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

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

September 20, 2016
PERMIT MODIFICATION APPROVAL
Horizontal 6A / Horizontal 6A Well - 1

SWN PRODUCTION COMPANY, LLC
POST OFFICE BOX 12359

SPRING, TX 773914954

Re: Permit Modification Approval for GLADYS BRIGGS MSH 205H
47-051-01873-00-00

Lateral Modifications

SWN PRODUCTION COMPANY, 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.

James A. Martin
Chief

Operator's Well Number: GLADYS BRIGGS MSH 205H
Farm Name: JAMES R., ROGER J. & JOHN D. BRIGGS
U.S. WELL NUMBER: 47-051-01873-00-00
Horizontal 6A / Horizontal 6A Well - 1
Date Issued: September 20, 2016

WW-6B
(10/14)

API NO. 47- 51 - 01873 MOD
OPERATOR WELL NO. Gladys Briggs MSH 205H
Well Pad Name: Gladys Briggs MSH Pad

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

| 1) Well Operator: SWN Production Co., LLC | 494512924 | Marshall | 4-Liberty | 278-Cameron |
|---|---|---|---|---|
| API ⇒ 47-051-01873 | Operator ID | County | District | Quadrangle |

2) Operator's Well Number: Gladys Briggs MSH 205H Well Pad Name: Gladys Briggs MSH Pad

3) Farm Name/Surface Owner: Gladys R. Briggs Public Road Access: Fish Ridge Road

4) Elevation, current ground: 1382' Elevation, proposed post-construction: 1382'

5) Well Type (a) Gas x Oil _____ Underground Storage _____
Other _____
(b)If Gas Shallow x Deep _____
Horizontal x

JW 8/30/16

6) Existing Pad: Yes or No yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Associated Pressure(s):
Target Formation- Marcellus, Target Top TVD- 7138', Target Base TVD-7173' , Anticipated Thickness- 35', Associated Pressure- 4250

8) Proposed Total Vertical Depth: 7,153'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 16,394'

11) Proposed Horizontal Leg Length: 8451'

12) Approximate Fresh Water Strata Depths: 732'

13) Method to Determine Fresh Water Depths: from log analysis and nearby water wells

14) Approximate Saltwater Depths: 1741'

15) Approximate Coal Seam Depths: 1099'

16) Approximate Depth to Possible Void (coal mine, karst, other): None that we are aware of.

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

(a) If Yes, provide Mine Info: Name: _____
Depth: _____
Seam: _____
Owner: _____

RECEIVED
Office of Oil and Gas
SEP 06 2016
WV Department of
Environmental Protection

WW-6B
(10/14)

API NO. 47-51 - 01873 Mon
OPERATOR WELL NO. Gladys Briggs MSH 205H
Well Pad Name: Gladys Briggs MSH Pad

18) **CASING AND TUBING PROGRAM**

| TYPE | Size (in) | New or Used | Grade | Weight per ft. (lb/ft) | FOOTAGE: For Drilling (ft) | INTERVALS: Left in Well (ft) | CEMENT: Fill-up (Cu. Ft.)/CTS |
|---|---|---|---|---|---|---|---|
| Conductor | 20" | New | J-55 | 94# | 100' | 100' | CTS |
| Fresh Water | 13 3/8" | New | J-55 | 54.5# | 793' | 793' | 716 sx/CTS |
| Coal | 9 5/8" | New | J-55 | 40# | 2640' | 2640' | 986 sx/CTS |
| Intermediate | 7" | New | HCP-110 | 20# | If Needed | If Needed | If Needed/As Needed |
| Production | 5 1/2" | New | HCP-110 | 20# | 16,394' | 16,394' | Lead 1075sx 2018tail sx/100' inside inter |
| Tubing | 2 3/8' | New | P-110 | 4.7# | Approx. 7,155' | Approx. 7,155' | |
| Liners | | | | | | | |

JW 8/30/16

| TYPE | Size (in) | Wellbore Diameter (in) | Wall Thickness (in) | Burst Pressure (psi) | Max. Associated Surface Pressure (psi) | Cement Type | Cement Yield (cu. ft./k) |
|---|---|---|---|---|---|---|---|
| Conductor | 20" | 30" | 0.25 | 2120 | 0.020 | Class A | 1.19/50% Excess |
| Fresh Water | 13 3/8" | 17.5" | 0.380 | 2740 | 0.020 | Class A | 1.19/50% Excess |
| Coal | 9 5/8" | 12 1/4" | 0.395 | 3950 | 0.020 | Class A | 1.19/50% Excess |
| Intermediate | 7" | 8 3/4" | 0.317 | 4360 | 0.020 | Class A | 1.20/15% Excess |
| Production | 5 1/2" | 8 3/4" | 0.361 | 12360 | 0.020 | Class A | 1.20/15% Excess |
| Tubing | 2 3/8" | 4.778" | 0.190 | | | | |
| Liners | | | | | | | |

**PACKERS**

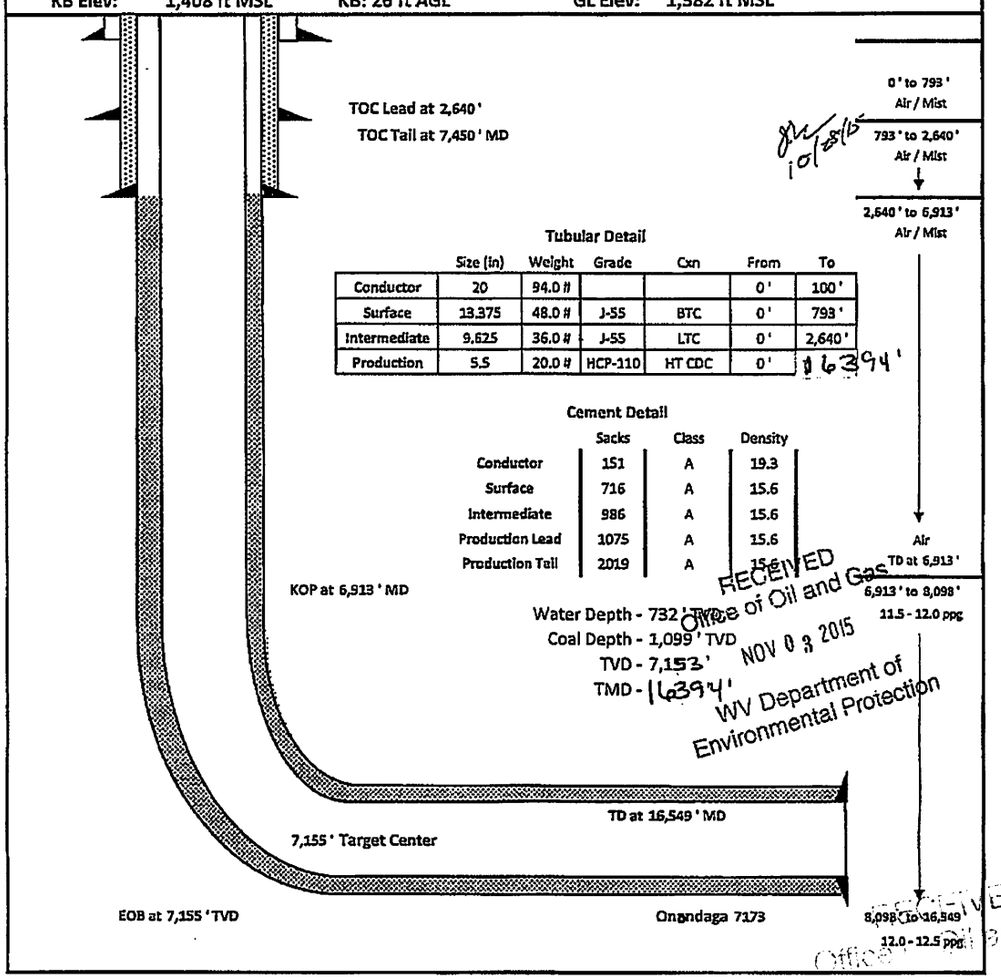
| | | | | |
|---|---|---|---|---|
| Kind: | 10K Arrowset AS1-X | | | |
| Sizes: | 5 1/2" | | | |
| Depths Set: | | | | |

51901823 MOD

| Southwestern Energy Company | Proposed Drilling Program |
|---|---|

| | | | |
|---|---|---|---|
| Well: | GLADYS BRIGGS MSH 205 | Re-entry Rig: | SDC 42 |
| Field: | VICTORY FIELD | Prospect: | VICTORY |
| County: | MARSHALL | State: | WV |
| SHL: | 39.7672 Latitude -80.6158 Longitude | | |
| BHL: | 39.7898 Latitude -80.6297 Longitude | | |
| KB Elev: | 1,408 ft MSL KB: 26 ft AGL | GL Elev: | 1,382 ft MSL |

SWN Southwestern Energy




10/28/15

**Tubular Detail**

| | Size (in) | Weight | Grade | Cxn | From | To |
|---|---|---|---|---|---|---|
| Conductor | 20 | 94.0 # | | | 0 ' | 100 ' |
| Surface | 13.375 | 48.0 # | J-55 | BTC | 0 ' | 793 ' |
| Intermediate | 9.625 | 36.0 # | J-55 | LTC | 0 ' | 2,640 ' |
| Production | 5.5 | 20.0 # | HCP-110 | HT CDC | 0 ' | 16394 ' |

**Cement Detail**

| | Sacks | Class | Density |
|---|---|---|---|
| Conductor | 151 | A | 19.3 |
| Surface | 716 | A | 15.6 |
| Intermediate | 986 | A | 15.6 |
| Production Lead | 1075 | A | 15.6 |
| Production Tail | 2019 | A | 15.6 |

RECEIVED
Office of Oil and Gas
NOV 03 2015
WV Department of
Environmental Protection

RECEIVED
Office of Oil and Gas
SEP 06 2016
WV Department of
Environmental Protection

51-01873

| API | Operator | Status | Latitude | Longitude | Vertical TD | Producing Formation |
|---|---|---|---|---|---|---|
| 051-00347 | Consolidation Coal Co. River Operations - Rd. #4 Box 425 Moundsville WV 26041 | Plugged (Abandoned on Plat) | *** | *** | 3046' | 4th Sand, Slate |
| 051-00368 | The Manufacturers Light & Heat Company - 800 Union Trust Bldg. Pittsburgh PA | Active Storage | *** | *** | 2320' | Big Injun Sand |
| 051-00484 | Columbia Gas Transmission Corp. - 1700 MacCorkle Ave SE Charleston WV 25325-1273 | Active Storage | *** | *** | 2302' | Big Injun Sand |
| 051-00141 | The Manufacturers Light & Heat Company - 800 Union Trust Bldg. Pittsburgh PA | Plugged (Abandoned on Plat) | *** | *** | 2940' | Gordon |
| 051-01004 | Consolidation Coal Co. River Operations - Rd. #4 Box 425 Moundsville WV 26041 | Plugged | *** | *** | Unknown | Unknown |
| 051-00969 | Consolidation Coal Co. River Operations - Rd. #4 Box 425 Moundsville WV 26041 | Plugged | *** | *** | Unknown | Unknown |
| 051-00968 | Consolidation Coal Co. River Operations - Rd. #4 Box 425 Moundsville WV 26041 | Plugged | *** | *** | Unknown | Unknown |
| 051-00110 | Carnegie Natural Gas Co. - 1014 Frick Bldg. Pittsburgh PA | Plugged | *** | *** | 3281' | Slate |

4705101873

WW-6A1
(5/13)

Operator's Well No. Gladys Briggs MSH 205H

**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 "Exhibit" A

**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: SWN Production Company, LLC
By: Brandi Williams
Its: Staff Landman



RECEIVED
Office of Oil and Gas
AUG 22 2016
WV Department of
Environmental Protection

**Exhibit A**

| # | TMP | SURFACE OWNER | DEEDED ACREAGE | LEASE # | LESSOR | LESSEE | ROYALTY | BK/PG |
|---|---|---|---|---|---|---|---|---|
| 1 | 07-16-02 | James Rodney Briggs | 121.4290 | 1-254788-000 | David Bonar, single; Harrison J. Briggs and Gladys R. Briggs, his wife | The Manufacturers Light and Heat Company | 12.50% | 309/354 |
| | | Roger Jacob Briggs | | | The Manufacturers Light and Heat Company | Columbia Gas Transmision Corporation | | 422/204 |
| | | John Dean Briggs | | | Columbia Gas Transmision Corporation | Columbia Natural Resources, LLC | | 642/281 |
| | | | | | Columbia Natural Resources, LLC | Chesapeake Appalachia, LLC | | 650/63 |
| | | | | | Columbia Gas Transmision Corporation | Chesapeake Appalachia, LLC | | 662/322 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |
| 2 | 07-16-29.4 | Preston Yeater and Heather L. Yeater (h/w, JT) | 17.9100 | 1-254725-000 | James M. Rine and Mary B. Rine, his wife, and Frank Hopkins and Austia M. Hopkins, his wife | E.C. Beardsley | 12.50% | 137/429 |
| | | | | | E.C. Beardsley | The Wheeling Natural Gas Company | | 150/49 |
| | | | | | The Wheeling Natural Gas Company | The Manufacturers Light and Heat Company | | 148/389 |
| | | | | | The Manufacturers Light and Heat Company | Union Gasoline & Oil Corporation | | 197/120 |
| | | | | | Union Gasoline & Oil Corporation | The Preston Oil Company | | 2/136 |
| | | | | | The Preston Oil Company | The Manufacturers Light and Heat Company | | 2/225 |
| | | | | | The Manufacturers Light and Heat Company | Columbia Gas Transmision Corporation | | 422/204 |
| | | | | | Columbia Gas Transmision Corporation | Columbia Natural Resources, LLC | | 642/281 |
| | | | | | Columbia Natural Resources, LLC | Chesapeake Appalachia, LLC | | 650/63 |
| | | | | | Columbia Gas Transmision Corporation | Chesapeake Appalachia, LLC | | 662/322 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 34/582 |
| 3 | 07-16-29.2 | Preston A. Yeater and Heather L. Yeater (h/w, JT) | 4.9160 | 1-254725-000 | James M. Rine and Mary B. Rine, his wife, and Frank Hopkins and Austia M. Hopkins, his wife | E.C. Beardsley | 12.50% | 137/429 |
| | | | | | E.C. Beardsley | The Wheeling Natural Gas Company | | 150/49 |
| | | | | | The Wheeling Natural Gas Company | The Manufacturers Light and Heat Company | | 148/389 |
| | | | | | The Manufacturers Light and Heat Company | Union Gasoline & Oil Corporation | | 197/120 |
| | | | | | Union Gasoline & Oil Corporation | The Preston Oil Company | | 2/136 |
| | | | | | The Preston Oil Company | The Manufacturers Light and Heat Company | | 2/225 |
| | | | | | The Manufacturers Light and Heat Company | Columbia Gas Transmision Corporation | | 422/204 |
| | | | | | Columbia Gas Transmision Corporation | Columbia Natural Resources, LLC | | 642/281 |
| | | | | | Columbia Natural Resources, LLC | Chesapeake Appalachia, LLC | | 650/63 |
| | | | | | Columbia Gas Transmision Corporation | Chesapeake Appalachia, LLC | | 662/322 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 34/582 |

RECEIVED
Office of Oil and Gas
AUG 22 2016
WV Department of
Environmental Protection

4705101873

**Exhibit A**

| # | TMP | SURFACE OWNER | DEEDED ACREAGE | LEASE # | LESSOR | LESSEE | ROYALTY | BK/PG |
|---|---|---|---|---|---|---|---|---|
| 4 | 07-10-24 | Vincent E. Lemasters | 44.0750 | 1-236956-013 | Pearl Lough, f/k/a Pearl Williams, a widow | Chesapeake Appalachia, LLC | 12.50% | 692/397 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |
| | | | | 1-236956-015 | A. Jane Davis, a married woman dealing in her sole and separate property | Chesapeake Appalachia, LLC | 12.50% | 693/558 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |
| | | | | 1-236956-022 | Ronald Young, a single man | Chesapeake Appalachia, LLC | 17.00% | 747/528 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |
| | | | | 1-236956-021 | O.W. Young, a/k/a Orville W. Young, a single man | Chesapeake Appalachia, LLC | 17.00% | 732/406 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |
| | | | | 1-236956-007 | Guy Buzzard, a single man | Chesapeake Appalachia, LLC | 12.50% | 668/414 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |
| | | | | 1-236956-002 | D. Vane Starkey, a widower | Chesapeake Appalachia, LLC | 12.50% | 659/62 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |
| | | | | 1-236956-004 | Howard E. Williams, a married man dealing in his sole and separate property | Chesapeake Appalachia, LLC | 12.50% | 659/200 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |
| | | | | 1-236956-001 | Ralph E. Williams, a married man dealing in his sole and separate property | Chesapeake Appalachia, LLC | 12.50% | 658/484 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |
| | | | | 1-236956-014 | Harry E. Johnson, Sr., a widower | Chesapeake Appalachia, LLC | 12.50% | 693/562 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |
| | | | | 1-236956-006 | James L. and Elsie J. Mercer, his wife | Chesapeake Appalachia, LLC | 12.50% | 659/382 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |
| | | | | 1-236956-005 | Alma O. Pierce, a widow | Chesapeake Appalachia, LLC | 12.50% | 659/206 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |
| | | | | 1-236956-012 | Elnor M. Horner, a/k/a Elnor Marie Horner, a widow | Chesapeake Appalachia, LLC | 12.50% | 690/260 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |
| | | | | 1-236956-016 | Sandra K. Dodd, a/k/a Sandy K. Dodd, a single woman | Chesapeake Appalachia, LLC | 12.50% | 698/363 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |
| | | | | 1-236956-019 | Donald L. Withers, a married man dealing in his sole and separate property | Chesapeake Appalachia, LLC | 12.50% | 695/203 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |

RECEIVED
Office of Oil and Gas
AUG 22 2016
WV Department of
Environmental Protection

4705101873

**Exhibit A**

| # | TMP | SURFACE OWNER | DEEDED ACREAGE | LEASE # | LESSOR | LESSEE | ROYALTY | BK/PG |
|---|---|---|---|---|---|---|---|---|
| | | | | 1-236956-017 | William G. Withers, III, a married man dealing in his sole and separate property | Chesapeake Appalachia, LLC | 12.50% | 698/366 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |
| | | | | 1-236956-018 | Karon Sue Vallee, a/k/a Karen Sue Vallee, a widow | Chesapeake Appalachia, LLC | 12.50% | 695/195 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |
| | | | | 1-236956-003 | Delmar W. Williams and Mary Lou Williams, his wife | Chesapeake Appalachia, LLC | 12.50% | 659/197 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |
| | | | | 1-236956-008 | Nile L. Williams, a married man dealing in his sole and separate property | Chesapeake Appalachia, LLC | 12.50% | 666/172 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |
| | | | | 1-236956-009 | Larry C. Williams, a married man dealing in his sole and separate property | Chesapeake Appalachia, LLC | 12.50% | 666/168 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |
| | | | | 1-236956-020 | Chestnut Holdings, Inc., a Florida corporation | Chesapeake Appalachia, LLC | 17.00% | 725/295 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |
| 5 | 07-10-09 | James M. Clark | 15.0000 | 1-254874-000 | Olive Prendergast, widow | The Manufacturers Light and Heat Company | 14.00% | 360/341 |
| | | | | | The Manufacturers Light and Heat Company | Columbia Gas Transmision Corporation | | 422/204 |
| | | | | | Columbia Gas Transmision Corporation | Columbia Natural Resources, LLC | | 642/281 |
| | | | | | Columbia Natural Resources, LLC | Chesapeake Appalachia, LLC | | 650/63 |
| | | | | | Columbia Gas Transmision Corporation | Chesapeake Appalachia, LLC | | 662/322 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |
| 6 | 07-10-11 | Marilyn V. Clark | 25.0000 | 1-254874-000 | Olive Prendergast, widow | The Manufacturers Light and Heat Company | 14.00% | 360/341 |
| | | | | | The Manufacturers Light and Heat Company | Columbia Gas Transmision Corporation | | 422/204 |
| | | | | | Columbia Gas Transmision Corporation | Columbia Natural Resources, LLC | | 642/281 |
| | | | | | Columbia Natural Resources, LLC | Chesapeake Appalachia, LLC | | 650/63 |
| | | | | | Columbia Gas Transmision Corporation | Chesapeake Appalachia, LLC | | 662/322 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |
| 7 | 07-10-12 | Charles R. Clark and Marilyn V. Whipkey (JT) | 35.3000 | 1-254833-000 | Lovina Clark, widow; Dora Reynolds, widow; Reverdy Reynolds and Golda F. Reynolds, his wife | The Manufacturers Light and Heat Company | 12.50% | 353/232 |
| | | | | | The Manufacturers Light and Heat Company | Columbia Gas Transmision Corporation | | 422/204 |
| | | | | | Columbia Gas Transmision Corporation | Columbia Natural Resources, LLC | | 642/281 |
| | | | | | Columbia Natural Resources, LLC | Chesapeake Appalachia, LLC | | 650/63 |
| | | | | | Columbia Gas Transmision Corporation | Chesapeake Appalachia, LLC | | 662/322 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |

RECEIVED
Office of Oil and Gas
AUG 22 2016
WV Department of
Environmental Protection

**Exhibit A**

| # | TMP | SURFACE OWNER | DEEDED ACREAGE | LEASE # | LESSOR | LESSEE | ROYALTY | BK/PG |
|---|---|---|---|---|---|---|---|---|
| | | | | 1-254801-000 | Sarah Jane Kingree and Ben Kingree III, her husband (an undivided 1/2 interest) Alexander Foster Reynolds and Edith Reynolds, his wife, and Alexander Foster Reynolds, as committee for Arthur Reynolds, an incompetent person (an undivided 1/2 interest) and Gladys Reynolds, wife of Arthur Reynolds | The Manufacturers Light and Heat Company | 12.50% | 361/300 |
| | | | | | The Manufacturers Light and Heat Company | Columbia Gas Transmision Corporation | | 422/204 |
| | | | | | Columbia Gas Transmision Corporation | Columbia Natural Resources, LLC | | 642/281 |
| | | | | | Columbia Natural Resources, LLC | Chesapeake Appalachia, LLC | | 650/63 |
| | | | | | Columbia Gas Transmision Corporation | Chesapeake Appalachia, LLC | | 662/322 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |
| 8 | 07-10-05 | Marilyn V. Clark | 34.0217 | 1-254800-000 | Sarah Jane Kingree and Ben Kingree III, her husband, an undivided 1/2 interest, Alexander Foster Reynolds and Edith Reynolds, his wife, and Alexander Foster Reynolds, as committee for Arthur Reynolds, an incompetent person (an undivided 1/2 interest) and Gladys Reynolds, wife of Arthur Reynolds | The Manufacturers Light and Heat Company | 12.50% | 361/295 |
| | | | | | The Manufacturers Light and Heat Company | Columbia Gas Transmision Corporation | | 422/204 |
| | | | | | Columbia Gas Transmision Corporation | Columbia Natural Resources, LLC | | 642/281 |
| | | | | | Columbia Natural Resources, LLC | Chesapeake Appalachia, LLC | | 650/63 |
| | | | | | Columbia Gas Transmision Corporation | Chesapeake Appalachia, LLC | | 662/322 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |
| 9 | 07-10-04.1 | Marilyn V. Clark | 1.1160 | 1-254801-000 | Sarah Jane Kingree and Ben Kingree III, her husband (an undivided 1/2 interest) Alexander Foster Reynolds and Edith Reynolds, his wife, and Alexander Foster Reynolds, as committee for Arthur Reynolds, an incompetent person (an undivided 1/2 interest) and Gladys Reynolds, wife of Arthur Reynolds | The Manufacturers Light and Heat Company | 12.50% | 361/300 |
| | | | | | The Manufacturers Light and Heat Company | Columbia Gas Transmision Corporation | | 422/204 |
| | | | | | Columbia Gas Transmision Corporation | Columbia Natural Resources, LLC | | 642/281 |
| | | | | | Columbia Natural Resources, LLC | Chesapeake Appalachia, LLC | | 650/63 |
| | | | | | Columbia Gas Transmision Corporation | Chesapeake Appalachia, LLC | | 662/322 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |

RECEIVED
Office of Oil and Gas
AUG 22 2016
WV Department of
Environmental Protection

4705101873

Exhibit A

| # | TMP | SURFACE OWNER | DEEDED ACREAGE | LEASE # | LESSOR | LESSEE | ROYALTY | BK/PG |
|---|---|---|---|---|---|---|---|---|
| 10 | 07-10-04 | Charles R. Clark | 46.7223 | 1-254801-000 | Sarah Jane Kingree and Ben Kingree III, her husband (an undivided 1/2 interest) Alexander Foster Reynolds and Edith Reynolds, his wife, and Alexander Foster Reynolds, as committee for Arthur Reynolds, an incompetent person (an undivided 1/2 interest) and Gladys Reynolds, wife of Arthur Reynolds | The Manufacturers Light and Heat Company | 12.50% | 361/300 |
| | | | | | The Manufacturers Light and Heat Company | Columbia Gas Transmision Corporation | | 422/204 |
| | | | | | Columbia Gas Transmision Corporation | Columbia Natural Resources, LLC | | 642/281 |
| | | | | | Columbia Natural Resources, LLC | Chesapeake Appalachia, LLC | | 650/63 |
| | | | | | Columbia Gas Transmision Corporation | Chesapeake Appalachia, LLC | | 662/322 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |
| 11 | 07-10-01 | Charles R. Clark | 48.7800 | 1-254920-000 | Hilda Pell Sinco and Michael Sinco, her husband, Alexander Foster Reynolds, Ada Reynolds, and Alexander Foster Reynolds as Committee for Arthur Reynolds, an incompetent person | The Manufacturers Light and Heat Company | 12.50% | 363/455 |
| | | | | | The Manufacturers Light and Heat Company | Columbia Gas Transmision Corporation | | 422/204 |
| | | | | | Columbia Gas Transmision Corporation | Columbia Natural Resources, LLC | | 642/281 |
| | | | | | Columbia Natural Resources, LLC | Chesapeake Appalachia, LLC | | 650/63 |
| | | | | | Columbia Gas Transmision Corporation | Chesapeake Appalachia, LLC | | 662/322 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |
| 12 | 07-07-04 | Wayne E. Graham Jr. and Gwendolyn L. Graham (h/w, JT) | 156.00 | 1-348294-001 | William K. Walton, a married man dealing in his sole and separate property | Chesapeake Appalachia, LLC | 18.00% | 758/120 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |
| | | | | 1-348294-002 | Marietta Stover, a widow, by her Attorney-In-Fact, Marvie S. Alexander | Chesapeake Appalachia, LLC | 18.00% | 761/25 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |
| | | | | 1-348294-003 | Margie M. Davenport, a widow | Chesapeake Appalachia, LLC | 18.00% | 779/546 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |
| | | | | Pending | William E. Graham Jr. aka Wayne E. Graham Jr. & Gwendolyn L. Graham, husband and wife | SWN Production Company, LLC | 16.00% | 894/623 |
| 13 | 07-08-09 | Ronald Wm. Kasserman | 130.1500 | 1-254901-000 | William Woodburn and Ann B. Woodburn, his wife | The Manufacturers Light and Heat Company | 14.00% | 381/385 |
| | | | | | The Manufacturers Light and Heat Company | Columbia Gas Transmision Corporation | | 422/204 |
| | | | | | Columbia Gas Transmision Corporation | Columbia Natural Resources, LLC | | 642/281 |
| | | | | | Columbia Natural Resources, LLC | Chesapeake Appalachia, LLC | | 650/63 |
| | | | | | Columbia Gas Transmision Corporation | Chesapeake Appalachia, LLC | | 662/322 |
| | | | | | Chesapeake Appalachia, LLC | SWN Production Company, LLC | | 33/110 |

RECEIVED
Office of Oil and Gas
AUG 2015
WV Department of
Environmental Protection

Latitude: 39°47'30" N

SURFACE HOLE 9,132'

BOTTOM HOLE 985'

Longitude: -80°37'30" W

BOTTOM HOLE 1,080'

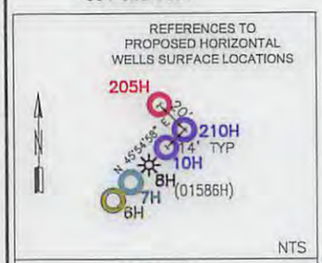
SURFACE HOLE 8,922'

Longitude: -80°35'00" W

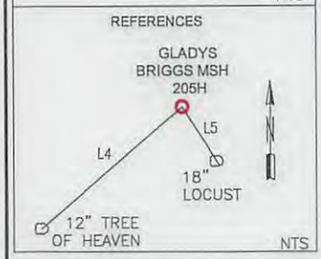

JACKSON SURVEYING INC.
P.O. Box 1460
677 W. Main St.
Clarksburg, WV 26302
304-623-5851


| SURFACE HOLE LOCATION (SHL): |
|---|
| UTM (NAD83, ZONE 17, METERS): NORTHING: 4,401,986.792 EASTING: 532,903.775 |
| "LANDING POINT" LOCATION (LPL): |
| UTM (NAD83, ZONE 17, METERS): NORTHING: 4,402,526.429 EASTING: 533,369.435 |
| BOTTOM HOLE LOCATION (BHL): |
| UTM (NAD83, ZONE 17, METERS): NORTHING: 4,404,371.528 EASTING: 531,808.252 |

REFERENCES TO PROPOSED HORIZONTAL WELLS SURFACE LOCATIONS




REFERENCES




| LINE | BEARING | DISTANCE | DESCRIPTION |
|---|---|---|---|
| L1 | S 61°44'17" W | 784.35' | SHL TO CNR FP |
| L2 | N 26°00'25" E | 1,661.53' | SHL TO ROOFBOLT |
| L3 | N 40°47'29" E | 2,338.49' | SHL TO LPL |
| L4 | S 48°56'52" W | 535.02' | SHL TO 12" TREE OF HEAVEN |
| L5 | S 32°27'01" E | 200.58' | SHL TO 18" LOCUST |
| L6 | N 64°49'05" W | 357.80' | SHL TO WATER RESERVOIR (SPRING) |

| TRACT | SURFACE OWNER (S) | TAX PARCEL | ACRES |
|---|---|---|---|
| 1 | JAMES RODNEY BRIGGS, ROGER JACOB BRIGGS, JOHN DEAN BRIGGS (S) | 7-18-02 | 121.43 |
| 2 | PRESTON YEATER & HEATHER L. YEATER (S) | 07-16-29.4 | 17.91 |
| 3 | PRESTON A. YEATER & HEATHER L. YEATER (S) | 07-16-29.2 | 4.92 |
| 4 | VINCENT E. LEMASTERS (S) | 07-10-24 | 44.08 |
| 5 | JAMES M. CLARK (S) | 07-10-09 | 15.00 |
| 6 | MARILYN V. CLARK (S) | 07-10-11 | 25.00 |
| 7 | CHARLES R. CLARK & MARILYN V. WHIPKEY (S) | 07-10-12 | 35.30 |
| 8 | MARILYN V. CLARK (S) | 07-10-05 | 34.02 |
| 9 | MARILYN V. CLARK (S) | 07-10-04.1 | 1.12 |
| 10 | CHARLES R. CLARK (S) | 07-10-04 | 46.72 |
| 11 | CHARLES R. CLARK (S) | 07-10-01 | 48.78 |
| 12 | WAYNE E. GRAHAM JR. & GWENDOLYN L. GRAHAM (S) | 07-07-04 | 156.00 |
| 13 | RONALD WM. KASSERMAN (S) | 07-08-09 | 130.15 |

NOTES ON SURVEY

1. COORDINATES SYSTEM IS UTM, NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.
2. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND FIELD LOCATIONS.
3. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
4. NO DWELLINGS AND BUILDINGS WITHIN 625 FEET OF PROPOSED OF CENTER OF PAD.
5. NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.
6. NO PERENNIAL STREAMS, LAKES, PONDS, RESERVOIRS OR WETLANDS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
7. NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.
8. ALL WELLS WITHIN 500' OF THE HORIZONAL LEG ARE SHOWN ON THIS PLAT BASED UPON INFORMATION TAKEN FROM FROM DEP MAPPING, WELL PLATS AND AERIAL PHOTOS.

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

P.S. 708 David L Jackson

DAVID JACKSON LICENSED No. 708 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

COMPANY: SWN Production Company, LLC — SWN Production Company™

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

WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25034

MINIMUM DEGREE OF ACCURACY: 1/200

PROVEN SOURCE OF ELEVATION: SURVEY GRADE GPS (NAVD 88, US FT)

OPERATOR'S WELL #: GLADYS BRIGGS MSH 205H

API WELL #: 47 (STATE) 051-01873 MOD (COUNTY) H6A (PERMIT)

WELL TYPE: OIL ☐ WASTE DISPOSAL ☐ PRODUCTION ☒ DEEP ☐ GAS ☒ LIQUID INJECTION ☐ STORAGE ☐ SHALLOW ☒

WATERSHED: FISH CREEK OF UPPER OHIO RIVER 2 ELEVATION: 1382.2'

DISTRICT: LIBERTY COUNTY: MARSHALL QUADRANGLE: CAMERON 7 1/2'

SURFACE OWNER: JAMES RODNEY BRIGGS, ROGER JACOB BRIGGS & JOHN DEAN BRIGGS ACREAGE: 129.43

OIL & GAS ROYALTY OWNER: DAVID BONAR; HARRISON J. BRIGGS & GLADYS R. BRIGGS ACREAGE: 129.43

DRILL ☒ DRILL DEEPER ☐ REDRILL ☐ FRACTURE OR STIMULATE ☒ PLUG OFF OLD FORMATION ☐ PERFORATE NEW FORMATION ☒

CONVERT ☐ PLUG & ABANDON ☐ CLEAN OUT & REPLUG ☐ OTHER CHANGE ☐ (SPECIFY)

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 7,153' TVD 16,394' TMD

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC DESIGNATED AGENT: DEE SOUTHALL

ADDRESS: P.O. BOX 1300 ADDRESS: P.O. BOX 1300

CITY: JANE LEW STATE: WV ZIP CODE: 26378 CITY: JANE LEW STATE: WV ZIP CODE: 26378

LEGEND:

- PROPOSED SURFACE HOLE / BOTTOM HOLE
- EXISTING / PRODUCING WELLHEAD
- ABANDONED WELL
- PLUGGED & ABANDONED WELL
- CUT CONDUCTOR
- LEASE BOUNDARY
- 500' DHP BUFFER
- MARCELLUS DHP
- ABANDONED PATH

| REVISIONS: | DATE: 10-30-2015 |
|---|---|
| ⚠ CORRECTED TICK MARK 12-15-2015 | |
| ⚠ SHIFT BOTTOM HOLE & LANDING POINT 01-21-2016 | DRAWN BY: N. MANO |
| ⚠ SHIFTED LANDING POINT 08-09-2016 | SCALE: 1" = 2000' |
| ⚠ CORRECTED OWNERSHIPS & DHP 08-17-2016 | DRAWING NO: |
| ⚠ ADDED H, I, & J | WELL LOCATION PLAT |

\\D7W3HRL1\1-04-16 DJ\SWN\GLADYS BRIGGS MSH\WELL PLATS\BRIGGS MSH 205H\GLADYS BRIGGS MSH 205H 08-18-16\GLADYS BRIGGS MSH 205H 08-

THURSDAY AUGUST 18 2016 02:30PM

PROPERTY NUMBER 2501161955

PAD ID 3001155501

51-01873H6A MOD

JACKSON SURVEYING INC.
P.O. Box 1460
677 W. Main St.
Clarksburg, WV 26302
304-623-5851

# ADJOINING OWNERS

| TRACT | ADJOINING SURFACE OWNER (S) | TAX PARCEL | ACRES |
|---|---|---|---|
| A | MASON DIXON FARMS LLC | 07-17-19 | 22.80 |
| B | JOHN D. BRIGGS & PATTY K. BRIGGS | 07-16-02.2 | 1.03 |
| C | VINCENT E. LEMASTERS | 07-16-01 | 4.00 |
| D | JACK BRIGGS | 07-16-02.1 | 1.02 |
| E | MCELROY COAL COMPANY | 07-10-08 | 50.77 |
| F | DONALD G. BUZZARD ET UX | 07-10-07 | 164.13 |
| G | ALVIN RICKEY ANDERSON ET AL | 07-10-06 | 63.19 |
| H | PAUL F. STERN | 07-10-03 | 1.00 |
| I | WINIFRED M. STERN | 07-10-02 | 1.40 |
| J | WINIFRED M. STERN | 07-10-06.1 | 0.28 |
| K | PAUL & SUSAN ASTON | 07-09-26 | 8.50 |
| L | ALVIN R. & JACKIE L. ANDERSON | 07-10-01.1 | 1.46 |
| M | CHARLES R. CLARK | 07-09-28.2 | 34.00 |
| N | EILEEN HINERMAN | 07-09-25 | 5.00 |
| O | GARY L. DOBBS | 07-09-24 | 18.00 |
| P | PAUL & SUSAN ASTON | 07-09-21 | 100.00 |
| Q | JOHN A. DOBBS ET UX | 07-09-23 | 60.25 |
| R | JOHN A. DOBBS ET UX | 07-08-08 | 51.97 |
| S | JOHN A. DOBBS ET UX | 07-08-04 | 65.65 |
| T | DANNY R. & FRANCES V. KERNS ESTS. | 07-08-02 | 94.00 |
| U | BLAINE E. STERN JR. | 07-08-12 | 33.00 |
| V | BLAINE E. STERN JR. | 07-08-11 | 60.62 |
| W | CONSOLIDATION COAL COMPANY | 07-07-03 | 12.00 |
| X | TERRY L. STRAYER | 07-07-05 | 30.98 |
| Y | WAYNE E. GRAHAM | 07-07-05.1 | 5.82 |
| Z | PAMELA J. HOWARD | 07-10-15 | 15.51 |
| AA | GARY RAY DOBBS ET AL | 07-10-18 | 131.97 |
| BB | JAMES M. CLARK | 07-10-10 | 14.68 |
| CC | HAROLD E. & ANITA RUSH | 07-10-23 | 41.13 |
| DD | HAROLD E. & ANITA RUSH | 07-10-23.1 | 1.33 |
| EE | WILLIAM A. & STEPHANIE F. YEATER | 07-16-29.3 | 41.50 |
| FF | THELMA YEATER | 07-16-29 | 40.41 |
| GG | GLADYS R. BRIGGS | 07-16-03 | 10.00 |
| HH | JACK J. BRIGGS | 07-16-05 | 37.88 |
| II | MASON DIXON FARMS LLC | 07-16-06 | 69.72 |

REVISIONS:
- ⚠ CORRECTED TICK MARK 12-15-2015
- ⚠ SHIFT BOTTOM HOLE & LANDING POINT 01-21-2016
- ⚠ SHIFTED LANDING POINT 08-09-2016
- ⚠ CORRECTED OWNERSHIPS & DHP 08-17-2016
- ⚠ ADDED H, I, & J

COMPANY: SWN Production Company, LLC — SWN Production Company™

OPERATOR'S WELL #: GLADYS BRIGGS MSH 205H

LOCATION: LIBERTY DISTRICT, MARSHALL COUNTY, WEST VIRGINIA

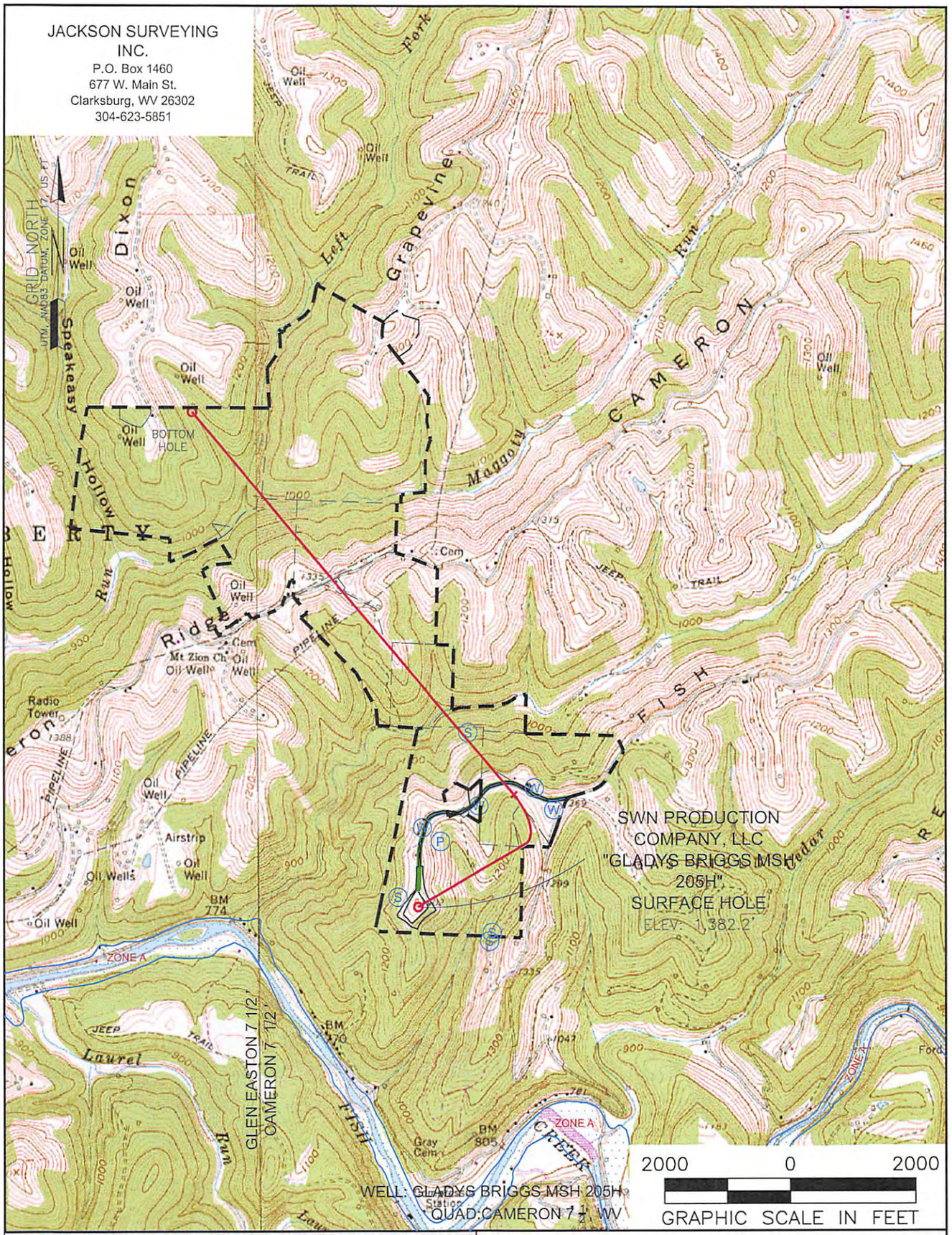
DATE: 10-30-2015
DRAWN BY: N. MANO
SCALE: N/A
DRAWING NO: ADJOINING OWNERS

\\D7W3HRL1\1-04-16 DJ\SWN\GLADYS BRIGGS MSH\WELL PLATS\BRIGGS MSH 205H\GLADYS BRIGGS MSH 205H 08-18-16\GLADYS BRIGGS MSH 205H 08-
THURSDAY AUGUST 18 2016 02:31PM

PROPERTY NUMBER 2501161955
PAD ID 3001155501

4705101873

JACKSON SURVEYING INC.
P.O. Box 1460
677 W. Main St.
Clarksburg, WV 26302
304-623-5851




| NAME AND DISTANCE TO THE NEAREST STREAM: | STREAM CROSSING COORDINATES (NAD 83): |
|---|---|
| FISH CREEK IS LOCATED ±0.49 MILES SW OF THE CENTER OF THE DRILL PAD. | NO NEW CROSSINGS. |

**WELL RESTRICTIONS:**

WELL PAD, LOD, & E & S CONTROL FEATURES TO PERENNIAL STREAM, LAKE, POND, RESERVOIR OR WETLAND: >100 FEET
WELL PAD, LOD, & E & S CONTROL FEATURES TO NATURALLY PRODUCING TROUT STREAM: >300 FEET
WELL PAD, LOD, & E & S CONTROL FEATURES TO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY: >1000 FEET
WELL SHL TO EXISTING WATER WELL OR DEVELOPED SPRING: >250 FEET
CENTER OF PAD TO OCCUPIED DWELLING STRUCTURE: >625 FEET
CENTER OF PAD TO AGRICULTURAL BUILDINGS LARGER THAN 2500 SQ FT: >625 FEET

**FEMA FLOOD INFORMATION:**

BY GRAPHIC PLOTTING ONLY FEMA FIRM INCORPORATED AREA OF MARSHALL COUNTY, WEST VIRGINIA; MAP NUMBER 54051C0200 E; EFFECTIVE DATE: SEPTEMBER 25, 2009.

COMPANY: SWN Production Company, LLC / SWN Production Company™

OPERATOR'S WELL #: GLADYS BRIGGS MSH 205H

LOCATION: LIBERTY DISTRICT, MARSHALL COUNTY, WEST VIRGINIA

**SURFACE HOLE LOCATION:**

GEOGRAPHIC (NAD83):
LATITUDE: 39.767173°
LONGITUDE: -80.615830°

**BOTTOM HOLE LOCATION:**

GEOGRAPHIC (NAD83):
LATITUDE: 39.788701°
LONGITUDE: -80.628505°

RECEIVED
Office of Oil and Gas
AUG 22 2016
WV Department of Environmental Protection

**LEGEND:**

- PROPOSED SURFACE HOLE / BOTTOM HOLE
- EXISTING / PRODUCING WELLHEAD
- ABANDONED WELL
- PLUGGED & ABANDONED WELL
- CUT CONDUCTOR
- (S) EXISTING SPRING
- (W) EXISTING WATER WELL
- ACCESS ROAD
- ACCESS ROAD TO PREV. SITE
- HIGHWAY/INTERSTATE
- COUNTY ROAD

| REVISIONS: | DATE: 10-30-2015 |
|---|---|
| ⚠ CORRECTED TICK MARK 12-15-2015 | |
| ⚠ SHIFT BOTTOM HOLE & LANDING POINT 01-21-2016 | DRAWN BY: N. MANO |
| ⚠ SHIFTED LANDING POINT 08-09-2016 | SCALE: 1" = 2000' |
| ⚠ CORRECTED OWNERSHIPS & DHP 08-17-2016 | DRAWING NO: |
| ⚠ ADDED H, I, & J | TOPOGRAPHIC MAP |

\\D7W3HRL1\1-04-16 DJ\SWN\GLADYS BRIGGS MSH\WELL PLATS\BRIGGS MSH 205H\GLADYS BRIGGS MSH 205H 08-18-16\GLADYS BRIGGS MSH 205H 08-
THURSDAY AUGUST 18 2016 02:30PM

PROPERTY NUMBER 2501161955
PAD ID 3001155501

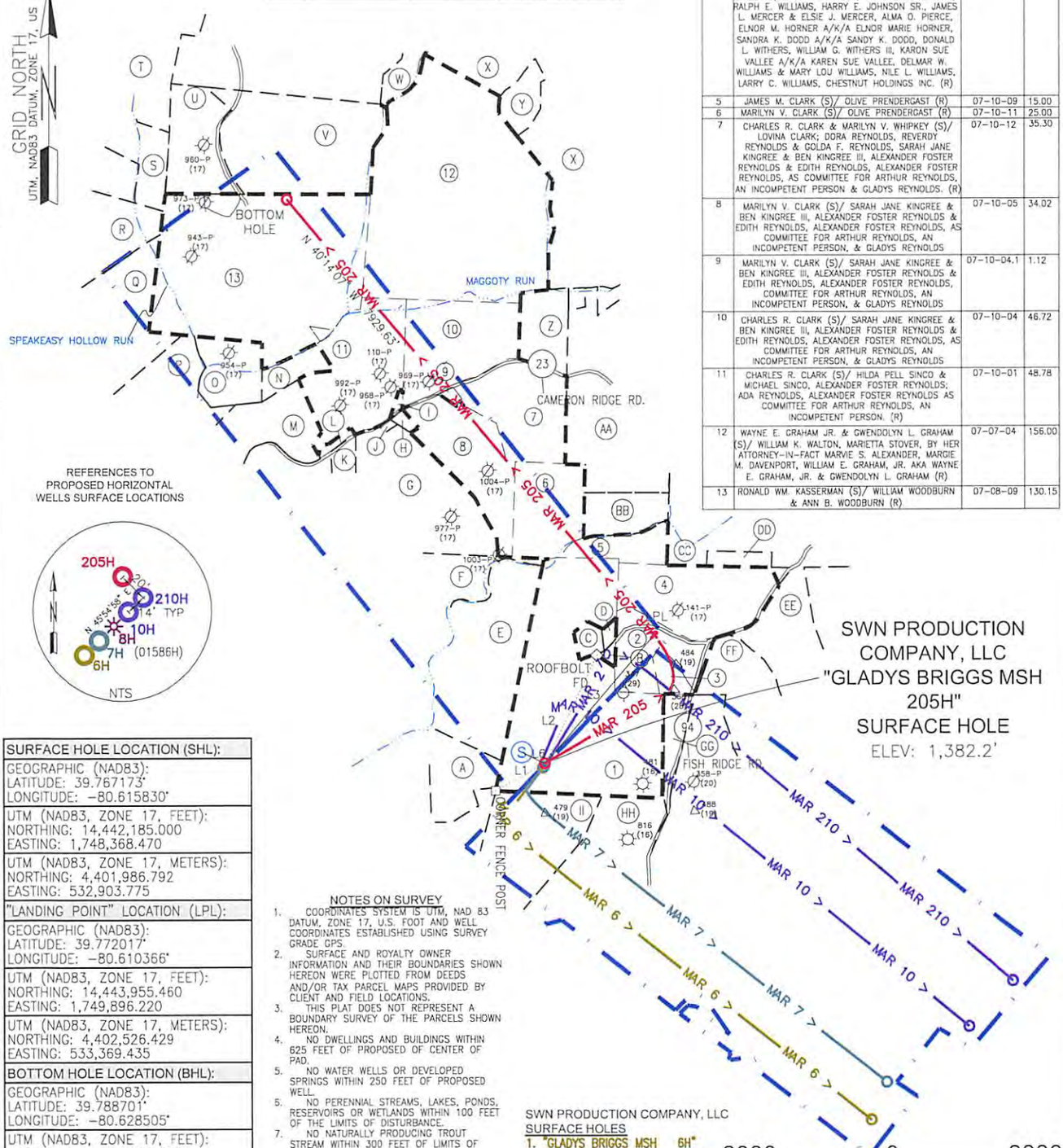
4705101873


JACKSON SURVEYING INC.
P.O. Box 1460
677 W. Main St.
Clarksburg, WV 26302
304-623-5851


| LINE | BEARING | DISTANCE | DESCRIPTION |
|---|---|---|---|
| L1 | S 61°44'17" W | 784.35' | SHL TO CNR FP |
| L2 | N 26°00'25" E | 1,661.53' | SHL TO ROOFBOLT |
| L3 | N 40°47'29" E | 2,338.49' | SHL TO LPL |
| L4 | S 48°56'52" W | 535.02' | SHL TO 12" TREE OF HEAVEN |
| L5 | S 32°27'01" E | 200.58' | SHL TO 18" LOCUST |
| L6 | N 64°49'05" W | 357.80' | SHL TO WATER RESERVOIR (SPRING) |

| TRACT | SURFACE OWNER (S) / ROYALTY OWNER (R) | TAX PARCEL | ACRES |
|---|---|---|---|
| 1 | JAMES RODNEY BRIGGS, ROGER JACOB BRIGGS, JOHN DEAN BRIGGS (S)/ DAVID BONAR, HARRISON J. BRIGGS & GLADYS R. BRIGGS (R) | 7-16-02 | 121.43 |
| 2 | PRESTON YEATER & HEATHER L. YEATER (S)/ JAMES M. RINE & MARY B. RINE, FRANK HOPKINS & AUSTIA M. HOPKINS (R) | 07-16-29.4 | 17.91 |
| 3 | PRESTON A. YEATER & HEATHER L. YEATER (S)/ JAMES M. RINE & MARY B. RINE, FRANK HOPKINS & AUSTIA M. HOPKINS(R) | 07-16-29.2 | 4.92 |
| 4 | VINCENT E. LEMASTERS (S)/ PEARL LOUGH F/K/A PEARL WILLIAMS, A. JANE DAVIS, RONALD YOUNG, O.W. YOUNG A/K/A ORVILLE W. YOUNG, GUY BUZZARD, D. VANE STARKEY, HOWARD E. WILLIAMS, RALPH E. WILLIAMS, HARRY E. JOHNSON SR., JAMES L. MERCER & ELSIE J. MERCER, ALMA D. PIERCE, ELNOR M. HORNER A/K/A ELNOR MARIE HORNER, SANDRA K. DODD A/K/A SANDY K. DODD, DONALD L. WITHERS, WILLIAM G. WITHERS III, KARON SUE VALLEE A/K/A KAREN SUE VALLEE, DELMAR W. WILLIAMS & MARY LOU WILLIAMS, NILE L. WILLIAMS, LARRY C. WILLIAMS, CHESTNUT HOLDINGS INC. (R) | 07-10-24 | 44.08 |
| 5 | JAMES M. CLARK (S)/ OLIVE PRENDERGAST (R) | 07-10-09 | 15.00 |
| 6 | MARILYN V. CLARK (S)/ OLIVE PRENDERGAST (R) | 07-10-11 | 25.00 |
| 7 | CHARLES R. CLARK & MARILYN V. WHIPKEY (S)/ LOVINA CLARK; DORA REYNOLDS, REVERDY REYNOLDS & GOLDA F. REYNOLDS, SARAH JANE KINGREE & BEN KINGREE III, ALEXANDER FOSTER REYNOLDS & EDITH REYNOLDS, ALEXANDER FOSTER REYNOLDS, AS COMMITTEE FOR ARTHUR REYNOLDS, AN INCOMPETENT PERSON & GLADYS REYNOLDS. (R) | 07-10-12 | 35.30 |
| 8 | MARILYN V. CLARK (S)/ SARAH JANE KINGREE & BEN KINGREE III, ALEXANDER FOSTER REYNOLDS & EDITH REYNOLDS, ALEXANDER FOSTER REYNOLDS, AS COMMITTEE FOR ARTHUR REYNOLDS, AN INCOMPETENT PERSON, & GLADYS REYNOLDS | 07-10-05 | 34.02 |
| 9 | MARILYN V. CLARK (S)/ SARAH JANE KINGREE & BEN KINGREE III, ALEXANDER FOSTER REYNOLDS & EDITH REYNOLDS, ALEXANDER FOSTER REYNOLDS, COMMITTEE FOR ARTHUR REYNOLDS, AN INCOMPETENT PERSON, & GLADYS REYNOLDS | 07-10-04.1 | 1.12 |
| 10 | CHARLES R. CLARK (S)/ SARAH JANE KINGREE & BEN KINGREE III, ALEXANDER FOSTER REYNOLDS & EDITH REYNOLDS, ALEXANDER FOSTER REYNOLDS, AS COMMITTEE FOR ARTHUR REYNOLDS, AN INCOMPETENT PERSON, & GLADYS REYNOLDS | 07-10-04 | 46.72 |
| 11 | CHARLES R. CLARK (S)/ HILDA PELL SINCO & MICHAEL SINCO, ALEXANDER FOSTER REYNOLDS; ADA REYNOLDS, ALEXANDER FOSTER REYNOLDS AS COMMITTEE FOR ARTHUR REYNOLDS, AN INCOMPETENT PERSON. (R) | 07-10-01 | 48.78 |
| 12 | WAYNE E. GRAHAM JR. & GWENDOLYN L. GRAHAM (S)/ WILLIAM K. WALTON, MARIETTA STOVER, BY HER ATTORNEY-IN-FACT MARVIE S. ALEXANDER, MARGIE M. DAVENPORT, WILLIAM E. GRAHAM, JR. AKA WAYNE E. GRAHAM, JR. & GWENDOLYN L. GRAHAM (R) | 07-07-04 | 156.00 |
| 13 | RONALD WM. KASSERMAN (S)/ WILLIAM WOODBURN & ANN B. WOODBURN (R) | 07-08-09 | 130.15 |

GRID NORTH
UTM, NAD83 DATUM, ZONE 17, US FT




REFERENCES TO PROPOSED HORIZONTAL WELLS SURFACE LOCATIONS




SWN PRODUCTION COMPANY, LLC
"GLADYS BRIGGS MSH 205H"
SURFACE HOLE
ELEV: 1,382.2'

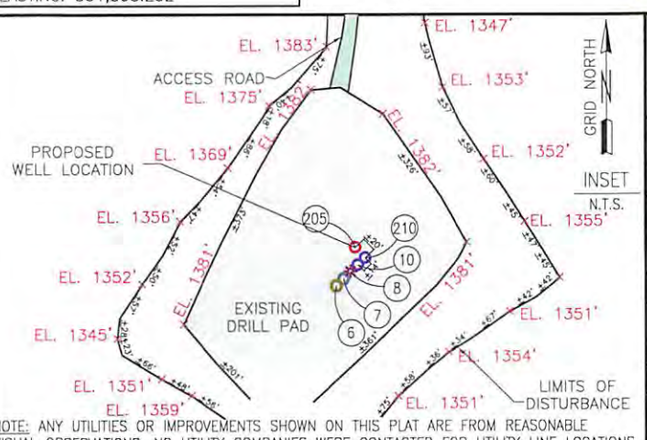
| SURFACE HOLE LOCATION (SHL): |
|---|
| GEOGRAPHIC (NAD83):<br>LATITUDE: 39.767173°<br>LONGITUDE: -80.615830° |
| UTM (NAD83, ZONE 17, FEET):<br>NORTHING: 14,442,185.000<br>EASTING: 1,748,368.470 |
| UTM (NAD83, ZONE 17, METERS):<br>NORTHING: 4,401,986.792<br>EASTING: 532,903.775 |
| "LANDING POINT" LOCATION (LPL): |
| GEOGRAPHIC (NAD83):<br>LATITUDE: 39.772017°<br>LONGITUDE: -80.610366° |
| UTM (NAD83, ZONE 17, FEET):<br>NORTHING: 14,443,955.460<br>EASTING: 1,749,896.220 |
| UTM (NAD83, ZONE 17, METERS):<br>NORTHING: 4,402,526.429<br>EASTING: 533,369.435 |
| BOTTOM HOLE LOCATION (BHL): |
| GEOGRAPHIC (NAD83):<br>LATITUDE: 39.788701°<br>LONGITUDE: -80.628505° |
| UTM (NAD83, ZONE 17, FEET):<br>NORTHING: 14,450,008.920<br>EASTING: 1,744,774.240 |
| UTM (NAD83, ZONE 17, METERS):<br>NORTHING: 4,404,371.528<br>EASTING: 531,808.252 |

NOTES ON SURVEY

1. COORDINATES SYSTEM IS UTM, NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.
2. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND FIELD LOCATIONS.
3. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
4. NO DWELLINGS AND BUILDINGS WITHIN 625 FEET OF PROPOSED OF CENTER OF PAD.
5. NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.
5. NO PERENNIAL STREAMS, LAKES, PONDS, RESERVOIRS OR WETLANDS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
7. NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.
8. ALL WELLS WITHIN 500' OF THE HORIZONAL LEG ARE SHOWN ON THIS PLAT BASED UPON INFORMATION TAKEN FROM FROM DEP MAPPING, WELL PLATS AND AERIAL PHOTOS.

SWN PRODUCTION COMPANY, LLC
SURFACE HOLES
1. "GLADYS BRIGGS MSH 6H"
2. "GLADYS BRIGGS MSH 8H"
3. "GLADYS BRIGGS UD-B MSH 7H"
4. "GLADYS BRIGGS MSH 10H"
5. "GLADYS BRIGGS MSH 205H"
6. "GLADYS BRIGGS MSH 210H"

2000 0 2000
GRAPHIC SCALE IN FEET




NOTE: ANY UTILITIES OR IMPROVEMENTS SHOWN ON THIS PLAT ARE FROM REASONABLE VISUAL OBSERVATIONS. NO UTILITY COMPANIES WERE CONTACTED FOR UTILITY LINE LOCATIONS.

COMPANY: SWN Production Company, LLC
SWN Production Company™

OPERATOR'S WELL #: GLADYS BRIGGS MSH 205H

LOCATION: LIBERTY DISTRICT, MARSHALL COUNTY, WEST VIRGINIA

SURFACE HOLE LOCATION:
GEOGRAPHIC (NAD83):
LATITUDE: 39.767173°
LONGITUDE: -80.615830°

BOTTOM HOLE LOCATION:
GEOGRAPHIC (NAD83):
LATITUDE: 39.788701°
LONGITUDE: -80.628505°

RECEIVED
Office of Oil and Gas
AUG 22 2016
WV Department of Environmental Protection

LEGEND:
- PROPOSED SURFACE HOLE / BOTTOM HOLE
- EXISTING / PRODUCING WELLHEAD
- ABANDONED WELL
- PLUGGED & ABANDONED WELL
- CUT CONDUCTOR
- DRILLING UNIT
- LEASE BOUNDARY
- 500' DHP BUFFER
- -MAR 205>- MARCELLUS DHP
- ABANDONED PATH

| REVISIONS: | DATE: 10-30-2015 |
|---|---|
| ⚠ CORRECTED TICK MARK 12-15-2015 | |
| ⚠ SHIFT BOTTOM HOLE & LANDING POINT 01-21-2016 | DRAWN BY: N. MANO |
| ⚠ SHIFTED LANDING POINT 08-09-2016 | SCALE: 1" = 2000' |
| ⚠ CORRECTED OWNERSHIPS & DHP 08-17-2016 | DRAWING NO: |
| ⚠ ADDED H, I, & J | INTERNAL WELL PLAT |

\\D7W3HRL1\1-04-16 DJ\SWN\GLADYS BRIGGS MSH\WELL PLATS\BRIGGS MSH 205H\GLADYS BRIGGS MSH 205H 08-18-16\GLADYS BRIGGS MSH 205H 08-
THURSDAY AUGUST 18 2016 02:31PM

PROPERTY NUMBER 2501161955
PAD ID 3001155501

## Adkins, Laura L

**From:** Adkins, Laura L
**Sent:** Thursday, September 15, 2016 9:54 AM
**To:** 'Dee Southall'; 'Brittany Woody'
**Subject:** Mod for Gladys Briggs MSH 205H 51-01873

Ladies,

I will need an area of review for the revised lateral.

Thank you,

Laura

Btw, me work cell no longer works so if you need me, text me on my personal cell at 304-546-8682.

Laura L. Adkins
Environmental Resource Specialist III
Permit Review
WVDEP Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
304-926-0499 ext. 1495

THE ITEMS REQUESTED IN THIS EMAIL WILL NEED TO BE RECEIVED BY THE OFFICE OF OIL AND GAS WITHIN **20 DAYS** TO AVOID THE PERMIT APPLICATION BEING RETURNED. IF AN OPERATOR WISHES TO RESUBMIT AN APPLICATION THAT HAS BEEN RETURNED, THE OPERATOR IS REQUIRED TO COMPLETE AND SUBMIT NEW FORMS, MYLAR PLAT AND ASSOCIATED FEES.

51-01873

SWN
Southwestern Energy®
PO Box 1300
Jane Lew, WV 26378
PHONE: (832) 796-1610

September 1, 2016

Ms. Laura Adkins
Office of Oil & Gas
601 57th Street
Charleston, WV 25304

**RE:** Proposed New Well Gladys Briggs MSH 205H API# 47-051-01873

Dear Ms. Adkins:

Enclosed please find a new WW-6B, and wbd for the above captioned well. We would like to modify the TVD and TMD. This well are situated on the Brigg's property in Marshall County, West Virginia.

If you have any questions or desire additional information, please me at 304-884-1614.

Thank you.

Sincerely,

Dee Southall
Regulatory Supervisor
Southwestern Energy Production Company, LLC
PO Box 1300
Jane Lew, WV 26378

RECEIVED
Office of Oil and Gas
SEP 06 2016
WV Department of
Environmental Protection

$\frac{R^2}{A} \rightarrow V+^{®}$

The Right People doing the Right Things, wisely Investing the cash flow from our underlying Assets, will create Value+