  | GASTAR EXPLORATION USA                | 4/0     |  |            |            |            |            | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:   | Titleholder LLC:  | Company LLC: CB             |                   | TH Exploration   |
| 10*17206 | 5-23-11.8 | JJ   | M VIRGINIA & EDWARD C MARSH                    | INC                                   | 1/8+    | 697  | 399        | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311 | 33/110         | 33/424            | 19/624<br>IVIETRET - SVVIN  | LLC: 41/238       | LLC: 41/256      |
|          |           |      |  |                                       |         |  |            |            |            |            |                    | Gastar Exploration     |                |                   | Exchange                    |                   | 1                |
|          |           |      |  |                                       |         |  |            |            |            |            |                    | USA Inc and Atinum     | Chesapeake     | Statoil USA       | Titleholder LLC             |                   | i                |
|          |           |      |  |                                       | 1       | ĺ  |            |            |            |            |                    | Marcellus I LLC to     | Appalachia LLC | Onshore           | mered with and              | Statoil USA       |                  |
|          |           |      |  |                                       |         |  |            |            |            |            | Gastar Exploration | Chesapeake             | to SWN         | Properties Inc to | into SWN                    | Onshore           | SWN Production   |
|          |           |      |  |                                       | 1       |  |            |            |            |            | USA Inc to Atinum  | Appalachia LLC and     | Production     | SWN Exchange      | Production                  | Properties Inc to | Company LLC to   |
|          |           |      | DEBORAH K. KLIMASZEWSKI FRANK                  | GASTAR EXPLORATION USA                | ĺ       |  |            |            |            | 1          | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:   | Titleholder LLC:  | Company LLC: CB             | 1 '               | TH Exploration   |
|          |           | Ш    | KLIMASZEWSKI, SR.                              | INC                                   | 1/8+    | 697  | 389        | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311 | 33/110         | 33/424            |                             | LLC: 41/238       | LLC: 41/256      |
| 10*17207 | 5-23-11.8 |      | KLIIVIASZEWSKI, SK.                            | inte                                  |         | <del>                                     </del> | - 505      |            | 1,1,1      | 14.1       |                    | 27,022                 | 55,220         | 35,121            | 19/624<br>Weiger - SWN      | LLC. 41/230       | EEC. 41/230      |
|          |           |      |  |                                       |         |  |            |            |            | 1          |                    | Gastar Exploration     | 1              |                   | Exchange                    | i                 |                  |
| ì        | 1         |      |  |                                       |         |  |            |            |            |            |                    | USA Inc and Atinum     | Chesapeake     | Statoil USA       | Titleholder LLC             |                   |                  |
|          |           |      |  | i                                     |         |  |            |            |            | 1          |                    | Marcellus I LLC to     | Appalachia LLC | Onshore           | mered with and              | Statoil USA       |                  |
| 1        | 1         |      |  |                                       |         |  |            |            |            |            | Gastar Exploration | Chesapeake             | to SWN         | Properties Inc to | into SWN                    | Onshore           | SWN Production   |
|          | 1         |      |  |                                       |         |  |            |            |            | ĺ          | USA Inc to Atinum  | Appalachia LLC and     | Production     | SWN Exchange      | Production                  | Properties Inc to | Company LLC to   |
|          | 1         |      |  | GASTAR EXPLORATION USA                |         |  |            |            |            |            | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:   | Titleholder LLC:  | Company LLC: CB             | TH Exploration    | TH Exploration   |
| 10*17210 | 5-23-11.8 | ננ   | MARILYN NOEL                                   | INC                                   | 1/8+    | 697  | 393        | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311 | 33/110         | 33/424            | 19/624                      | LLC: 41/238       | LLC: 41/256      |
|          |           |      |  |                                       | l       |  |            |            | 1          | 1          |                    | Gastar Exploration     |                |                   | Exchange                    |                   |                  |
|          |           |      |  |                                       |         | l  |            |            |            | ]          |                    | USA Inc and Atinum     | Chesapeake     | Statoil USA       | Titleholder LLC             |                   | 1                |
|          |           |      | 1  |                                       |         |  |            |            |            |            |                    | Marcellus I LLC to     | Appalachia LLC | Onshore           | mered with and              | Statoil USA       | 1                |
|          | 1         |      | 1  |                                       |         | 1  |            |            |            |            | Gastar Exploration | Chesapeake             | to SWN         | 1                 | into SWN                    |                   | CHAIR DO NOT THE |
|          | l .       |      |  |                                       |         |  |            |            |            |            | USA Inc to Atinum  | Appalachia LLC and     | l .            | Properties Inc to | l .                         | Onshore           | SWN Production   |
|          | i         |      |  | CACTAR EVELORATION LICA               |         | 1  |            |            |            |            | Marcellus I LLC:   | Statoil USA Onshore    | Production     | SWN Exchange      | Production                  | Properties Inc to | Company LLC to   |
|          |           | Ì    |  | GASTAR EXPLORATION USA                | 1/0.    | 697  | 397        | N/A        | N/A        | N/A        | 1                  |                        | Company LLC:   | Titleholder LLC:  | Company LLC: CB             | TH Exploration    | TH Exploration   |
| 10*17211 | 5-23-11.8 | IJ   | GARY WAYNE ZESIGER & VITORINA ZESIGER          | INC                                   | 1/8+    | 697  | 397        | N/A        | IN/A       | N/A        | 23/353             | Properties Inc: 27/311 | 33/110         | 33/424            | 19/624<br>IVIEI ger - SVVIV | LLC: 41/238       | LLC: 41/256      |
|          |           |      |  |                                       |         |  |            |            | 1          |            |                    | Gastar Exploration     |                |                   | Exchange                    |                   |                  |
|          | 1         | Ì    |  |                                       |         | 1  |            |            |            |            |                    | USA Inc and Atinum     | Chesapeake     | Statoil USA       | Titleholder LLC             |                   | 1                |
| Ì        |           |      |  |                                       |         | 1  |            |            |            | l          |                    | Marcellus I LLC to     | Appalachia LLC | Onshore           | mered with and              | Statoil USA       |                  |
|          |           |      |  |                                       |         |  |            |            |            |            | Gastar Exploration | Chesapeake             | to SWN         | Properties Inc to | into SWN                    | Onshore           | SWN Production   |
|          |           |      |  |                                       |         |  |            |            |            |            | USA Inc to Atinum  | Appalachia LLC and     | Production     | SWN Exchange      | Production                  | Properties Inc to | Company LLC to   |
|          |           |      |  | GASTAR EXPLORATION USA                |         |  |            |            | 1          |            | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:   | Titleholder LLC:  | Company LLC: CB             | TH Exploration    | TH Exploration   |
| 10*17212 | 5-23-11.8 | 11   | DARRELL NEWLAND LYDIA NEWLAND                  | INC                                   | 1/8+    | 697  | 158        | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311 | 33/110         | 33/424            | 19/624                      | LLC: 41/238       | LLC: 41/256      |
| 10 1/212 | 3 23 12.0 |      |  |                                       |         |  |            |            |            |            |                    | 6                      |                |                   | wierger - Swiv              |                   |                  |
| İ        |           |      |  |                                       |         |  |            |            |            |            |                    | Gastar Exploration     | d              |                   | Exchange                    | ]                 |                  |
| - I      | 1         |      |  | 1                                     |         | 1  |            |            |            |            |                    | USA Inc and Atinum     | Chesapeake     | Statoil USA       | Titleholder LLC             |                   |                  |
| 1        | 1         | 1    |  |                                       |         |  |            |            | 1          |            |                    | Marcellus I LLC to     | Appalachia LLC | Onshore           | mered with and              | Statoil USA       |                  |
|          |           |      |  |                                       |         | 1  |            |            | 1          |            | Gastar Exploration | Chesapeake             | to SWN         | Properties Inc to | into SWN                    | Onshore           | SWN Production   |
|          | 1         | 1    |  |                                       |         | 1  |            |            |            |            | USA Inc to Atinum  | Appalachia LLC and     | Production     | SWN Exchange      | Production                  | Properties Inc to | Company LLC to   |
|          | 1         |      |  | GASTAR EXPLORATION USA                |         |  |            |            |            |            | Marcellus I LLC:   | Statoil USA Onshore    | Company LLC:   | Titleholder LLC:  | Company LLC: CB             | TH Exploration    | TH Exploration   |
| 10*17213 | 5-23-11.8 | زز   | CAROL DEEN GARDNER                             | INC                                   | 1/8+    | 697  | 154        | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311 | 33/110         | 33/424            | 19/624                      | LLC: 41/238       | LLC: 41/256      |
| 10*19652 | 5-23-11.8 | IJ   | JACK R HAMMERS                                 | TH EXPLORATION LLC TH EXPLORATION LLC | 1/8+    | 944<br>948                                       | 108<br>236 | N/A<br>N/A | N/A<br>N/A | N/A<br>N/A | N/A<br>N/A         | N/A<br>N/A             | N/A<br>N/A     | N/A<br>N/A        | N/A                         | N/A               | N/A              |
| 10*19903 | 5-23-11.8 | 1 11 | PAUL F HAMMERS                                 | TH EXPLORATION LLC                    | 1/8+    | 960  | 544        | N/A        | N/A<br>N/A | N/A<br>N/A | N/A<br>N/A         | N/A<br>N/A             | N/A<br>N/A     | N/A<br>N/A        | N/A<br>N/A                  | N/A<br>N/A        | N/A              |
| 10*22025 | 5-23-11.8 | 111  | MARK EUGENE YOHO & MARY YOHO                   | TH EXPLORATION LLC                    | 1/8+    | 961  | 459        | N/A        | N/A        | N/A        | N/A                | N/A                    | N/A            | N/A<br>N/A        | N/A<br>N/A                  | N/A<br>N/A        | N/A<br>N/A       |
| 10*22129 | 5-23-11.8 | וו   | JANICE N HAUDENSCHILT  APRIL ROSE POSTLETHWAIT | TH EXPLORATION LLC                    | 1/8+    | 963  | 646        | N/A        | N/A        | N/A        | N/A                | N/A                    | N/A            | N/A               | N/A                         | N/A<br>N/A        | N/A<br>N/A       |
| 10*22441 | 5-23-11.8 | JJ   | IAPRIL ROSE POSTLETRIVALI                      | THE EXILONATION LEC                   | 1,01    |  |            | .,,,,      | 1 .47.     | .,,,,      | 1                  | 14/1                   | 1975           | 1 17/2            |                             | 11//              | IV/A             |

## WW - 6A1 Supplement

| Lease ID TMP 10*22510 5-23-11.8 10*23372 5-23-11.8 10*23446 5-23-11.8 10*27714 5-23-11.8 10*24466 5-23-11.8 | 1.8 JJ<br>1.8 JJ<br>1.8 JJ<br>1.8 JJ | Grantor, Lessor, Etc. DONNA V YOHO DEWEY A MILICIA DANA MILICIA HUMPHREYS NICOLETTA MILICIA BLOODWORTH PIKEWOOD ENERGY CORPORATION AN OHIO CORPORATION | Grantee, Lessee, Etc. TH EXPLORATION LLC TH EXPLORATION LLC TH EXPLORATION LLC TH EXPLORATION LLC TH EXPLORATION LLC | Royalty<br>1/8+<br>1/8+<br>1/8+<br>1/8+<br>1/8+ | 964<br>1008<br>988<br>1008 | 432<br>320<br>429<br>316 | Assignment<br>N/A<br>N/A<br>N/A<br>N/A | Assignment<br>N/A<br>N/A<br>N/A | Assignment<br>N/A<br>N/A | Assignment<br>N/A<br>N/A | Assignment<br>N/A<br>N/A              | Assignment<br>N/A<br>N/A | Assignment<br>N/A | Assignment<br>N/A                  | Assignment<br>N/A  | Assignment<br>N/A                     |
|---|--------------------------------------|--|--|---|----------------------------|--------------------------|--|---------------------------------|--------------------------|--------------------------|---------------------------------------|--------------------------|-------------------|------------------------------------|--------------------|---------------------------------------|
| 10*22510 5-23-11.8<br>10*23372 5-23-11.8<br>10*23373 5-23-11.8<br>10*23446 5-23-11.8<br>10*27714 5-23-11.8  | 1.8 JJ<br>1.8 JJ<br>1.8 JJ<br>1.8 JJ | DONNA V YOHO DEWEY A MILICIA DANA MILICIA HUMPHREYS NICOLETTA MILICIA BLOODWORTH PIKEWOOD ENERGY CORPORATION AN OHIO                                   | TH EXPLORATION LLC TH EXPLORATION LLC TH EXPLORATION LLC TH EXPLORATION LLC  | 1/8+<br>1/8+<br>1/8+<br>1/8+                    | 964<br>1008<br>988<br>1008 | 432<br>320<br>429<br>316 | N/A<br>N/A<br>N/A                      | N/A<br>N/A<br>N/A               | N/A<br>N/A               | N/A                      | N/A                                   | N/A                      | N/A               | N/A                                | N/A                |                                       |
| 10*23372 5-23-11.8<br>10*23373 5-23-11.8<br>10*23446 5-23-11.8<br>10*27714 5-23-11.8                        | 1.8 JJ<br>1.8 JJ<br>1.8 JJ           | DEWEY A MILICIA DANA MILICIA HUMPHREYS NICOLETTA MILICIA BLOODWORTH PIKEWOOD ENERGY CORPORATION AN OHIO  | TH EXPLORATION LLC TH EXPLORATION LLC TH EXPLORATION LLC   | 1/8+<br>1/8+<br>1/8+                            | 1008<br>988<br>1008        | 320<br>429<br>316        | N/A<br>N/A                             | N/A<br>N/A                      | N/A                      |                          |                                       |                          |                   |                                    |                    | I IN/A                                |
| 10*23373 5-23-11.8<br>10*23446 5-23-11.8<br>10*27714 5-23-11.8  | 1.8 JJ<br>1.8 JJ                     | DANA MILICIA HUMPHREYS NICOLETTA MILICIA BLOODWORTH PIKEWOOD ENERGY CORPORATION AN OHIO  | TH EXPLORATION LLC TH EXPLORATION LLC  | 1/8+<br>1/8+                                    | 988<br>1008                | 429<br>316               | N/A                                    | N/A                             |                          |                          |                                       |                          | l N/A             | N/A                                | N/A                | N/A                                   |
| 10*23446 5-23-11.8<br>10*27714 5-23-11.8  | 1.8 JJ                               | NICOLETTA MILICIA BLOODWORTH PIKEWOOD ENERGY CORPORATION AN OHIO   |  |   | 1008                       | 316                      | N/A                                    | 11/4                            | N/A                      | N/A                      | N/A                                   | N/A                      | N/A               | N/A                                | N/A                | N/A                                   |
| 10*27714 5-23-11.8  | ال 1.8                               | PIKEWOOD ENERGY CORPORATION AN OHIO  | TH EXPLORATION LLC   | 1/8+  | 1060                       |                          |  | N/A                             | N/A                      | N/A                      | N/A                                   | N/A                      | N/A               | N/A                                | N/A                | N/A                                   |
|   |                                      | CORPORATION  | TH EXPLORATION LLC   | 1/8+  | 1060_                      | l I                      |  |                                 |                          |                          |                                       |                          |                   |                                    |                    | · · · · · · · · · · · · · · · · · · · |
|   | 1.4 NN                               |  |  |   |                            | 572                      | N/A                                    | N/A                             | N/A                      | N/A                      | N/A                                   | N/A                      | N/A               | N/A                                | N/A                | N/A                                   |
| 40*14786 5-23-11.4  | 1.4 NN                               |  |  |   |                            |                          |  |                                 |                          |                          |                                       |                          | Gastar            | Merger - Gastar                    |                    |                                       |
| 40*14786 5-23-11.4  | 1.4 NN                               |  | 1  |   |                            |                          |  |                                 |                          |                          |                                       |                          | Exploration USA   | Exploration USA                    | Gastar             | Atinum Marcellus                      |
| 40*14786 5-23-11.4  | 1.4 NN                               |  | l i  |   |                            |                          |  |                                 |                          |                          |                                       |                          | Inc to Atinum     | Inc into Gastar                    | Exploration Inc to | I LLC to TH                           |
| ±0*14786 5-23-11.4  | 1.4 NN                               |  | GASTAR EXPLORATION USA   |   |                            |                          |  |                                 |                          |                          |                                       |                          | Marcellus I LLC:  | Exploration, Inc:                  | TH Exploration II  | Exploration II LLC:                   |
|   |                                      | TWILA O WHIPKEY  | INC  | 1/8+  | 799                        | 61                       | N/A                                    | N/A                             | N/A                      | N/A                      | N/A                                   | N/A                      | 806/1             | 21/41                              | LLC: 36/9          | 43/563                                |
|   |                                      |  | i  |   | İ                          |                          |  |                                 |                          |                          |                                       |                          | Gastar            | Merger - Gastar                    |                    |                                       |
|   |                                      |  |  |   |                            |                          |  |                                 |                          |                          |                                       |                          | Exploration USA   | Exploration USA                    | Gastar             | Atinum Marcellus                      |
| 1 1   | 1                                    |  | l  |   |                            |                          |  |                                 |                          |                          |                                       |                          | Inc to Atinum     | Inc into Gastar                    | Exploration Inc to | I LLC to TH                           |
| 1   |                                      |  | GASTAR EXPLORATION USA   |   |                            |                          |  |                                 |                          |                          |                                       |                          | Marcellus I LLC:  | Exploration, Inc:                  | TH Exploration II  |                                       |
| 10*14792 5-23-11.4  | 1.4 NN                               | тімотну уоно   | INC  | 1/8+  | 799                        | 536                      | N/A                                    | N/A                             | N/A                      | N/A                      | N/A                                   | N/A                      | 806/1<br>Gastar   | 21/41                              | LLC: 36/9          | 43/563                                |
|   |                                      |  |  |   |                            |                          |  |                                 |                          |                          |                                       |                          | Exploration USA   | Merger - Gastar<br>Exploration USA | C                  |                                       |
|   | 1                                    |  |  |   | •                          |                          |  |                                 |                          |                          |                                       |                          | Inc to Atinum     |                                    | Gastar             | Atinum Marcellus                      |
| 1   | l.                                   |  | CASTAR EVELORATION USA   |   |                            |                          |  |                                 |                          |                          |                                       |                          |                   | Inc into Gastar                    | Exploration Inc to | I LLC to TH                           |
|   |                                      |  | GASTAR EXPLORATION USA   | 1/0.  | 800                        | 598                      | N/A                                    | N/A                             | N/A                      | N/A                      | ) N/A                                 | N/A                      | Marcellus I LLC:  | Exploration, Inc:                  | 1 .                | Exploration II LLC:                   |
| 10*14797 5-23-11.4  | 1.4 NN                               | ORVILLE YOUNG  | INC  | 1/8+  | 800                        | 598                      | N/A                                    | IN/A                            | N/A                      | IN/A                     | N/A                                   | N/A                      | 806/1<br>Gastar   | 21/41<br>Merger - Gastar           | LLC: 36/9          | 43/563                                |
|   |                                      |  |  |   | ŀ                          |                          |  |                                 |                          |                          |                                       |                          | Exploration USA   | Exploration USA                    | Gastar             | Atinum Marcellus                      |
|   |                                      |  |  |   |                            |                          |  |                                 |                          |                          |                                       |                          | Inc to Atinum     | Inc into Gastar                    | Exploration Inc to | I LLC to TH                           |
|   |                                      | ONWARD E BURGE TRUST STEPHEN W BURGE AS  | GASTAR EXPLORATION USA   |   |                            |                          |  |                                 |                          |                          |                                       |                          | Marcellus I LLC:  | Exploration, Inc:                  | TH Exploration II  | Exploration II LLC:                   |
| 10*14822 5-23-11.4  | 1.4 NN                               | TRUSTEE  | INC  | 1/8+  | 876                        | 463                      | N/A                                    | N/A                             | N/A                      | N/A                      | N/A                                   | N/A                      | 35/144            | 21/41                              | LLC: 36/9          |                                       |
| 10*14822 5-23-11.   | 1.4 1919                             | IROSTEE  | 1140   | 1/0+  | 870                        | 403                      | 1975                                   | 19/5                            | 1970                     | 177                      | N/A                                   | IV/A                     | Gastar            | Merger - Gastar                    | LLC: 30/9          | 43/563                                |
|   |                                      |  |  |   |                            |                          |  |                                 |                          |                          |                                       |                          | Exploration USA   | Exploration USA                    | Gastar             | Atinum Marcellus                      |
|   |                                      |  | 1  |   |                            |                          |  |                                 |                          |                          | İ                                     |                          | Inc to Atinum     | Inc into Gastar                    | Exploration Inc to | I LLC to TH                           |
|   |                                      | SARAH L BURGE TRUST STEPHEN W BURGE AS   | GASTAR EXPLORATION USA   |   |                            | 1                        |  |                                 |                          |                          |                                       |                          | Marcellus I LLC:  | Exploration, Inc:                  | TH Exploration II  | Exploration II LLC:                   |
| 10*14823 5-23-11.   | 1.4 NN                               | TRUSTEE  | INC  | 1/8+  | 876                        | 459                      | N/A                                    | N/A                             | N/A                      | N/A                      | N/A                                   | N/A                      | 35/144            | 21/41                              | LLC: 36/9          | 43/563                                |
| 10 14023 5-23 11.   | 1111                                 | TROSTEL  |  |   |                            |                          |  |                                 |                          |                          |                                       |                          | Gastar            | Merger - Gastar                    | 220. 30/3          | 45/505                                |
| 1   |                                      |  |  |   |                            |                          |  |                                 |                          |                          |                                       |                          | Exploration USA   | Exploration USA                    | Gastar             | Atinum Marcellus                      |
|   |                                      |  |  |   |                            |                          |  |                                 |                          |                          |                                       |                          | Inc to Atinum     | Inc into Gastar                    | Exploration Inc to | I LLC to TH                           |
| 1   | j                                    |  | GASTAR EXPLORATION USA   |   |                            |                          |  |                                 |                          |                          |                                       |                          | Marcellus I LLC:  | Exploration, Inc:                  | TH Exploration II  | Exploration II LLC:                   |
| 10*14969 5-23-11.   | 1.4 NN                               | REBECCA S WORD   | INC  | 1/8+  | 872                        | 219                      | N/A                                    | N/A                             | N/A                      | N/A                      | N/A                                   | N/A                      | 35/119            | 21/41                              | LLC: 36/9          | 43/563                                |
|   |                                      |  |  |   |                            |                          |  |                                 |                          |                          |                                       |                          | Gastar            | Merger - Gastar                    |                    |                                       |
|   |                                      |  |  |   |                            |                          |  |                                 |                          |                          |                                       |                          | Exploration USA   | Exploration USA                    | Gastar             | Atinum Marcellus                      |
|   | ľ                                    |  |  |   |                            |                          |  |                                 |                          |                          |                                       |                          | Inc to Atinum     | Inc into Gastar                    | Exploration Inc to | I LLC to TH                           |
|   |                                      |  | GASTAR EXPLORATION USA   |   |                            |                          |  |                                 |                          |                          |                                       |                          | Marcellus I LLC:  | Exploration, Inc:                  | TH Exploration II  | Exploration II LLC:                   |
| 10*14970 5-23-11.   | .1.4 NN                              | GRACE EXLINE   | INC  | 1/8+  | 872                        | 623                      | N/A                                    | N/A                             | N/A                      | N/A                      | N/A                                   | N/A                      | 35/119            | 21/41                              | LLC: 36/9          | 43/563                                |
|   |                                      |  |  |   |                            |                          |  |                                 |                          |                          | Castar Fundametica                    |                          |                   | iviergei - Svviv                   |                    |                                       |
|   |                                      |  |  |   |                            |                          |  |                                 |                          |                          | Gastar Exploration USA Inc and Atinum | Character                | State 2 LICA      | Exchange                           |                    |                                       |
|   | 1                                    |  |  |   |                            |                          |  |                                 |                          |                          | 1                                     | Chesapeake               | Statoil USA       | Titleholder LLC                    |                    |                                       |
|   |                                      |  |  |   |                            |                          |  |                                 |                          | Contra Francis           | Marcellus I LLC to                    | Appalachia LLC           | Onshore           | mered with and                     | Statoil USA        |                                       |
|   |                                      |  |  |   | j                          |                          |  |                                 |                          | Gastar Exploration       | Chesapeake                            | to SWN                   | Properties Inc to | into SWN                           | 1                  | SWN Production                        |
|   | ı                                    |  |  |   | ł                          |                          |  |                                 |                          | USA Inc to Atinum        | Appalachia LLC and                    | Production               | SWN Exchange      | Production                         | Properties Inc to  | Company LLC to                        |
|   |                                      |  | GASTAR EXPLORATION USA   |   |                            | <sub></sub>              |  |                                 |                          | Marcellus I LLC:         | Statoil USA Onshore                   | Company LLC:             | Titleholder LLC:  | Company LLC: CB                    | TH Exploration     | TH Exploration                        |
| 10*17195 5-23-11.   | 1.4 NN                               | PATRICIA HARTMAN   | INC  | 1/8+  | 695                        | 317                      | N/A                                    | N/A                             | N/A                      | 23/353                   | Properties Inc: 27/311                | 33/110                   | 33/424            | 19/624                             | LLC: 41/238        | LLC: 41/256                           |



| Lease ID | TMP       | Tag   | Grantor, Lessor, Etc.              | Grantee, Lessee, Etc.  | Royalty | Deed Bo | ok/Page | Assignment | Assignment | Assignment  | Assignment             | Assignment             | Assignment     | Assignment        | Assignment                | Assignment        | Assignment     |
|----------|-----------|-------|------------------------------------|------------------------|---------|---------|---------|------------|------------|-------------|------------------------|------------------------|----------------|-------------------|---------------------------|-------------------|----------------|
|          |           |       |                                    |                        |         |         |         |            |            |             | 1                      | Gastar Exploration     |                |                   | Exchange                  |                   |                |
|          |           |       |                                    |                        |         |         |         |            |            |             |                        | USA Inc and Atinum     | Chesapeake     | Statoil USA       | Titleholder LLC           |                   |                |
|          |           |       |                                    |                        |         |         |         |            | 1          |             |                        | Marcellus I LLC to     | Appalachia LLC | Onshore           | mered with and            | Statoil USA       |                |
|          |           |       |                                    |                        |         |         |         |            |            |             | Gastar Exploration     | Chesapeake             | to SWN         | Properties Inc to | into SWN                  | Onshore           | SWN Production |
|          |           |       |                                    |                        |         |         |         |            |            |             | USA Inc to Atinum      | Appalachia LLC and     | Production     | SWN Exchange      | Production                | Properties Inc to | ı              |
|          |           |       |                                    | GASTAR EXPLORATION USA |         |         |         |            |            |             | Marcellus I LLC:       | Statoil USA Onshore    | Company LLC:   | Titleholder LLC:  | Company LLC: CB           | TH Exploration    | TH Exploration |
|          | 5-23-11.4 | NN    | DELBERT R. MONTGOMERY              | INC                    | 1/8+    | 695     | 311     | N/A        | N/A        | N/A         | 23/353                 | Properties Inc: 27/311 | 33/110         | 33/424            | 19/624                    | LLC: 41/238       | LLC: 41/256    |
| 10*17196 | 5-23-11.4 | ININ  | DELBERT R. MONTGOMERT              | inc .                  | 1,0.    | 033     | 311     | 197        | 147.       | 14/1        | 25,055                 |                        | 55/225         | 33,424            | Meißer - 20010            | 220. 41/250       | 120. 41/250    |
|          |           |       |                                    |                        |         |         |         |            |            |             |                        | Gastar Exploration     |                |                   | Exchange                  | 1                 |                |
|          |           |       |                                    | 1                      |         |         |         |            | 1          |             |                        | USA Inc and Atinum     | Chesapeake     | Statoil USA       | Titleholder LLC           |                   |                |
| ł        |           |       |                                    |                        |         |         |         |            |            |             |                        | Marcellus I LLC to     | Appalachia LLC | Onshore           | mered with and            | Statoil USA       |                |
|          | 1         |       |                                    |                        |         | 1       |         |            |            | İ           | Gastar Exploration     | Chesapeake             | to SWN         | Properties Inc to | into SWN                  | Onshore           | SWN Production |
| ł        |           |       |                                    |                        |         | 1       |         |            |            |             | USA Inc to Atinum      | Appalachia LLC and     | Production     | SWN Exchange      | Production                | Properties Inc to | 1 ' '          |
|          | 1         |       |                                    | GASTAR EXPLORATION USA |         |         |         |            |            |             | Marcellus I LLC:       | Statoil USA Onshore    | Company LLC:   | Titleholder LLC:  | Company LLC: CB           | TH Exploration    | TH Exploration |
| 10*17197 | 5-23-11.4 | NN    | GLORIA J. SIMMONS HAROLD SIMMONS   | INC                    | 1/8+    | 695     | 313     | N/A        | N/A        | N/A         | 23/353                 | Properties Inc: 27/311 | 33/110         | 33/424            | 19/624<br>Ivierger - Swin | LLC: 41/238       | LLC: 41/256    |
|          |           |       |                                    |                        |         |         |         |            |            | l           |                        | Gastar Exploration     | ,              |                   | Exchange                  |                   |                |
|          | 1         |       |                                    |                        |         |         |         |            |            |             |                        | USA Inc and Atinum     | Chesapeake     | Statoil USA       | Titleholder LLC           |                   |                |
| ì        |           |       |                                    | ŀ                      |         |         |         |            |            |             |                        | Marcellus I LLC to     | Appalachia LLC | Onshore           | mered with and            | Statoil USA       |                |
|          |           |       |                                    |                        | 1       |         |         |            |            |             | Gastar Exploration     | Chesapeake             | to SWN         | Properties Inc to | into SWN                  | Onshore           | SWN Production |
|          |           |       |                                    | 1                      |         |         |         |            |            |             | USA Inc to Atinum      | Appalachia LLC and     | Production     | SWN Exchange      | Production                | Properties Inc to | 1              |
|          |           |       |                                    | GASTAR EXPLORATION USA |         |         |         |            |            |             | Marcellus I LLC:       | Statoil USA Onshore    | Company LLC:   | Titleholder LLC:  | Company LLC: CB           | TH Exploration    | TH Exploration |
| 10*17199 | 5-23-11.4 | NN    | PAMELA L DRAZIC AND JEFFREY DRAZIC | INC                    | 1/8+    | 695     | 315     | N/A        | N/A        | N/A         | 23/353                 | Properties Inc: 27/311 | 33/110         | 33/424            | 19/624                    | LLC: 41/238       | LLC: 41/256    |
| 10 17199 | 3-23-11.4 | 1,1,1 | ·                                  |                        |         |         |         |            |            |             |                        |                        |                |                   | Iviergér - Svviv          |                   | ,              |
|          |           |       |                                    |                        |         |         |         |            |            |             | i                      | Gastar Exploration     |                |                   | Exchange                  |                   |                |
|          |           |       |                                    | 1                      | ĺ       |         |         |            |            | 1           |                        | USA Inc and Atinum     | Chesapeake     | Statoil USA       | Titleholder LLC           |                   |                |
| ļ        |           |       |                                    |                        |         |         |         |            |            |             |                        | Marcellus I LLC to     | Appalachia LLC | Onshore           | mered with and            | Statoil USA       |                |
|          |           |       |                                    |                        | 1       |         |         |            |            |             | Gastar Exploration     | Chesapeake             | to SWN         | Properties Inc to | into SWN                  | Onshore           | SWN Production |
| 1        |           |       |                                    | l                      |         |         |         |            |            |             | USA Inc to Atinum      | Appalachia LLC and     | Production     | SWN Exchange      | Production                | Properties Inc to | 1 ' '          |
|          |           | Ì     |                                    | GASTAR EXPLORATION USA |         |         |         |            |            |             | Marcellus I LLC:       | Statoil USA Onshore    | Company LLC:   | Titleholder LLC:  | Company LLC: CB           | TH Exploration    | TH Exploration |
| 10*17200 | 5-23-11.4 | NN    | STEPHANIE L BATES                  | INC                    | 1/8+    | 697     | 156     | N/A        | N/A        | N/A         | 23/353                 | Properties Inc: 27/311 | 33/110         | 33/424            | 19/624<br>Ivierger - SWIN | LLC: 41/238       | LLC: 41/256    |
| 1        | 1         |       |                                    |                        |         | 1       |         |            |            |             |                        | Gastar Exploration     |                |                   | Exchange                  |                   |                |
| 1        |           |       |                                    | 1                      |         |         |         |            |            |             |                        | USA Inc and Atinum     | Chesapeake     | Statoil USA       | Titleholder LLC           |                   | ì              |
|          |           |       |                                    | 1                      |         |         |         |            |            |             | 1                      | Marcellus I LLC to     | Appalachia LLC | Onshore           | mered with and            | Statoil USA       |                |
|          |           | 1     |                                    | 1                      | 1       | 1       | 1       |            |            |             | Gastar Exploration     | Chesapeake             | to SWN         | Properties Inc to | into SWN                  | Onshore           | SWN Production |
| 1        | 1         |       |                                    | 1                      |         |         |         |            |            | i           | USA Inc to Atinum      | Appalachia LLC and     | Production     | SWN Exchange      | Production                | Properties Inc to | Company LLC to |
|          |           |       |                                    | GASTAR EXPLORATION USA |         | ĺ       |         |            |            |             | Marcellus I LLC:       | Statoil USA Onshore    | Company LLC:   | Titleholder LLC:  | Company LLC: CB           | TH Exploration    | TH Exploration |
| 10*17201 | 5-23-11.4 | NN    | DENISE A GALE                      | INC                    | 1/8+    | 697     | 395     | N/A        | N/A        | N/A         | 23/353                 | Properties Inc: 27/311 | 33/110         | 33/424            | 19/624                    | LLC: 41/238       | LLC: 41/256    |
|          | 1         |       |                                    |                        |         |         |         |            |            |             |                        | Coston Francis         |                |                   | ivierger - SWIV           |                   |                |
| 1        | 1         |       |                                    |                        |         |         |         |            |            |             |                        | Gastar Exploration     | Chanada        | Charles I LIC :   | Exchange                  |                   |                |
|          |           |       |                                    |                        |         |         |         |            |            |             |                        | USA Inc and Atinum     | Chesapeake     | Statoil USA       | Titleholder LLC           | 61-1-1116:        |                |
| 1        |           | 1     |                                    |                        |         |         |         |            |            |             | Control Fronte and the | Marcellus I LLC to     | Appalachia LLC | Onshore           | mered with and            | Statoil USA       |                |
|          |           |       |                                    |                        |         | 1       |         |            |            |             | Gastar Exploration     | Chesapeake             | to SWN         | Properties Inc to | into SWN                  | Onshore           | SWN Production |
|          |           |       |                                    |                        |         |         |         |            | 1          |             | USA Inc to Atinum      | Appalachia LLC and     | Production     | SWN Exchange      | Production                | Properties Inc to | Company LLC to |
|          |           |       |                                    | GASTAR EXPLORATION USA |         |         |         |            |            | <b>,</b> ,, | Marcellus I LLC:       | Statoil USA Onshore    | Company LLC:   | Titleholder LLC:  | Company LLC: CB           | TH Exploration    | TH Exploration |
| 10*17202 | 5-23-11.4 | NN    | JANE GALE                          | INC                    | 1/8+    | 697     | 385     | N/A        | N/A        | N/A         | 23/353                 | Properties Inc: 27/311 | 33/110         | 33/424            | 19/624                    | LLC: 41/238       | LLC: 41/256    |

| Lease ID  | TMP       | Tag | Grantor, Lessor, Etc.                   | Grantee, Lessee, Etc.  | Royalty | Deed Bo | ok/Page | Assignment | Assignment | Assignment | Assignment         | Assignment                            | Assignment                   | Assignment             | Assignment                     | Assignment                    | Assignment                    |
|-----------|-----------|-----|---|------------------------|---------|---------|---------|------------|------------|------------|--------------------|---------------------------------------|------------------------------|------------------------|--------------------------------|-------------------------------|-------------------------------|
|           |           |     |   |                        | l       | ł       |         |            |            |            |                    | Gastar Exploration                    |                              |                        | Exchange                       |                               |                               |
|           |           |     |   |                        | l       |         |         |            |            |            |                    | USA Inc and Atinum                    | Chesapeake                   | Statoil USA            | Titleholder LLC                |                               |                               |
| l         |           |     |   |                        |         |         |         |            |            |            |                    | Marcellus I LLC to                    | Appalachia LLC               | Onshore                | mered with and                 | Statoil USA                   |                               |
| 1         |           |     |   | 1                      |         | 1       |         |            |            |            | Gastar Exploration | Chesapeake                            | to SWN                       | Properties Inc to      | into SWN                       | Onshore                       | SWN Production                |
| ì         | i i       |     |   | 1                      |         |         |         |            |            |            | USA Inc to Atinum  | Appalachia LLC and                    | Production                   | SWN Exchange           | Production                     | Properties Inc to             |                               |
|           |           |     |   | GASTAR EXPLORATION USA | ļ       | l       |         |            |            |            | Marcellus I LLC:   | Statoil USA Onshore                   | Company LLC:                 | Titleholder LLC:       | Company LLC: CB                | TH Exploration                | TH Exploration                |
| 10*17203  | 5-23-11.4 | NN  | BARRY RAY MOORE                         | INC                    | 1/8+    | 697     | 387     | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311                | 33/110                       | 33/424                 | 19/624                         | LLC: 41/238                   | LLC: 41/256                   |
|           |           |     |   |                        |         |         |         |            |            |            |                    | Gastar Exploration                    |                              |                        | Exchange                       |                               |                               |
|           |           |     |   |                        |         |         |         |            |            |            |                    | USA Inc and Atinum                    | Chesapeake                   | Statoil USA            | Titleholder LLC                |                               |                               |
|           |           |     |   | İ                      |         |         |         |            |            |            |                    | Marcellus I LLC to                    | Appalachia LLC               | Onshore                | mered with and                 | Statoil USA                   |                               |
| į         |           |     |   |                        |         |         |         |            |            |            | Gastar Exploration | Chesapeake                            | to SWN                       | Properties Inc to      |                                | Onshore                       | SWN Production                |
|           |           |     |   |                        |         |         |         | }          |            |            | USA Inc to Atinum  | Appalachia LLC and                    | Production                   | SWN Exchange           | Production                     | Properties Inc to             | 1                             |
|           |           |     |   | GASTAR EXPLORATION USA |         |         |         |            |            |            | Marcellus I LLC:   | Statoil USA Onshore                   | Company LLC:                 | Titleholder LLC:       | Company LLC: CB                | TH Exploration                | TH Exploration                |
| 10*17204  | 5-23-11.4 | NN  | CLARENCE RICHARD ZESIGER & MARY ZESIGER | INC                    | 1/8+    | 697     | 391     | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311                | 33/110                       | 33/424                 | 19/624                         | LLC: 41/238                   | LLC: 41/256                   |
| 10 1/20   | 5 25 22   |     |   |                        |         |         |         |            |            |            |                    | Contra Fundametica                    |                              |                        | iviergéi - Svviv               |                               |                               |
|           |           |     |   |                        |         |         |         |            |            |            |                    | Gastar Exploration                    | Chassassis                   | C4-4-ILLICA            | Exchange                       |                               |                               |
|           | i         |     |   |                        |         |         |         |            |            |            |                    | USA Inc and Atinum Marcellus I LLC to | Chesapeake<br>Appalachia LLC | Statoil USA<br>Onshore | Titleholder LLC mered with and | Chaha:ILUCA                   |                               |
| 1         |           |     |   |                        |         |         |         |            |            |            | Gastar Exploration | Chesapeake                            | to SWN                       | Properties Inc to      |                                | Statoil USA<br>Onshore        | CIAMAI Dan danation           |
|           | 1         |     |   |                        |         |         |         |            |            |            | USA Inc to Atinum  | Appalachia LLC and                    | Production                   | SWN Exchange           | Production                     |                               | SWN Production                |
|           |           |     | *                                       | GASTAR EXPLORATION USA |         |         |         |            |            |            | Marcellus I LLC:   | Statoil USA Onshore                   | Company LLC:                 | Titleholder LLC:       | Company LLC: CB                | Properties Inc to             | 1 ' '                         |
|           |           | l   | M VIRGINIA & EDWARD C MARSH             | INC                    | 1/8+    | 697     | 399     | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311                | 33/110                       | 33/424                 | 19/624                         | TH Exploration<br>LLC: 41/238 | TH Exploration<br>LLC: 41/256 |
| 10*17206  | 5-23-11.4 | NN  | M VIRGINIA & EDWARD C MARSH             | INC                    | 1/0+    | 037     | 333     | IN/A       | 11/2       | IN/A       | 23/333             |                                       | 33/110                       | 33/424                 | Meiger - SWN                   | LLC. 41/236                   | LLC: 41/256                   |
|           |           |     |   |                        |         |         |         |            |            |            |                    | Gastar Exploration                    |                              |                        | Exchange                       |                               |                               |
|           | 1         |     |   |                        |         | l       |         |            |            |            |                    | USA Inc and Atinum                    | Chesapeake                   | Statoil USA            | Titleholder LLC                |                               |                               |
|           |           |     |   |                        |         |         |         |            |            |            |                    | Marcellus I LLC to                    | Appalachia LLC               | Onshore                | mered with and                 | Statoil USA                   |                               |
|           |           |     |   |                        | 1       |         | 1       |            |            |            | Gastar Exploration | Chesapeake                            | to SWN                       | Properties Inc to      |                                | Onshore                       | SWN Production                |
|           |           |     |   | 1                      |         |         |         |            |            |            | USA Inc to Atinum  | Appalachia LLC and                    | Production                   | SWN Exchange           | Production                     | Properties Inc to             | Company LLC to                |
| 1         |           |     | DEBORAH K. KLIMASZEWSKI FRANK           | GASTAR EXPLORATION USA | 1       |         |         |            |            |            | Marcellus I LLC:   | Statoil USA Onshore                   | Company LLC:                 | Titleholder LLC:       | Company LLC: CB                | TH Exploration                | TH Exploration                |
| 10*17207  | 5-23-11.4 | NN  | KLIMASZEWSKI, SR.                       | INC                    | 1/8+    | 697     | 389     | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311                | 33/110                       | 33/424                 | 19/624<br>                     | LLC: 41/238                   | LLC: 41/256                   |
| l         |           |     |   |                        |         |         |         | ļ.         |            |            |                    | Gastar Exploration                    |                              |                        | Exchange                       |                               |                               |
|           | i         |     |   |                        |         |         | İ       |            |            |            |                    | USA Inc and Atinum                    | Chesapeake                   | Statoil USA            | Titleholder LLC                |                               |                               |
| ŀ         |           | l   |   |                        |         |         | ĺ       |            |            |            |                    | Marcellus I LLC to                    | Appalachia LLC               | Onshore                | mered with and                 | Statoil USA                   |                               |
|           | 1         |     |   |                        |         |         |         |            |            |            | Gastar Exploration | Chesapeake                            | to SWN                       | Properties Inc to      | into SWN                       | Onshore                       | SWN Production                |
| i         | 1         |     |   | 1                      |         |         |         |            |            |            | USA Inc to Atinum  | Appalachia LLC and                    | Production                   | SWN Exchange           | Production                     | Properties Inc to             | Company LLC to                |
| 1         |           |     |   | GASTAR EXPLORATION USA |         |         |         |            |            |            | Marcellus I LLC:   | Statoil USA Onshore                   | Company LLC:                 | Titleholder LLC:       | Company LLC: CB                | TH Exploration                | TH Exploration                |
| 10*17210  | 5-23-11.4 | NN  | MARILYN NOEL                            | INC                    | 1/8+    | 697     | 393     | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311                | 33/110                       | 33/424                 | 19/624                         | LLC: 41/238                   | LLC: 41/256                   |
|           |           |     |   |                        |         |         |         |            |            |            |                    | Gastar Exploration                    |                              | 1                      | Exchange                       |                               |                               |
| 1         |           |     |   |                        |         |         |         |            |            |            |                    | USA Inc and Atinum                    | Chesapeake                   | Statoil USA            | Titleholder LLC                | 1                             |                               |
| 1         | 1         | 1   |   |                        | 1       |         | 1       |            |            |            |                    | Marcellus I LLC to                    | Appalachia LLC               | Onshore                | mered with and                 | Statoil USA                   |                               |
|           | 1         |     |   |                        |         |         |         |            |            |            | Gastar Exploration | Chesapeake                            | to SWN                       | Properties Inc to      | into SWN                       | Onshore                       | SWN Production                |
|           | 1         |     |   |                        | 1       |         |         |            |            |            | USA Inc to Atinum  | Appalachia LLC and                    | Production                   | SWN Exchange           | Production                     | Properties Inc to             | Company LLC to                |
|           | 1         |     |   | GASTAR EXPLORATION USA | 1       | 1       |         |            |            | 1          | Marcellus I LLC:   | Statoil USA Onshore                   | Company LLC:                 | Titleholder LLC:       | Company LLC: CB                | TH Exploration                | TH Exploration                |
| 10\$17044 | F 22 44 4 |     | GARY WAYNE ZESIGER & VITORINA ZESIGER   | INC                    | 1/8+    | 697     | 397     | N/A        | N/A        | N/A        | 23/353             | Properties Inc: 27/311                | 33/110                       | 33/424                 | 19/624                         | LLC: 41/238                   | LLC: 41/256                   |
| 10*17211  | 5-23-11.4 | NN  | GART WATNE LESIGER & VITORINA LESIGER   | luse                   | 1 1/07  | U3/     | 1 331   | 14/7       | 1 14/7     | 11/7       |                    | 1 operices inc. 27/311                | 22/110                       | 1 33/424               | 1 23/024                       | LLC. 41/230                   | LLC. 41/230                   |

|                      |                        |          |  |                                       | -       |            |              |             |            | Ι          |                                       | I                      |                | T                 |                          | <u> </u>          |                |
|----------------------|------------------------|----------|--|---------------------------------------|---------|------------|--------------|-------------|------------|------------|---------------------------------------|------------------------|----------------|-------------------|--------------------------|-------------------|----------------|
| Lease ID             | ТМР                    | Tag      | Grantor, Lessor, Etc.  | Grantee, Lessee, Etc.                 | Royalty | Deed Bo    | ok/Page      | Assignment  | Assignment | Assignment | Assignment                            | Assignment             | Assignment     | Assignment        | Assignment               | Assignment        | Assignment     |
|                      |                        |          |  |                                       |         |            |              |             |            |            |                                       | Gastar Exploration     |                |                   | Exchange                 |                   |                |
|                      |                        |          |  | 1                                     |         |            |              |             |            |            |                                       | USA Inc and Atinum     | Chesapeake     | Statoil USA       | Titleholder LLC          |                   |                |
| 1                    | 1                      |          |  |                                       |         |            |              |             |            |            |                                       | Marcellus I LLC to     | Appalachia LLC | Onshore           | mered with and           | Statoil USA       |                |
|                      |                        |          |  |                                       |         |            |              |             |            |            | Gastar Exploration                    | Chesapeake             | to SWN         | Properties Inc to | into SWN                 | Onshore           | SWN Production |
|                      |                        |          |  |                                       |         |            |              |             |            | }          | USA Inc to Atinum                     | Appalachia LLC and     | Production     | SWN Exchange      | Production               | 1                 | 1              |
|                      | 1                      |          |  | GASTAR EXPLORATION USA                |         |            |              |             |            |            | Marcellus I LLC:                      | Statoil USA Onshore    | Company LLC:   | Titleholder LLC:  |                          | Properties Inc to | Company LLC to |
|                      |                        |          |  | INC                                   | 1/0.    | 697        | 158          | N/A         | N/A        | N/A        | 23/353                                | Properties Inc: 27/311 | 33/110         | 33/424            | Company LLC: CB          | TH Exploration    | TH Exploration |
| 10*17212             | 5-23-11.4              | NN       | DARRELL NEWLAND LYDIA NEWLAND  | INC                                   | 1/8+    | 097        | 130          | IN/A        | N/A        | IV/A       | 23/333                                | Properties inc. 27/511 | 33/110         | 33/424            | 19/624<br>Werger - Syviv | LLC: 41/238       | LLC: 41/256    |
|                      | i i                    |          |  | !                                     |         | l          |              |             |            |            |                                       | Gastar Exploration     |                |                   | Exchange                 |                   |                |
|                      | 1 1                    |          |  | <b>!</b>                              |         | l          |              |             |            |            |                                       | USA Inc and Atinum     | Chesapeake     | Statoil USA       | Titleholder LLC          |                   |                |
|                      | 1                      |          |  |                                       |         | ļ          |              |             |            |            |                                       | Marcellus I LLC to     | Appalachia LLC | Onshore           | mered with and           | Statoil USA       |                |
|                      |                        |          |  | 1                                     |         |            |              |             |            |            | Gastar Exploration                    | Chesapeake             | to SWN         | Properties Inc to | into SWN                 | Onshore           | SWN Production |
|                      |                        |          |  |                                       |         | 1          |              |             |            |            | USA Inc to Atinum                     | Appalachia LLC and     | Production     | SWN Exchange      | Production               | Properties Inc to | Company LLC to |
|                      | ı                      |          |  | GASTAR EXPLORATION USA                |         | l          |              |             |            | i          | Marcellus I LLC:                      | Statoil USA Onshore    | Company LLC:   | Titleholder LLC:  | Company LLC: CB          | TH Exploration    | TH Exploration |
| 40*47242             | 5-23-11.4              | NN       | CAROL DEEN GARDNER   | INC                                   | 1/8+    | 697        | 154          | N/A         | N/A        | N/A        | 23/353                                | Properties Inc: 27/311 | 33/110         | 33/424            | 19/624                   | LLC: 41/238       | LLC: 41/256    |
| 10*17213<br>10*17822 | 5-23-11.4              | NN       | ANTOINE E GERAUD   | TH EXPLORATION LLC                    | 1/8+    | 943        | 560          | N/A         | N/A        | N/A        | N/A                                   | N/A                    | N/A            | N/A               | N/A                      | N/A               | N/A            |
| 10*1/822             | 5-23-11.4              | NN       | DARRELL NEWLAND  | TH EXPLORATION LLC                    | 1/8+    | 927        | 66           | N/A         | N/A        | N/A        | N/A                                   | N/A                    | N/A            | N/A               | N/A                      | N/A               | N/A            |
| 10*18115             | 5-23-11.4              | NN       | DONALD R NEWLAND AND SUZANNE NEWLAND                                     | TH EXPLORATION LLC                    | 1/8+    | 927        | 73           | N/A         | N/A        | N/A        | N/A                                   | N/A                    | N/A            | N/A               | N/A                      | N/A               | N/A            |
| 10*18175             | 5-23-11.4              | NN       | BETTY JEAN NEELY   | TH EXPLORATION LLC                    | 1/8+    | 929        | 60           | N/A         | N/A        | N/A        | N/A                                   | N/A                    | N/A            | N/A               | N/A                      | N/A               | N/A            |
| 10 102/3             | 3-23-11.4              | 1414     | MARY LOU WILSON AND STANLEY D WILSON                                     |                                       |         |            |              |             |            |            | 1                                     | .,,,,                  |                | .,,               |                          |                   | ,,,,           |
| 10*18366             | 5-23-11.4              | NN       | MICHAEL WILSON AIF   | TH EXPLORATION LLC                    | 1/8+    | 931        | 311          | N/A         | N/A        | N/A        | N/A                                   | N/A                    | N/A            | N/A               | N/A                      | N/A               | N/A            |
| 10*18369             | 5-23-11.4              | NN       | CRAIG ALAN YOHO AND DONNA M YOHO   | TH EXPLORATION LLC                    | 1/8+    | 931        | 303          | N/A         | N/A        | N/A        | N/A                                   | N/A                    | N/A            | N/A               | N/A                      | N/A               | N/A            |
| 10*18370             | 5-23-11.4              | NN       | SAMUEL D YOHO  | TH EXPLORATION LLC                    | 1/8+    | 931        | 300          | N/A         | N/A        | N/A        | N/A                                   | N/A                    | N/A            | N/A               | N/A                      | N/A               | N/A            |
| 10 10370             | 3 23 11.7              |          | DAVID N DEVICK TRUSTEE OF THE TONI JO MASON                              |                                       |         |            |              |             |            |            |                                       |                        |                |                   |                          |                   |                |
| 10*18379             | 5-23-11.4              | NN       | LIVING TRUST   | TH EXPLORATION LLC                    | 1/8+    | 932        | 439          | N/A         | N/A        | N/A        | N/A                                   | N/A                    | N/A            | N/A               | N/A                      | N/A               | N/A            |
| 10*18541             | 5-23-11.4              | NN       | PATRICK P MCHENRY  | TH EXPLORATION LLC                    | 1/8+    | 933        | 649          | N/A         | N/A        | N/A        | N/A                                   | N/A                    | N/A            | N/A               | N/A                      | N/A               | N/A            |
| 10*18818             | 5-23-11.4              | NN       | LUCILLE R MCHENRY  | TH EXPLORATION LLC                    | 1/8+    | 937        | 624          | N/A         | N/A        | N/A        | N/A                                   | N/A                    | N/A            | N/A               | N/A                      | N/A               | N/A            |
| 10*19486             | 5-23-11.4              | NN       | BARBARA ANN MAYNARD  | TH EXPLORATION LLC                    | 1/8+    | 941        | 229          | N/A         | N/A        | N/A        | N/A                                   | N/A                    | N/A            | N/A               | N/A                      | N/A               | N/A            |
| 10*19540             | 5-23-11.4              | NN       | ERICA M MASON  | TH EXPLORATION LLC                    | 1/8+    | 942        | 53           | N/A         | N/A        | N/A        | N/A                                   | N/A                    | N/A            | N/A               | N/A                      | N/A               | N/A            |
| 10*19543             | 5-23-11.4              | NN       | ROBERT I BONAR SR  | TH EXPLORATION LLC                    | 1/8+    | 942        | 61           | N/A         | N/A        | N/A        | N/A                                   | N/A                    | N/A            | N/A               | N/A                      | N/A               | N/A            |
|                      |                        |          |  | 1                                     |         |            |              |             |            |            |                                       |                        |                |                   |                          |                   |                |
| 10*19640             | 5-23-11.4              | NN       | MARGARET F RICHMOND DEBORAH FEDOR POA                                    | TH EXPLORATION LLC                    | 1/8+    | 944        | 120          | N/A         | N/A        | N/A        | N/A                                   | N/A                    | N/A            | N/A               | N/A                      | N/A               | N/A            |
| 10*19641             | 5-23-11.4              | NN       | BRADFORD D LOWERY & DEBORAH LOWERY                                       | TH EXPLORATION LLC                    | 1/8+    | 944        | 122          | N/A         | N/A        | N/A        | N/A                                   | N/A                    | N/A            | N/A               | N/A                      | N/A               | N/A            |
| 10*19650             | 5-23-11.4              | NN       | CLAUDIA LOWERY MALLOY  | TH EXPLORATION LLC                    | 1/8+    | 944        | 99           | N/A         | N/A        | N/A        | N/A                                   | N/A                    | N/A            | N/A               | N/A                      | N/A               | N/A            |
| 10*19652             | 5-23-11.4              | NN       | JACK R HAMMERS   | TH EXPLORATION LLC                    | 1/8+    | 944        | 108          | N/A         | N/A        | N/A        | N/A                                   | N/A                    | N/A            | N/A               | N/A                      | N/A               | N/A            |
| 10*19657             | 5-23-11.4              | NN       | JANET LEE SPARKS   | TH EXPLORATION LLC                    | 1/8+    | 964        | 440          | N/A         | N/A        | N/A        | N/A                                   | N/A                    | N/A            | N/A               | N/A                      | N/A               | N/A            |
| 10*19732             | 5-23-11.4              | NN       | CARL M MCHENRY AND PAMELA MCHENRY  | TH EXPLORATION LLC                    | 1/8+    | 944        | 469          | N/A         | N/A        | N/A        | N/A                                   | N/A                    | N/A            | N/A               | N/A                      | N/A               | N/A            |
|                      | i                      |          |  | L.,                                   | 4 /0 :  | 960        | 188          |             |            |            |                                       |                        |                |                   |                          |                   | 1              |
| 10*19858             | 5-23-11.4              | NN       | JAMES MICHAEL YOHO   | TH EXPLORATION LLC                    | 1/8+    | 945        | 442          | N/A         | N/A        | N/A        | N/A                                   | N/A                    | N/A            | N/A               | N/A                      | N/A               | N/A            |
| 10*19903             | 5-23-11.4              | NN       | PAUL F HAMMERS   | TH EXPLORATION LLC                    | 1/8+    | 948        | 236          | N/A         | N/A        | N/A        | N/A                                   | N/A                    | N/A            | N/A               | N/A                      | N/A               | N/A            |
| 10*19996             | 5-23-11.4              | NN       | CHARLES D WOOD   | TH EXPLORATION LLC                    | 1/8+    | 947<br>951 | 589<br>608   | N/A<br>N/A  | N/A<br>N/A | N/A<br>N/A | N/A<br>N/A                            | N/A<br>N/A             | N/A<br>N/A     | N/A<br>N/A        | N/A                      | N/A               | N/A            |
| 10*21073             | 5-23-11.4              | NN       | ARDITH R ROSE AND TOMMY E ROSE   | TH EXPLORATION LLC TH EXPLORATION LLC | 1/8+    | 951        | 610          | N/A         | N/A        | N/A        | N/A                                   | N/A                    | N/A            | N/A               | N/A<br>N/A               | N/A<br>N/A        | N/A            |
| 10*21074             | 5-23-11.4              | NN       | MALCOLM E WOOD AND JOAN J WOOD   | TH EXPLORATION LLC                    | 1/8+    | 952        | 190          | N/A         | N/A        | N/A        | N/A                                   | N/A                    | N/A            | N/A               | N/A<br>N/A               |                   | N/A<br>N/A     |
| 10*21174             | 5-23-11.4              | NN       | SHAWN M WOOD   | TH EXPLORATION LLC                    | 1/8+    | 957        | 59           | N/A         | N/A        | N/A        | N/A                                   | N/A                    | N/A            | N/A               | N/A                      | N/A               |                |
| 10*21419             | 5-23-11.4              | NN       | DAPHNE HUFFMAN AND CHARLES HUFFMAN GARY WAYNE ZESIGER & VITORINA ZESIGER | TH EXPLORATION LLC                    | 1/8+    | 957        | 57           | N/A         | N/A        | N/A        | N/A                                   | N/A                    | N/A            | N/A<br>N/A        | N/A                      | N/A<br>N/A        | N/A<br>N/A     |
| 10*21431             | 5-23-11.4              | NN<br>NN | CECILIA D NEWLAND  | TH EXPLORATION LLC                    | 1/8+    | 957        | 55           | N/A         | N/A        | N/A        | N/A                                   | N/A                    | N/A            | N/A<br>N/A        | N/A                      | N/A<br>N/A        | N/A<br>N/A     |
| 10*21436             | 5-23-11.4              | NN       | M VIRGINIA & EDWARD C MARSH  | TH EXPLORATION LLC                    | 1/8+    | 957        | 53           | N/A         | N/A        | N/A        | N/A                                   | N/A                    | N/A            | N/A               | N/A                      | N/A               | N/A            |
| 10*21439             | 5-23-11.4<br>5-23-11.4 | NN       | KIMBERLY S DENNY AND JAMES E DENNY                                       | TH EXPLORATION LLC                    | 1/8+    | 957        | 244          | N/A         | N/A        | N/A        | N/A                                   | N/A                    | N/A            | N/A               | N/A                      | N/A               | N/A            |
| 10*21469<br>10*21471 | 5-23-11.4              | NN       | RICHARD ROSS WILSON  | TH EXPLORATION LLC                    | 1/8+    | 960        | 190          | N/A         | N/A        | N/A        | N/A                                   | N/A                    | N/A            | N/A               | N/A                      | N/A               | N/A            |
| 10-214/1             | 3-23-11.4              | ININ     | ROBERT CRAIG MONTGOMERY AND CYNTHIA R                                    | EXI EGISTION ELC                      | -, 0.   | 200        | <del> </del> | <del></del> | 1          | 1,         | 1 .,,,                                |                        | ,,,            | .,,,              | .40                      |                   |                |
| 10*21620             | 5-23-11.4              | NN       | MONTGOMERY   | TH EXPLORATION LLC                    | 1/8+    | 959        | 496          | N/A         | N/A        | N/A        | N/A                                   | N/A                    | N/A            | N/A               | N/A                      | N/A               | N/A            |
| 10*21620             | 3-23-11.4              | INIA     | photodista   |                                       | _, .    |            | 1            |             | J          |            | · · · · · · · · · · · · · · · · · · · |                        |                |                   | .,,,,                    |                   | .40            |

| Lease ID  | TMP       | Tag   | Grantor, Lessor, Etc.                    | Grantee, Lessee, Etc.  | Royalty | Deed Bo | ok/Page | Assignment | Assignment | Assignment       | Assignment   | Assignment          | Assignment        | Assignment                                  | Assignment   | Assignment     | Assignment        |
|-----------|-----------|-------|--|------------------------|---------|---------|---------|------------|------------|------------------|--|---------------------|-------------------|---|--|----------------|-------------------|
| 10*21621  | 5-23-11.4 | NN    | MARILYN NOEL                             | TH EXPLORATION LLC     | 1/8+    | 959     | 494     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*21658  | 5-23-11.4 | NN    | CLARENCE RICHARD ZESIGER & MARY ZESIGER  | TH EXPLORATION LLC     | 1/8+    | 959     | 490     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*21659  | 5-23-11.4 | NN    | DEBORAH BLOUGH                           | TH EXPLORATION LLC     | 1/8+    | 958     | 392     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*21660  | 5-23-11.4 | NN    | PAMELA L DRAZIC AND JEFFREY DRAZIC       | TH EXPLORATION LLC     | 1/8+    | 958     | 390     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*21830  | 5-23-11.4 | NN    | MARISSA MASON                            | TH EXPLORATION LLC     | 1/8+    | 960     | 200     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*21831  | 5-23-11.4 | NN    | MATTHEW MASON                            | TH EXPLORATION LLC     | 1/8+    | 966     | 122     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*21834  | 5-23-11.4 | NN    | GEORGE DANIEL KRUGER                     | TH EXPLORATION LLC     | 1/8+    | 960     | 204     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*21944  | 5-23-11.4 | NN    | JILL A BECK                              | TH EXPLORATION LLC     | 1/8+    | 960     | 101     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*21944  | 5-23-11.4 | NN    | WALLACE LYNN WENDEL                      | TH EXPLORATION LLC     | 1/8+    | 965     | 59      | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10 21947  | 3-23-11.4 | ININ  | DEBORAH K KLIMASZEWSI AND FRANK          | THE EARL COLOUR COLOR  | -/      |         |         |            |            |                  | 1  | .,,                 | 1                 |   | 1,4,1  |                | 1                 |
| 10*22007  | 5-23-11.4 | NN    | KLIMASZEWSKI                             | TH EXPLORATION LLC     | 1/8+    | 959     | 492     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*22008  | 5-23-11.4 | NN    | COLIN R YOHO AND NORMA L YOHO            | TH EXPLORATION LLC     | 1/8+    | 953     | 304     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*22025  | 5-23-11.4 | NN    | MARK EUGENE YOHO & MARY YOHO             | TH EXPLORATION LLC     | 1/8+    | 960     | 544     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*22023  | 5-23-11.4 | NN    | PHILLIP YOHO AND PATRICIA YOHO           | TH EXPLORATION LLC     | 1/8+    | 960     | 535     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*22032  | 5-23-11.4 | NN    | JOANNE E RAY                             | TH EXPLORATION LLC     | 1/8+    | 960     | 537     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*22106  | 5-23-11.4 | NN    | BARRY RAY MOORE                          | TH EXPLORATION LLC     | 1/8+    | 954     | 643     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*22129  | 5-23-11.4 | NN    | JANICE N HAUDENSCHILT                    | TH EXPLORATION LLC     | 1/8+    | 961     | 459     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*22123  | 5-23-11.4 | NN    | CONNIE L NEELY                           | TH EXPLORATION LLC     | 1/8+    | 961     | 466     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*22285  | 5-23-11.4 | NN    | DONALD JAMES WILSON AND SANDY L WILSON   | TH EXPLORATION LLC     | 1/8+    | 962     | 193     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*222334 | 5-23-11.4 | NN    | JOHN BRYANT                              | TH EXPLORATION LLC     | 1/8+    | 962     | 540     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*22434  | 5-23-11.4 | NN    | EDWIN NELSON WOOD                        | TH EXPLORATION LLC     | 1/8+    | 963     | 637     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*22434  | 5-23-11.4 | NN    | APRIL ROSE POSTLETHWAIT                  | TH EXPLORATION LLC     | 1/8+    | 963     | 646     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*22510  | 5-23-11.4 | NN    | DONNA V YOHO                             | TH EXPLORATION LLC     | 1/8+    | 964     | 432     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*22561  | 5-23-11.4 | NN    | MARY ROSE YOHO                           | TH EXPLORATION LLC     | 1/8+    | 968     | 200     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*22562  | 5-23-11.4 | NN    | HAROLD C SIMMONS                         | TH EXPLORATION LLC     | 1/8+    | 966     | 100     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*22563  | 5-23-11.4 | NN    | KIMBERLY D STRAUCH                       | TH EXPLORATION LLC     | 1/8+    | 966     | 522     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*22585  | 5-23-11.4 | NN    | CYNTHIA L CHICK                          | TH EXPLORATION LLC     | 1/8+    | 966     | 102     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10 22363  | 3-23-11.4 | IVIV  | CHAILIN E CHICK                          |                        | 1 7 5   |         |         |            |            |                  |  | i'i'                | 1                 |   | .,   | 1,,,,          | 177               |
| 10*22718  | 5-23-11.4 | NN NN | WILLIAM R RICHMOND AND CONNIE S RICHMONE | TH EXPLORATION LLC     | 1/8+    | 963     | 389     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*23372  | 5-23-11.4 | NN    | DEWEY A MILICIA                          | TH EXPLORATION LLC     | 1/8+    | 1008    | 320     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*23372  | 5-23-11.4 | NN    | DANA MILICIA HUMPHREYS                   | TH EXPLORATION LLC     | 1/8+    | 988     | 429     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*23446  | 5-23-11.4 | NN    | NICOLETTA MILICIA BLOODWORTH             | TH EXPLORATION LLC     | 1/8+    | 1008    | 316     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*23669  | 5-23-11.4 | NN    | LINDA K TOTTEN AND JERRY STEPHEN TOTTEN  | TH EXPLORATION LLC     | 1/8+    | 1010    | 358     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*24003  | 5-23-11.4 | NN    | CHARLES SIBURT AND PAULA SIBURT          | TH EXPLORATION LLC     | 1/8+    | 1020    | 193     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*24291  | 5-23-11.4 | NN    | MARY MARTHA BELLE DOYLE                  | TH EXPLORATION LLC     | 1/8+    | 1024    | 285     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*24491  | 5-23-11.4 | NN    | DENISE A GALE                            | TH EXPLORATION LLC     | 1/8+    | 1008    | 324     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*24890  | 5-23-11.4 | NN    | DEBRA JANE GALE                          | TH EXPLORATION LLC     | 1/8+    | 1021    | 122     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*25065  | 5-23-11.4 | NN    | COLBY G WOOD                             | TH EXPLORATION LLC     | 1/8+    | 1027    | 103     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*25066  | 5-23-11.4 | NN    | RODGER A HENDERSON JR                    | TH EXPLORATION LLC     | 1/8+    | 1027    | 97      | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
| 10*25627  | 5-23-11.4 | NN    | CHESTNUT HOLDINGS INC                    | TH EXPLORATION LLC     | 1/8+    | 1034    | 548     | N/A        | N/A        | N/A              | N/A  | N/A                 | N/A               | N/A   | N/A  | N/A            | N/A               |
|           |           |       |  |                        |         |         |         |            |            |                  | Gastar Exploration<br>USA Inc and Atinum<br>Marcellus I LLC to |                     | Statoil USA       | Merger - SWN<br>Exchange<br>Titleholder LLC | Name Chane -<br>Statoil USA<br>Onshore<br>Properties Inc |                |                   |
|           |           | 1     |  |                        |         |         |         |            |            | Gastar           | Chesapeake   |                     | Onshore           | mered with and                              | chaned its name to                                       | 1              | Equinor USA       |
|           |           |       |  |                        | 1       |         |         |            |            | Exploration USA  | Appalachia LLC and   | Chesapeake          | Properties Inc to | into SWN                                    | Equinor USA  | SWN Production | Onshore           |
|           |           |       |  |                        |         |         |         |            |            | Inc to Atinum    | Statoil USA  | Appalachia LLC to   | SWN Exchange      | Production                                  | Onshore  | Company LLC to | Properties Inc to |
|           |           |       |  | GASTAR EXPLORATION USA | .}      |         |         |            |            | Marcellus I LLC: | Onshore Properties   | SWN Production      | Titleholder LLC:  | Company LLC: CB                             | Properties Inc:  | TH Exploration | TH Exploration    |
| 10*27078  | 5-23-11.4 | NN    | CECILIA D NEWLAND                        | INC                    | 1/8+    | 697     | 381     | N/A        | N/A        | 23/353           | Inc: 27/311  | Company LLC: 33/110 | 33/424            | 19/624                                      | 2/427  | LLC: 44/141    | LLC: 44/147       |
| 10,5/0/9  | 3-23-11.4 | INIA  | CECITIV D MEMERIAD                       | 10.75                  | 1 2/0.  |         |         |            |            |                  |  | 1                   | 1                 |   | <u> </u>   | 1              | 1 220. 74/1       |

## **Well Bore Parcels**

## Operator's Well No. Elmer N - 15HU

| Lease ID | ТМР       | Tag | Grantor, Lessor, Etc.                | Grantee, Lessee, Etc.  | Royalty | Deed Bo | ok/Page | Assignment | Assignment | Assignment       | Assignment         | Assignment          | Assignment        | Assignment      | Assignment         | Assignment     | Assignment        |
|----------|-----------|-----|--------------------------------------|------------------------|---------|---------|---------|------------|------------|------------------|--------------------|---------------------|-------------------|-----------------|--------------------|----------------|-------------------|
|          |           |     |                                      |                        |         |         |         |            |            |                  |                    |                     |                   |                 | Name Chane -       |                |                   |
|          |           |     |                                      |                        |         |         |         |            |            |                  | Gastar Exploration |                     |                   | Merger - SWN    | Statoil USA        |                |                   |
|          | 1         |     |                                      |                        |         |         |         |            |            |                  | USA Inc and Atinum |                     |                   | Exchange        | Onshore            |                |                   |
|          | 1         |     |                                      |                        |         |         |         |            |            |                  | Marcellus I LLC to |                     | Statoil USA       | Titleholder LLC | Properties Inc     |                |                   |
|          |           |     |                                      |                        |         |         |         |            |            | Gastar           | Chesapeake         |                     | Onshore           |                 | chaned its name to |                | Equinor USA       |
|          | 1 1       |     |                                      |                        |         |         |         |            |            | Exploration USA  |                    |                     | Properties Inc to | into SWN        | Equinor USA        | SWN Production | Onshore           |
| 1        | 1         |     |                                      |                        |         |         |         |            |            | Inc to Atinum    | Statoil USA        | Appalachia LLC to   | SWN Exchange      | Production      | Onshore            | , ,            | Properties Inc to |
|          |           |     |                                      | GASTAR EXPLORATION USA |         |         |         |            |            | Marcellus I LLC: | Onshore Properties | SWN Production      |                   | Company LLC: CB | Properties Inc:    | TH Exploration | TH Exploration    |
| 10*27085 | 5-23-11.4 | NN  | DAPHNE HUFFMAN AND CHARLES HUFFMAN   | INC                    | 1/8+    | 697     | 383     | N/A        | N/A        | 23/353           | Inc: 27/311        | Company LLC: 33/110 | 33/424            | 19/624          | 2/427              | LLC: 44/141    | LLC: 44/147       |
|          |           |     |                                      |                        |         |         |         |            |            |                  |                    |                     |                   |                 | Name Chane -       |                | li                |
|          | 1         |     |                                      |                        |         |         |         |            |            |                  | Gastar Exploration |                     |                   | Merger - SWN    | Statoil USA        |                | }                 |
|          |           |     |                                      | 1                      |         |         |         |            |            | i                | USA Inc and Atinum |                     |                   | Exchange        | Onshore            |                |                   |
| ł        |           |     |                                      | l .                    | 1       |         |         |            |            |                  | Marcellus I LLC to |                     | Statoil USA       | Titleholder LLC | Properties Inc     |                | l                 |
| ı        |           |     |                                      | 1                      | İ       |         |         |            |            | Gastar           | Chesapeake         |                     | Onshore           | mered with and  | chaned its name to |                | Equinor USA       |
|          |           |     |                                      | 1                      | 1       |         |         |            |            | Exploration USA  | Appalachia LLC and |                     | Properties Inc to | into SWN        | Equinor USA        | SWN Production | Onshore           |
|          |           |     |                                      | 1                      |         |         |         |            |            | Inc to Atinum    | Statoil USA        | Appalachia LLC to   | SWN Exchange      | Production      | Onshore            | Company LLC to | Properties Inc to |
|          |           | 1   |                                      | GASTAR EXPLORATION USA |         |         |         |            |            | ı                | Onshore Properties | l e                 |                   | Company LLC: CB | Properties Inc:    | TH Exploration | TH Exploration    |
| 10*27086 | 5-23-11.4 | NN  | DONALD R NEWLAND AND SUZANNE NEWLAND | INC                    | 1/8+    | 698     | 639     | N/A        | N/A        | 23/353           | Inc: 27/311        | Company LLC: 33/110 | 33/424            | 19/624          | 2/427              | LLC: 44/141    | LLC: 44/147       |
|          |           |     | PIKEWOOD ENERGY CORPORATION AN OHIO  |                        |         |         |         |            |            |                  |                    |                     |                   |                 |                    |                |                   |
| 10*27714 | 5-23-11.4 | NN  | CORPORATION                          | TH EXPLORATION LLC     | 1/8+    | 1060    | 572     | N/A        | N/A        | N/A              | N/A                | N/A                 | N/A               | N/A             | N/A                | N/A            | N/A               |
| 10*27959 | 5-23-11.4 | NN  | STONE HILL MINERALS HOLDINGS LLC     | TH EXPLORATION LLC     | 1/8+    | 1063    | 594     | N/A        | N/A        | N/A              | N/A                | N/A                 | N/A               | N/A             | N/A                | N/A            | N/A               |

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### MEMORANDUM OF PARTIAL ASSIGNMENT OF OIL AND GAS LEASES

STATE OF WEST VIRGINIA \$

COUNTY OF WETZEL \$

This MEMORANDUM OF PARTIAL ASSIGNMENT OF OIL AND GAS LEASES (hereinafter, the "Memorandum") has been executed by and between PERKINS OIL & GAS, INC., a West Virginia corporation, whose address is 2966 Northwest Turnpike, Pennsboro, West Virginia 26415 (hereinafter the "Assignor"), and TH EXPLORATION, LLC, a Texas limited liability company (hereinafter the "Assignee") whose address is 1320 South University Drive, Suite 500, Fort Worth, Texas 76107. Assignor and Assignee are sometimes referred to herein, collectively, as the "Parties" and, individually, as a "Party." This Memorandum is being executed for the purpose of providing notice to third parties of the execution of a certain Partial Assignment of Oil and Gas Leases (hereinafter, the "Assignment"), by and between the Parties.

WHEREAS, Assignor is the current owner and lessee of certain oil and gas leases located in Wetzel County, West Virginia, covering specific parcels and being more particularly described on Exhibit "A" attached hereto and made a part hereof (collectively, the "Oil and Gas Leases").

In the Assignment dated effective as of the 15<sup>th</sup> day of October, 2020 (hereinafter, the "Effective Date") and this Memorandum, Assignor does hereby GRANT, BARGAIN, SELL, CONVEY, TRANSFER and ASSIGN unto Assignee, all right, title and interest in and to the Oil and Gas Leases INSOFAR AND ONLY INSOFAR as each lease and parcel covers those formations lying between two hundred (200) feet above and two hundred (200) feet below the formations commonly known to as the Utica/Point Pleasant Shale formations, or the stratigraphic equivalent thereof (such depths and formations being referred to as the "Assigned Formations"). The Assigned Formations are included with and part of the Assigned Rights as defined in the Assignment.

EXCLUDING THEREFROM AND EXCEPTING AND RESERVING UNTO THE ASSIGNOR, ITS SUCCESSORS AND ASSIGNS, THE <u>OVERRIDING ROYALTY INTEREST</u>, as defined in the Assignment.

The Assignment contains various other terms, provisions and conditions, all of which are incorporated herein by reference, and made a part hereof in all respects as though the same were fully set forth herein. To the extent that there are any inconsistencies between this Memorandum and the Assignment, the terms and provisions of the Assignment shall prevail.

Assignor does hereby bind itself and its successors and assigns to warrant and forever defend all and singular title to the Assigned Formations unto Assignee and Assignee's successors and assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof, by through, or under Assignor, but not otherwise.

This Memorandum is made expressly subject to the terms and conditions of the Purchase and Sale Agreement dated June, 24, 2020, by and between the Parties, all of which are fully incorporated herein by reference (the "Purchase Agreement").

This Memorandum may be executed in multiple counterparts, each of which shall be deemed an original instrument, but all such counterparts together shall constitute but one agreement.

[TWO SIGNATURE PAGES TO FOLLOW]



DPS LAND SERVICES-AMANDA 6000 TOWN CENTER BLVD STE 145 CANONSBURG PA 15317-5841

#### ASSIGNMENT OF OIL AND GAS LEASES

This ASSIGNMENT OF OIL AND GAS LEASES (hereinafter, "Assignment"), made the 7th day of October, 2021 (hereinafter, "Effective Date"), is by and between CNX GAS COMPANY LLC, a Virginia limited liability company, whose address is 1000 CONSOL Energy Drive, Suite 400, Canonsburg, Pennsylvania 15317 (hereinafter "Assignor") and TH EXPLORATION, LLC, a Texas limited liability company, whose address is 1320 S. University Drive, Suite 500, Fort Worth, Texas 76107 (hereinafter "Assignee"). All references in this Assignment to "Party" shall be deemed at all times to mean Assignor or Assignee and to "Parties" shall be deemed to mean both Assignor and Assignee. Capitalized terms used but not defined herein shall have the meaning given such terms in the Acreage Trade Agreement, by and between Assignor and Assignee dated May 26, 2021 (the "Trade Agreement").

WHEREAS, Assignor desires to assign all of Assignor's right, title and interest in and to the Assigned Rights (as defined below), as more particularly described in this Assignment.

NOW, THEREFORE, for and in consideration of TEN AND NO/100 DOLLARS (\$10.00) and other valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignor does hereby GRANT, BARGAIN, ASSIGN, TRANSFER, AND CONVEY unto Assignee the following "Assigned Rights" expressly excluding the Retained Rights (as defined below):

- (a) All of Assignor's right, title, and interest in and to the oil and gas leases described on <u>Exhibit A</u> attached hereto and made a part hereof located in Wetzel County, West Virginia ("<u>Leases</u>") TO THE EXTENT AND ONLY TO THE EXTENT of the Utica/Point Pleasant Formation (as defined below) (the Leases limited to the Utica/Point Pleasant Formation are the "<u>Leasehold Rights</u>");
- (b) all rights expressly granted under the Leases including rights related to, or necessary in connection with, the ownership, exploration, drilling, development, or operation of the Leasehold Rights, including, without limitation, any pooling or unitization, any ability to shut-in a well(s), and the non-exclusive access rights to conduct seismic, geophysical, and other investigations, install pipelines, roadways, surface locations, water and/or power lines, impoundments, structures, tanks, gas gathering and/or metering facilities, and all other related facilities; and
- (c) to the extent the formations shallower than the Utica/Point Pleasant Formation are owned or controlled by Assignor, the non-exclusive right to penetrate and drill through, but not stimulate, perforate or produce, the formations shallower than the Utica/Point Pleasant Formation in order to drill and produce from the Utica/Point Pleasant Formation.

TO HAVE AND TO HOLD the Assigned Rights unto Assignee, its respective successors and assigns, subject to the terms of this Assignment.

"Retained Rights" means: (i) any and all existing oil and/or gas wells currently in, on, or pertaining to the Leases ("Retained Wells"), (ii) all depths and formations for each Lease described on Exhibit A other than the Utica/Point Pleasant Formation ("Retained Formations"), (iii) all rights relating to, or necessary in connection with, the ownership, exploration, drilling, development, or operation of the Retained Wells and Retained Formations, including, without limitation, any pooling or unitization, any ability to shut-in any Retained Wells, and the non-exclusive access rights to conduct seismic, geophysical, and other investigations, install pipelines, roadways, surface locations, water and/or power lines,

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STATE OF WEST VIRGINIA
COUNTIES OF MARSHALL AND WETZEL

#### ASSIGNMENT AND CONVEYANCE

THIS ASSIGNMENT AND CONVEYANCE (the "Assignment") is made and entered into this 30th day of April, 2019 (the "Effective Date"), by and between Atinum Marcellus I, LLC (hereinafter "Assignor") and TH Exploration II, LLC, (hereinafter "Assignee" and, together with Assignor, the "Parties"). Capitalized terms used but not defined herein shall have the meanings commonly given to such terms in the industry.

#### WITNESSETH:

WHEREAS, Assignor desires to assign, set over, and transfer to Assignee all of Assignor's right, title, and interest in and to one hundred feet (100 ft.) above the formation commonly referred to as the Marcellus Shale formation down to one hundred feet (100 ft.) below the same, in those certain Oil and Gas Leases, or the portions of those certain Oil and Gas Leases, situated in Marshall and Wetzel Counties, West Virginia, as described in Exhibit "A-1" and limited and described in Exhibit "A-2", attached hereto and made a part hereof. It being the Parties intention to assign all of Assignor's interest in each unit as described in Exhibit "A-1", including any changes, revisions, or amendments to the same, now or at any time in the future. (hereinafter the "Leases"); and

WHEREAS, Assignor desires to assign, set over, and transfer to Assignee all of Assignor's right, title, and interest in and to the Leases as described below.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and subject to the limited warranties, restrictions and conditions hereinafter mentioned, the parties hereto, intending to be legally bound, do covenant and agree as follows:

1. Assignment. Assignor does hereby grant, bargain, sell, convey, deliver, assign, set over and transfer, as of the Effective Date, to Assignee, its respective successors and assigns, forever, all of Assignor's right, title, and interest in and to one hundred feet (100 ft.) above the formation commonly referred to as the Marcellus Shale formation down to one hundred feet (100 ft.) below the same, in the Leases, and the lands covered thereby, together with all rights incident thereto and appurtenances thereon. It being the Parties intention to assign all of Assignor's interest in each unit as described in Exhibit "A-1", including any changes, revisions, or amendments to the same, now or at any time in the future.

TO HAVE AND TO HOLD such right, title and interest in and to the Leases unto Assignee or its designee, and their respective successors and assigns, forever, in accordance with the provisions of this Assignment.

2. <u>Special Warranty</u>. Assignor represents and warrants that Assignor has not conveyed or otherwise encumbered (other than permits or easements, rights of way, surface leases and other rights with respect to surface operations that do not materially interfere with, impair or prohibit the operation of the affected Leases, hereinafter "<u>Permitted Bnoumbrances</u>") its interest in the Leases since the time that Assignor obtained its interests in the Leases. Assignor does covenant, promise and agree, to and with the

#### ASSIGNMENT AND CONVEYANCE

This Assignment and Conveyance (this "Assignment") is from SWN PRODUCTION COMPANY, LLC, a Texas limited liability company ("Assignor"), to TH Exploration, LLC, a Texas limited liability company ("Assignee"), and is executed on December 18, 2017 (the "Effective Date"). Assignor and Assignee may be referred to herein collectively as the "Parties," or individually as a "Party." Capitalized terms used herein but not otherwise defined herein (including in Section 3.7) shall have the meanings given such terms in that certain Acreage Trade Agreement between the Assignor and the Assignee dated August 24, 2017 (the "Acreage Trade Agreement").

## ARTICLE 1 ASSIGNMENT OF ASSETS

Section 1.1 <u>Assignment</u>. For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignor hereby GRANTS, BARGAINS, ASSIGNS, CONVEYS AND TRANSFERS unto Assignee all of Assignor's right, title and interest in and to (i) the oil and gas leases described in more detail on <u>Exhibit A</u> attached hereto (the "Leases") INSOFAR AND ONLY INSOFAR as they cover those lands described on <u>Exhibit A</u> (the "Leasehold Rights") and (ii) any surface use agreements that relate to such Leasehold Rights (collectively with the Leasehold Rights, the "Conveyed Assets").

TO HAVE AND TO HOLD the Conveyed Assets, together with all and singular the rights, privileges, contracts and appurtenances, in any way appertaining or belonging thereto, unto Assignee, its successors and assigns, forever, subject, to the terms and conditions of this Assignment.

Section 1.2 Assignment Subject to Acreage Trade Agreement. This Assignment is made in accordance with and is subject to the terms, covenants and conditions contained in that certain Acreage Trade Agreement. In the event of a conflict between the provisions of the Acreage Trade Agreement and this Assignment, the provisions of the Acreage Trade Agreement shall control. The execution and delivery of this Assignment by Assignor, and the execution and acceptance of this Assignment by Assignee, shall not operate to release or impair any surviving rights or obligations of either Party with respect to the other under the Acreage Trade Agreement.

## ARTICLE 2 SPECIAL WARRANTY OF TITLE AND DISCLAIMERS

Section 2.1 Special Warranty of Title. Assignor hereby agrees to warrant and defend Defensible Title to the Leases unto Assignee, its successors and assigns, against every Person whomsoever lawfully claiming or to claim the same or any part thereof by, through or under Assignor or any of its Affiliates, but not otherwise.

### Section 2.2 <u>Disclaimers of Warranties and Representations</u>.

(a) EXCEPT AS EXPRESSLY REPRESENTED OTHERWISE IN <u>SECTION</u> <u>VI</u> OF THE ACREAGE TRADE AGREEMENT OR THIS ASSIGNMENT, ASSIGNOR MAKES NO, AND HEREBY EXPRESSLY DISCLAIMS, ANY REPRESENTATION OR

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#### ASSIGNMENT AND CONVEYANCE

This Assignment and Conveyance (this "Assignment") is from EQUINOR USA ONSHORE PROPERTIES, INC., a Delaware corporation ("Assignor"), to TH Exploration, LLC, a Texas limited liability company ("Assignee"), and is executed on June 3, 2019 (the "Effective Date"). Assignor and Assignee may be referred to herein collectively as the "Parties," or individually as a "Party." Capitalized terms used herein but not otherwise defined herein (including in Section 3.7) shall have the meanings given such terms in that certain Acreage Trade Agreement between the Assignor and the Assignee dated December 1, 2018 (the "Acreage Trade Agreement").

# ARTICLE 1 ASSIGNMENT OF ASSETS

Section 1.1 <u>Assignment</u>. For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignor hereby GRANTS, BARGAINS, ASSIGNS, CONVEYS AND TRANSFERS unto Assignee all of Assignor's right, title and interest in and to (i) the oil and gas leases described in more detail on <u>Exhibit A</u> attached hereto (the "Leases") INSOFAR AND ONLY INSOFAR as they cover those lands described on <u>Exhibit A</u> (the "Leasehold Rights") and (ii) any surface use agreements that relate to such Leasehold Rights (collectively with the Leasehold Rights, the "Conveyed Assets").

TO HAVE AND TO HOLD the Conveyed Assets, together with all and singular the rights, privileges, contracts and appurtenances, in any way appertaining or belonging thereto, unto Assignee, its successors and assigns, forever, subject, to the terms and conditions of this Assignment.

Section 1.2 <u>Assignment Subject to Acreage Trade Agreement</u>. This Assignment is made in accordance with and is subject to the terms, covenants and conditions contained in that certain Acreage Trade Agreement. In the event of a conflict between the provisions of the Acreage Trade Agreement and this Assignment, the provisions of the Acreage Trade Agreement shall control. The execution and delivery of this Assignment by Assignor, and the execution and acceptance of this Assignment by Assignee, shall not operate to release or impair any surviving rights or obligations of either Party with respect to the other under the Acreage Trade Agreement.

# ARTICLE 2 SPECIAL WARRANTY OF TITLE AND DISCLAIMERS

Section 2.1 Special Warranty of Title. Assignor hereby agrees to warrant and defend Defensible Title to the Leases unto Assignee, its successors and assigns, against every Person whomsoever lawfully claiming or to claim the same or any part thereof by, through or under Assignor or any of its Affiliates, but not otherwise.

### Section 2.2 <u>Disclaimers of Warranties and Representations</u>.

EXCEPT AS EXPRESSLY REPRESENTED OTHERWISE IN SECTION VI OF THE ACREAGE TRADE AGREEMENT OR THIS ASSIGNMENT, ASSIGNOR MAKES NO, AND HEREBY EXPRESSLY DISCLAIMS, ANY REPRESENTATION OR WARRANTY, EXPRESS, IMPLIED OR STATUTORY, INCLUDING AS TO (I) TITLE TO THE LEASEHOLD RIGHTS, (II) THE CONTENTS, CHARACTER OR NATURE OF ANY DESCRIPTIVE MEMORANDUM, OR ANY REPORT OF ANY OF ITS PETROLEUM ENGINEERING CONSULTANTS, OR ANY GEOLOGICAL OR SEISMIC DATA OR INTERPRETATION, RELATING TO THE LEASEHOLD RIGHTS, (III) THE QUANTITY, QUALITY OR RECOVERABILITY OF PETROLEUM SUBSTANCES IN OR FROM THE LEASEHOLD RIGHTS, (IV) THE EXISTENCE OF ANY PROSPECT, OR ANY RECOMPLETION, INFILL OR STEP-OUT DRILLING OPPORTUNITIES, (V) ANY ESTIMATES OF THE VALUE OF THE LEASEHOLD RIGHTS, (VI) THE PRODUCTION OF PETROLEUM SUBSTANCES FROM THE LEASEHOLD RIGHTS, OR ANY PRODUCTION OR DECLINE RATES, (VII) THE MAINTENANCE, REPAIR, CONDITION, QUALITY, SUITABILITY, DESIGN OR MARKETABILITY OF THE LEASEHOLD RIGHTS, (VIII) INFRINGEMENT OF ANY INTELLECTUAL PROPERTY RIGHT, AND (IX) ANY OTHER MATERIALS OR INFORMATION THAT MAY HAVE BEEN MADE AVAILABLE OR COMMUNICATED TO ASSIGNEE OR ITS AFFILIATES, OR ITS OR THEIR RESPECTIVE