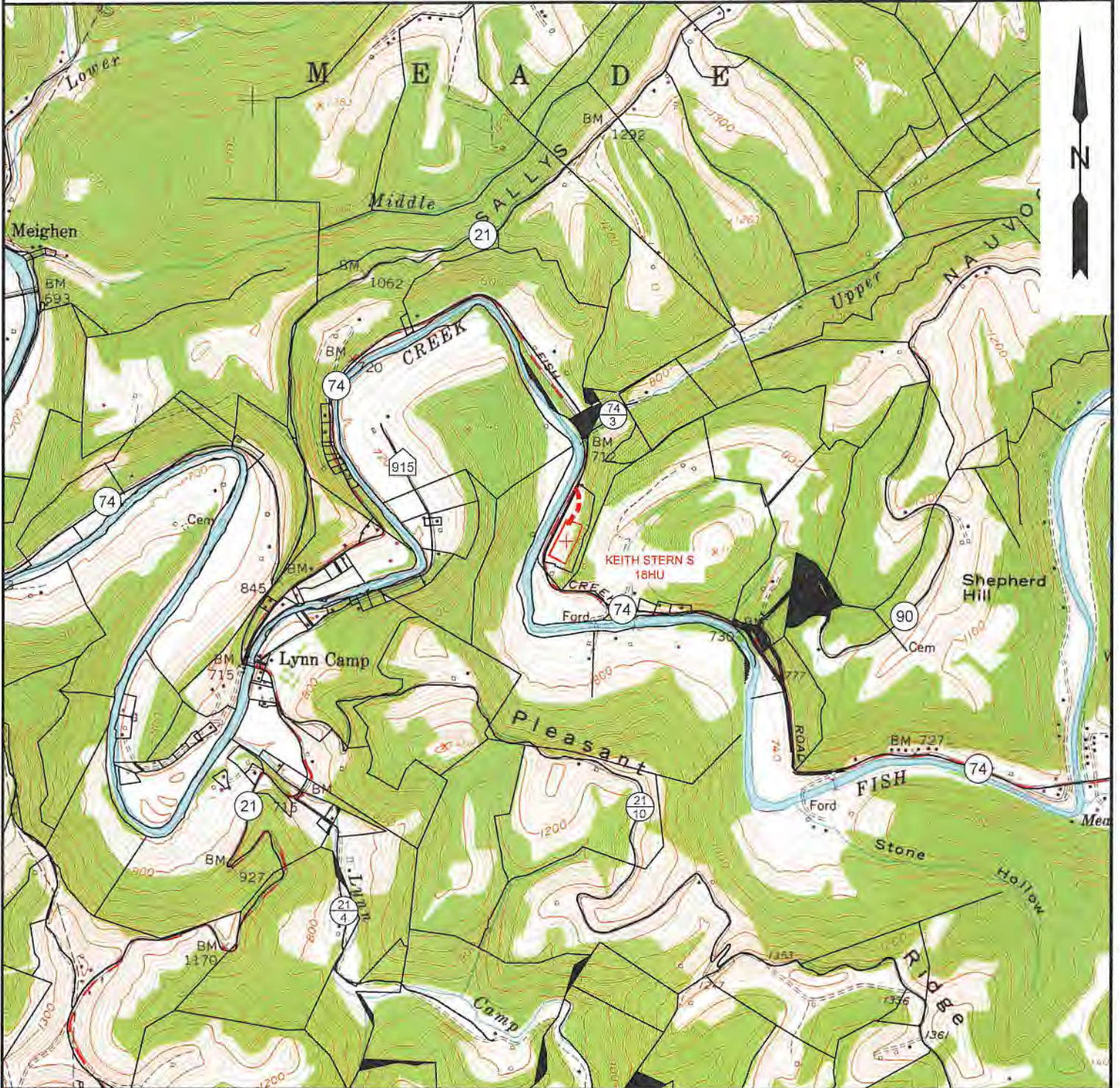


# PROPOSED KEITH STERN S - 18HU



NOTE: CLOSEST WATER PURVEYOR  
GRANDVIEW - DOOLIN PUBLIC SERVICE DISTRICT  
PROCTOR, WV

LAT: 39.7137712  
LON: -80.8258327  
LOCATED: S 60°11'49" W AT 43,719.31' FROM THE CENTER OF KEITH STERN S WELL PAD LOCATION.

RECEIVED  
Office of Oil and Gas  
JUN 10 2019

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|                  |          |                         |            |
|------------------|----------|-------------------------|------------|
| TOPO SECTION:    |          | OPERATOR:               |            |
| GLEN EASTON 7.5' |          | PREPARED FOR:           |            |
| COUNTY           | DISTRICT | TUG HILL OPERATING, LLC |            |
| MARSHALL         | MEADE    | 380 SOUTHPOINTE BLVD    |            |
| DRAWN BY         |          | DATE                    | SCALE      |
| K.G.M.           |          | 05/01/2019              | 1" = 2000' |

WV Department of  
Environmental Protection  
**TUG HILL**  
OPERATING



**KEITH STERN S LEASE  
UTICA UNIT - 452.76 AC±  
WELL 18HU  
TUG HILL OPERATING**

7,167' T.H. 3,079' B.H.

T.H. LATITUDE 39°47'30"  
B.H. LATITUDE 39°47'30"

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)  
 NAD'83 S.P.C.(FT) N. 466,554.34 E. 1,633,433.14  
 NAD'83 GEO. LAT-(N) 39.774826 LONG-(W) 80.692166  
 NAD'83 UTM (M) N. 4,402,810.91 E. 526,362.72  
**LANDING POINT**  
 NAD'83 S.P.C.(FT) N. 485,285.3 E. 1,634,161.1  
 NAD'83 GEO. LAT-(N) 39.771369 LONG-(W) 80.689517  
 NAD'83 UTM (M) N. 4,402,428.0 E. 526,591.0  
**BOTTOM HOLE**  
 NAD'83 S.P.C.(FT) N. 459,205.4 E. 1,637,426.5  
 NAD'83 GEO. LAT-(N) 39.754797 LONG-(W) 80.677617  
 NAD'83 UTM (M) N. 4,400,592.3 E. 527,616.7

T.H. LONGITUDE 80°40'00"  
B.H. LONGITUDE 80°40'00"  
6.135' T.H.

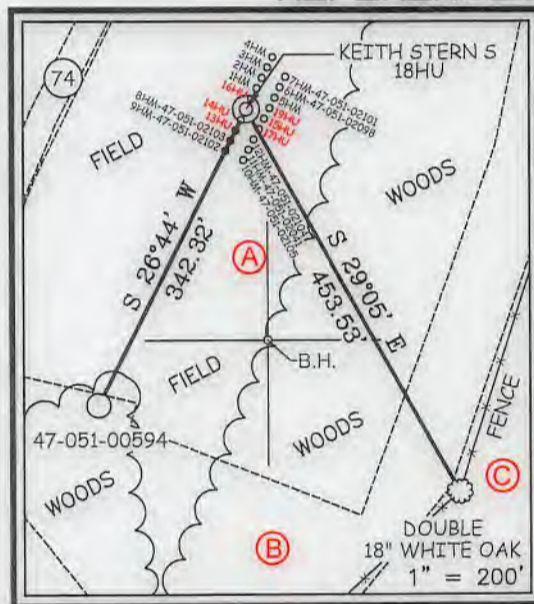
| MAP/PARCEL | ADJOINING SURFACE OWNER LIST              | ACRES            |
|------------|---|------------------|
| 9-10-12    | RAY A. WHETZAL, JR., ET AL                | 36.51            |
| 9-11-3     | RAY A. WHETZAL, JR., ET AL                | 33.33            |
| 9-13-11.1  | SAMUEL & HEATHER SUHODOLSKI               | 0.49             |
| 9-13-14    | MARGARET K. FOX - LIFE                    | 3.00             |
| 9-14-1.2   | KENNETH N. & TERESA A. SMERTNECK          | 1.02             |
| 9-14-3     | MICHAEL L. ALVAREZ                        | NORTH P/O 3 PCLS |
| 9-14-4     | MICHAEL L. ALVAREZ                        | 3 PCLS & 1/8 AC. |
| 9-14-5     | MICHAEL L. ALVAREZ                        | 200 X 60 PCL     |
| 9-14-6     | MICHAEL L. ALVAREZ                        | 120 X 200 PCL    |
| 9-14-7     | JOHN T. ERAZMUS, III                      | 0.25             |
| 9-14-8     | JOHNNY C. HOLCOMB & JOHNNY C. HOLCOMB, II | 2/5 AC.          |
| 9-14-9     | JOHN E. DUFFY, ET UX                      | 2/5 AC.          |
| 9-14-10    | ROBERT I. DUFFY - LIFE                    | 25/100 AC.       |
| 9-14-11.1  | PATRICK J. SCHELLHASE EST - TRUST         | 7.617            |
| 9-14-11.2  | LOYE A. BLAKE                             | 4.00             |
| 9-14-20.2  | WILLIAM K. STERN, ET UX                   | 1.525            |
| 9-14-26    | PATRICK J. SCHELLHASE EST - TRUST         | 12.588           |
| 9-14-27    | PATRICK J. SCHELLHASE EST - TRUST         | 3.004            |
| 9-14-28    | CHARLES R. SCHELLHASE, ET UX              | 3.029            |
| 9-14-45    | GEORGE R. TAYLOR, ET UX                   | 10.98            |
| 9-14-46.1  | MARHA JANE FAZZARO                        | 1.512            |
| 9-15-40.1  | ADAM WALTER BARTOSZEWICZ                  | 13.50            |
| 9-15-43    | PHILLIP L. MCCABE                         | 11.716           |
| 9-17-4.1   | DAVID M. FRABRIZIO                        | 5.780            |
| 9-17-4.4   | MARGARET A. TOLER - LIFE                  | 1.318            |

T.H.

**NOTES ON SURVEY**

- NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS ≥ 2500 SQ. FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
- WELL SPOT CIRCLE & TOPO MARK SCALE ARE 1"=2000'
- PROPOSED LATERAL OR TOP HOLE OF KEITH STERN S-18HU IS WITHIN 3000' OF THE TOP HOLES OR LATERALS OF PROPOSED KEITH STERN N-13HU, 14HU, 15HU & 16HU, PROPOSED KNOB CREEK N-13HU, PROPOSED KNOB CREEK S-16HU AND PROPOSED KEITH STERN S-17HU & 19HU.

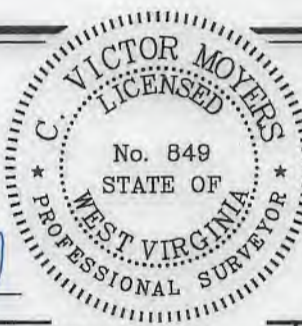
**REFERENCES**



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

P.S. 849

*C. Victor Moyers*



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

DATE MAY 1, 20 19  
 REVISED JUNE 11, 20 19  
 OPERATORS WELL NO. KEITH STERN S-18HU  
 API WELL NO. 47 - 051 - 02243  
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8811P18HUR.dwg  
 HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE 1" = 2000'  
 KEITH STERN S-18HU-REV1

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



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

LOCATION: GROUND = 740.50' ELEVATION PROPOSED = 744.65' WATERSHED FISH CREEK (HUC 10)  
 DISTRICT MEADE COUNTY MARSHALL QUADRANGLE GLEN EASTON 7.5'

SURFACE OWNER TH EXPLORATION, LLC ACREAGE 10.05±  
 ROYALTY OWNER ISAAC CROW, ET AL - SEE WW-6A1 ACREAGE 10.05±

PROPOSED WORK: LEASE NO. SEE WW-6A1  
 DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION   
 PERFORATE NEW FORMATION  PLUG AND ABANDON  CLEAN OUT AND REPLUG  OTHER   
 PHYSICAL CHANGE IN WELL (SPECIFY) TARGET FORMATION POINT PLEASANT  
 ESTIMATED DEPTH TVD: 11,391' / TMD: 18,566'

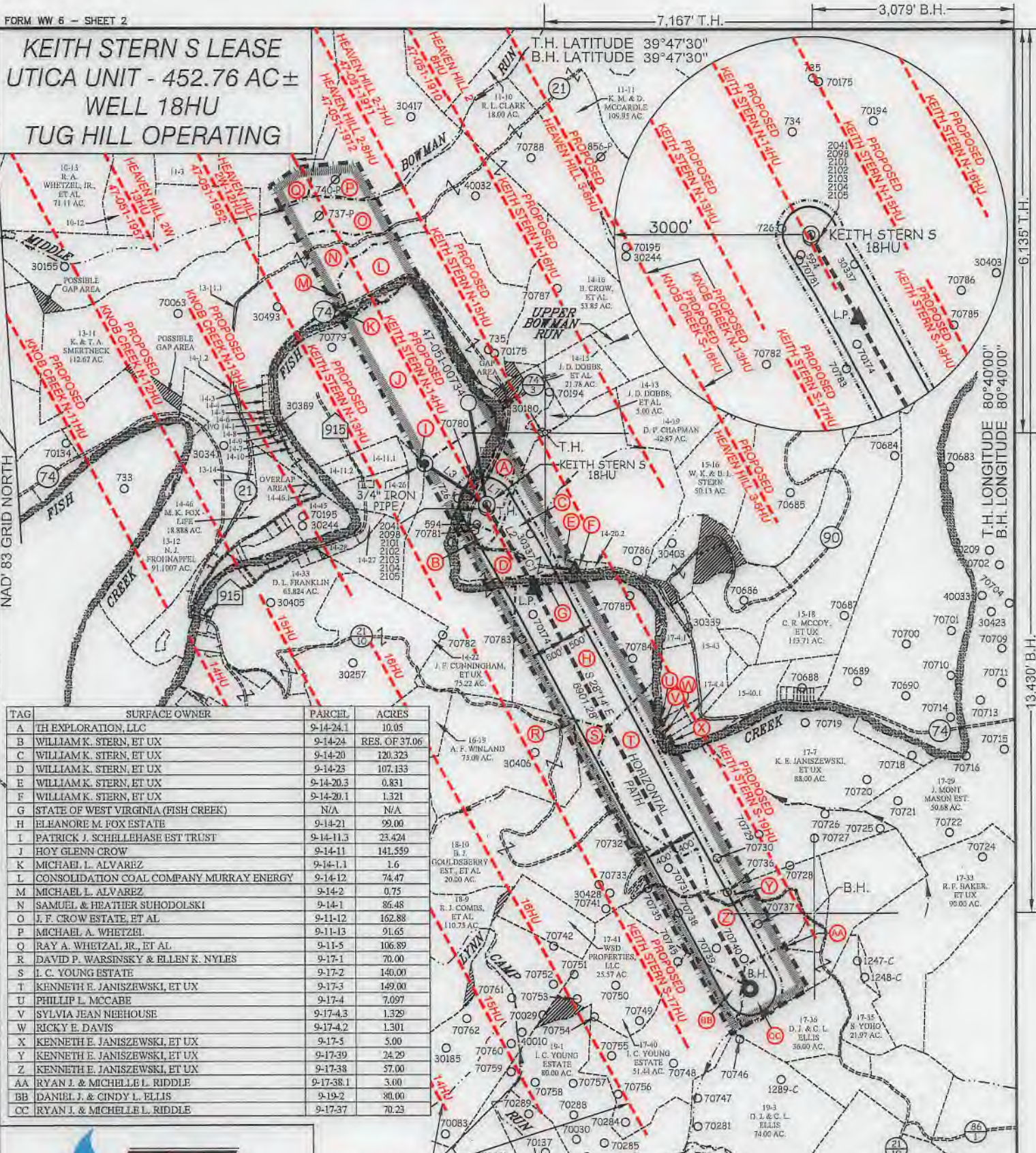
WELL OPERATOR TUG HILL OPERATING, LLC  
 ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500  
 FORT WORTH, TX 76107

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

COUNTY NAME PERMIT



**KEITH STERN S LEASE  
UTICA UNIT - 452.76 AC±  
WELL 18HU  
TUG HILL OPERATING**



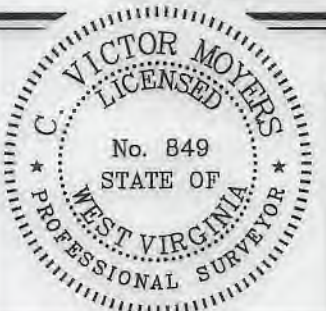
| TAG | SURFACE OWNER                            | PARCEL    | ACRES         |
|-----|--|-----------|---------------|
| A   | TH EXPLORATION, LLC                      | 9-14-24.1 | 10.05         |
| B   | WILLIAM K. STERN, ET UX                  | 9-14-24   | RES. OF 37.06 |
| C   | WILLIAM K. STERN, ET UX                  | 9-14-20   | 120.323       |
| D   | WILLIAM K. STERN, ET UX                  | 9-14-25   | 107.133       |
| E   | WILLIAM K. STERN, ET UX                  | 9-14-20.3 | 0.831         |
| F   | WILLIAM K. STERN, ET UX                  | 9-14-20.1 | 1.321         |
| G   | STATE OF WEST VIRGINIA (FISH CREEK)      | N/A       | N/A           |
| H   | ELEANORE M. FOX ESTATE                   | 9-14-21   | 99.00         |
| I   | PATRICK J. SCHELLEHASE EST TRUST         | 9-14-11.3 | 23.424        |
| J   | HOY GLENN CROW                           | 9-14-11   | 141.559       |
| K   | MICHAEL L. ALVAREZ                       | 9-14-1.1  | 1.6           |
| L   | CONSOLIDATION COAL COMPANY MURRAY ENERGY | 9-14-12   | 74.47         |
| M   | MICHAEL L. ALVAREZ                       | 9-14-2    | 0.75          |
| N   | SAMUEL & HEATHER SUHODOLSKI              | 9-14-1    | 86.48         |
| O   | J. F. CROW ESTATE, ET AL                 | 9-11-12   | 162.88        |
| P   | MICHAEL A. WHETZEL                       | 9-11-13   | 91.65         |
| Q   | RAY A. WHETZEL JR., ET AL                | 9-11-5    | 106.89        |
| R   | DAVID P. WARSINSKY & ELLEN K. NYLES      | 9-17-1    | 70.00         |
| S   | I. C. YOUNG ESTATE                       | 9-17-2    | 140.00        |
| T   | KENNETH E. JANISZEWSKI, ET UX            | 9-17-3    | 149.00        |
| U   | PHILLIP L. MCCABE                        | 9-17-4    | 7.097         |
| V   | SYLVIA JEAN NEEHOUSE                     | 9-17-4.3  | 1.329         |
| W   | RICKY E. DAVIS                           | 9-17-4.2  | 1.301         |
| X   | KENNETH E. JANISZEWSKI, ET UX            | 9-17-5    | 5.00          |
| Y   | KENNETH E. JANISZEWSKI, ET UX            | 9-17-39   | 24.29         |
| Z   | KENNETH E. JANISZEWSKI, ET UX            | 9-17-38   | 57.00         |
| AA  | RYAN J. & MICHELLE L. RIDDLER            | 9-17-38.1 | 3.00          |
| BB  | DANIEL J. & CINDY L. ELLIS               | 9-19-2    | 80.00         |
| CC  | RYAN J. & MICHELLE L. RIDDLER            | 9-17-37   | 70.23         |

| LINE | BEARING    | DISTANCE |
|------|------------|----------|
| L1   | N 59°03' W | 34.03'   |
| L2   | S 31°19' E | 921.29'  |
| L3   | N 10°20' W | 1570.87' |
| L4   | N 57°04' W | 1130.42' |

| CURVE | ARC LENGTH | RADIUS    | CHORD BEARING | CHORD LENGTH |
|-------|------------|-----------|---------------|--------------|
| C1    | 571.80'    | 14267.50' | S 29°09' E    | 571.76'      |

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P.S. 849 *C. Victor Moyers*



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

**LEGEND**

- UNIT BOUNDARY
- LEASED TRACTS INSIDE
- UNIT BOUNDARY
- SURFACE LINE
- PROPOSED UTICA
- WELL LATERAL
- 400' OFFSET LINE
- 500' OFFSET LINE
- TIE LINE
- CREEK
- ROAD
- COUNTY ROUTE
- PROPOSED WELL
- EXISTING WELL
- PERMITTED WELL
- SURFACE OWNER (SEE TABLE)
- LEASE # (SEE ADDITIONAL SHEETS)

SCALE 1" = 2000' FILE NO. 8811P18HUR.dwg  
KEITH STERN S-18HU-REV1  
DATE MAY 1 20 19  
REVISED JUNE 11 20 19  
OPERATORS WELL NO. KEITH STERN S-18HU  
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