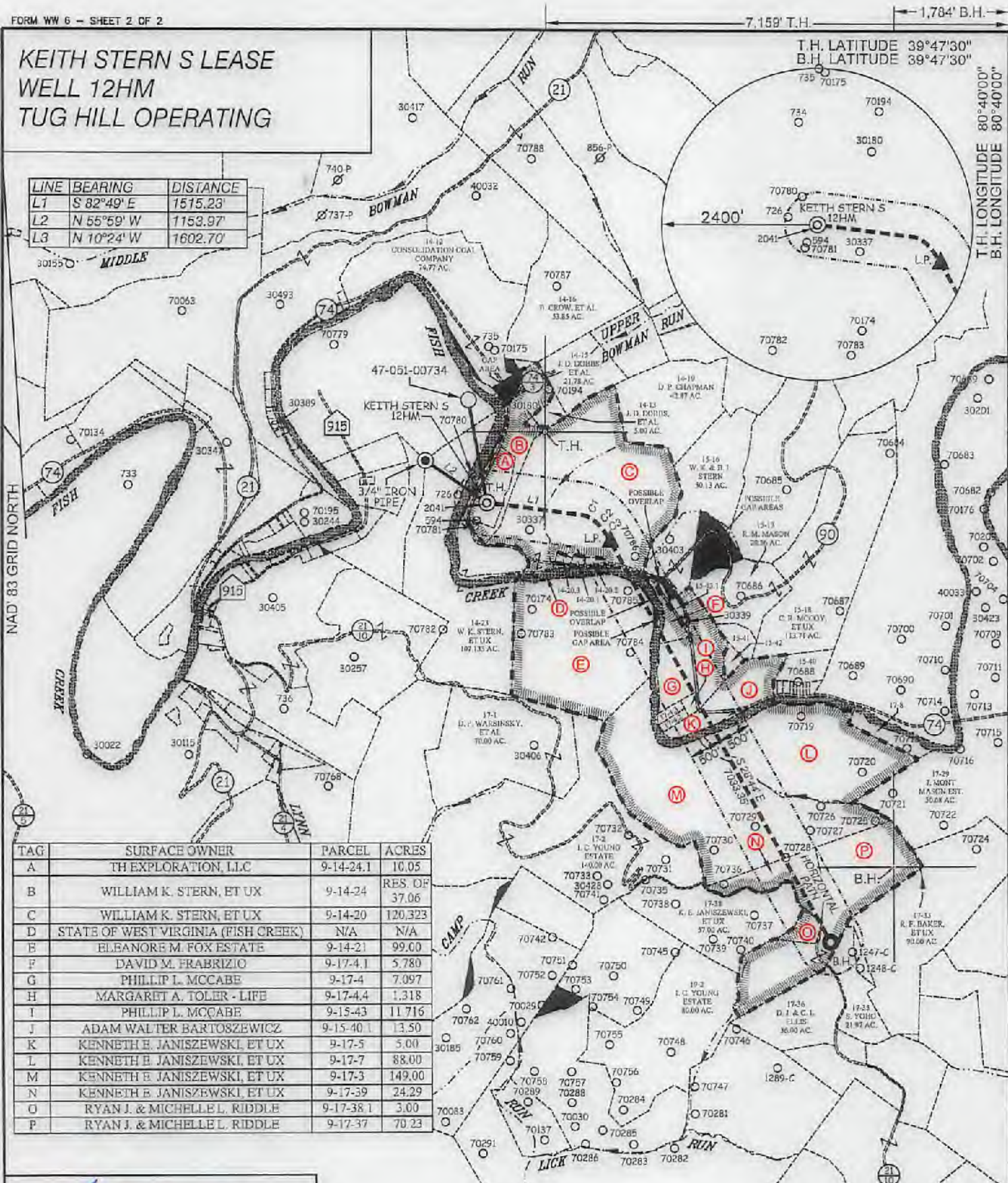


**KEITH STERN S LEASE  
WELL 12HM  
TUG HILL OPERATING**

LINE	BEARING	DISTANCE
L1	S 82°49' E	1515.23'
L2	N 55°59' W	1153.97'
L3	N 10°24' W	1602.70'

NAD 83 GRID NORTH



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. OR 37.06
C	WILLIAM K. STERN, ET UX	9-14-20	120.323
D	STATE OF WEST VIRGINIA (FISH CREEK)	N/A	N/A
E	ELANORE M. FOX ESTATE	9-14-21	99.00
F	DAVID M. FRABRIZIO	9-17-4.1	5.780
G	PHILLIP L. MCCABE	9-17-4	7.097
H	MARGARIT A. TOLER - LIFE	9-17-4.4	1.318
I	PHILLIP L. MCCABE	9-15-4.3	11.716
J	ADAM WALTER BARTOSZEWICZ	9-15-40.1	13.50
K	KENNETH E. JANISZEWSKI, ET UX	9-17-5	5.00
L	KENNETH E. JANISZEWSKI, ET UX	9-17-7	88.00
M	KENNETH E. JANISZEWSKI, ET UX	9-17-3	149.00
N	KENNETH E. JANISZEWSKI, ET UX	9-17-39	24.29
O	RYAN J. & MICHELLE L. RIDDLE	9-17-38.1	3.00
P	RYAN J. & MICHELLE L. RIDDLE	9-17-37	70.23

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	123.60'	286.29'	S 67°04' E	122.64'
C2	223.87'	779.20'	S 46°34' E	223.11'
C3	233.24'	1359.58'	S 33°42' E	232.96'

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(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

NAD'83 S.P.C.(FT)	N. 486,523.41	E. 1,633,440.82
NAD'83 GEC	LAT-(N) 39.774741	LONG-(W) 80.692137
NAD'83 UTM (M)	N. 4,402,801.53	E. 526,365.24

**LANDING POINT**

NAD'83 S.P.C.(FT)	N. 465,938.9	E. 1,635,348.5
NAD'83 GEC	LAT-(N) 39.773208	LONG-(W) 80.685324
NAD'83 UTM (M)	N. 4,402,693.2	E. 526,949.4

**BOTTOM HOLE**

NAD'83 S.P.C.(FT)	N. 459,771.2	E. 1,538,728.9
NAD'83 GEC	LAT-(N) 39.756307	LONG-(W) 80.673011
NAD'83 UTM (M)	N. 4,400,771.4	E. 528,010.6



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

P.S. 677  
*Gregory A. Smith*

**LEGEND**

LEASE LINE	
SURFACE LINE	
WELL LATERAL	
OFFSET LINE	
TIE LINE	
CREEK	
ROAD	
COUNTY ROUTE	
PROPOSED WELL	
EXISTING WELL	
PERMITTED WELL	
TAX MAP-PARCEL	00-00
LEASE # (SEE WW-6A1)	
SURFACE OWNER (SEE TABLE)	

SCALE 1" = 2000' FILE NO. 8811P12HMv2.dwg  
DATE JULY 31, 2018  
REVISED \_\_\_\_\_, 20\_\_\_\_  
OPERATORS WELL NO. KEITH STERN S-12HM  
API WELL NO. 47-051-02104  
NO. STATE COUNTY PERMIT

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

WELL OPERATOR	TUG HILL OPERATING, LLC	DESIGNATED AGENT	DIANNA STAMPER
ADDRESS	1320 SOUTH UNIVERSITY DRIVE, SUITE 500	ADDRESS	CT CORPORATION SYSTEM
	FORT WORTH, TX 76107		5400 D BIG TYLER ROAD
			CHARLESTON, WV 25313

COUNTY NAME  
PERMIT

**KEITH STERN S LEASE  
WELL 12HM  
TUG HILL OPERATING**

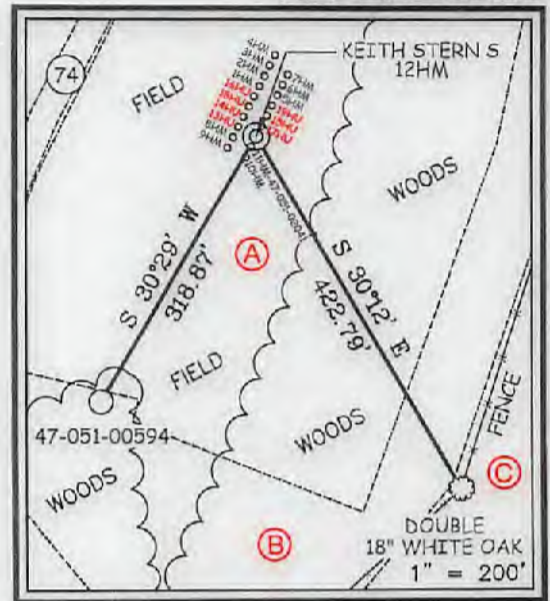
T.H. LATITUDE 39°47'30"  
B.H. LATITUDE 39°47'30"

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)  
 NAD'83 S.P.C.(FT) N. 465,523.41 E. 1,633,440.92  
 NAD'83 GEO. LAT-(N) 39.774741 LONG-(W) 80.692137  
 NAD'83 UTM (M) N. 4,402,838.2 E. 526,365.24  
**LANDING POINT**  
 NAD'83 S.P.C.(FT) N. 459,938.9 E. 1,635,348.5  
 NAD'83 GEO. LAT-(N) 39.773206 LONG-(W) 80.686324  
 NAD'83 UTM (M) N. 4,402,838.2 E. 526,949.4  
**BOTTOM HOLE**  
 NAD'83 S.P.C.(FT) N. 459,771.2 E. 1,636,728.9  
 NAD'83 GEO. LAT-(N) 39.756397 LONG-(W) 80.673011  
 NAD'83 UTM (M) N. 4,400,771.4 E. 528,010.6

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

TAX MAP/PCL	ADJOINING SURFACE OWNER	ACRES
14-20.1	WILLIAM K. STERN, ET UX	1.321
14-20.2	WILLIAM K. STERN, ET UX	1.525
14-20.3	WILLIAM K. STERN, ET UX	0.831
15-40	ROBERT WILLIAM BERISFORD	13.50
15-41	CHARLES RICHARD MCCOY, ET UX	4.50
15-42	ROBERT MATHEW MASON	2.63
15-43.1	MARGARET A. TOLER - LIFE, ET AL	3.284
17-4.2	RICKY E. DAVIS	1.301
17-4.3	SYLVIA JEAN NEEHOUSE	1.329
17-8	KEN & SUSAN JANISZEWSKI	6.00

**REFERENCES**



**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 IS 1"=2000'

*5/11/18*

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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.  
677 *Gregory A. Smith*



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.  
 DATE JULY 31, 20 18  
 REVISED \_\_\_\_\_, 20 \_\_\_\_  
 OPERATORS WELL NO. KEITH STERN S-12HM  
 API WELL NO. 47 - 051 - 02104  
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8811P12HMv2.dwg  
 HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE 1" = 2000'

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

WELL TYPE: OIL \_\_\_\_\_ GAS X INJECTION \_\_\_\_\_ WASTE DISPOSAL \_\_\_\_\_ IF "GAS" PRODUCTION X STORAGE \_\_\_\_\_ DEEP \_\_\_\_\_ SHALLOW X  
 LOCATION: GROUND = 742.90' 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: DRILL X CONVERT \_\_\_\_\_ DRILL DEEPER \_\_\_\_\_ REDRILL \_\_\_\_\_ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION \_\_\_\_\_ PERFORATE NEW FORMATION \_\_\_\_\_ PLUG AND ABANDON \_\_\_\_\_ CLEAN OUT AND REPLUG \_\_\_\_\_ OTHER \_\_\_\_\_  
 PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_ TARGET FORMATION MARCELLUS ESTIMATED DEPTH TVD: 6,412' / TMD: 14,022'

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