

**KEITH STERN N LEASE  
WELL 5HM  
TUG HILL OPERATING**

8,478' B.H. 7,138' T.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. 466,566.14	E. 1,633,462.77
NAD'83 GEO.	LAT-(N) 39.774860	LONG-(W) 80.692062
NAD'83 UTM (M)	N. 4,402,814.66	E. 526,371.68

LANDING POINT

NAD'83 S.P.C.(FT)	N. 466,378.1	E. 1,634,995.8
NAD'83 GEO.	LAT-(N) 39.774399	LONG-(W) 80.686599
NAD'83 UTM (M)	N. 4,402,765.2	E. 526,839.7

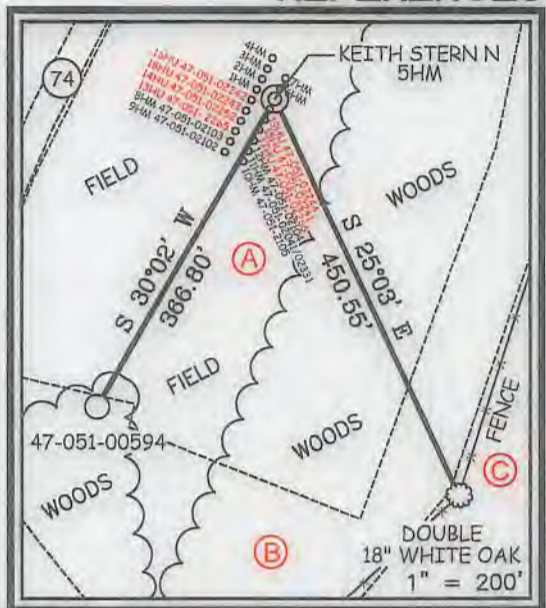
BOTTOM HOLE

NAD'83 S.P.C.(FT)	N. 471,533.5	E. 1,632,186.9
NAD'83 GEO.	LAT-(N) 39.788449	LONG-(W) 80.696836
NAD'83 UTM (M)	N. 4,404,321.5	E. 525,957.7

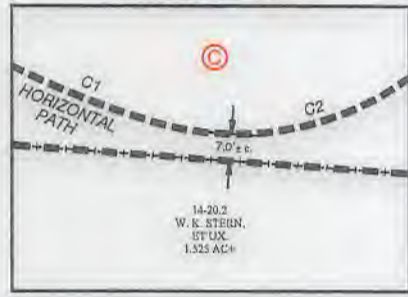
T.H. LONGITUDE 80°40'00"  
B.H. LONGITUDE 80°40'00"  
1,173' B.H.

MAP/PARCEL	ADJOINING SURFACE OWNER LIST	ACRES
9-13-11.1	SAMUEL & HEATHER SUHODOLSKI	0.49
9-13-14	MARGARET K. FOX - LIFE	3.80
9-14-1.1	MICHAEL L. ALVAREZ	1.6
9-14-1.2	KENNETH N. & TERESA A. SMERTNECK	1.02
9-14-2	MICHAEL L. ALVAREZ	0.73
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.
9-14-20.1	WILLIAM K. STERN, ET UX	1.321
9-14-20.2	WILLIAM K. STERN, ET UX	1.525
9-14-20.3	WILLIAM K. STERN, ET UX	0.831
9-14-45	GEORGE R. TAYLOR, ET UX	10.98
9-14-46.1	MARMA JANE FAZZARO	1.512

**REFERENCES**



DETAIL SCALE: 1" = 50'

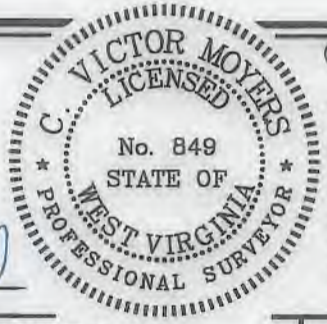


12 Vanhara Drive | P.O. Box 180 | Glenville, WV 26031 | 304.462.9634  
 1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952  
 254 East Beckley Bypass | Beckley, WV 25801 | 304.253.5295  
 slswv.com

**NOTES ON SURVEY**

- NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS OR DWELLINGS ≥ 2500 SQ. FT. WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
- WELL SPOT CIRCLE & TOPO MARK SCALE IS 1"=2000'.
- BASED ON WV DOT COUNTY ROUTE 74 IS A 40' STRIP OF LAND ACQUIRED IN NUMEROUS DEEDS.

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 JULY 31 , 20 18  
 REVISED AUGUST 19 , 20 20  
 OPERATORS WELL NO. KEITH STERN N-5HM  
 API WELL NO. 47 - 051 - 02376 HGA  
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8811P5HMR.dwg  
KEITH STERN N-5HM-REV1  
 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  LIQUID INJECTION  WASTE DISPOSAL  IF "GAS" PRODUCTION  STORAGE  DEEP  SHALLOW   
 LOCATION: GROUND = 745.30' 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  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 MARCELLUS  
 ESTIMATED DEPTH TVD: 6,410' / TMD: 12,919'

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

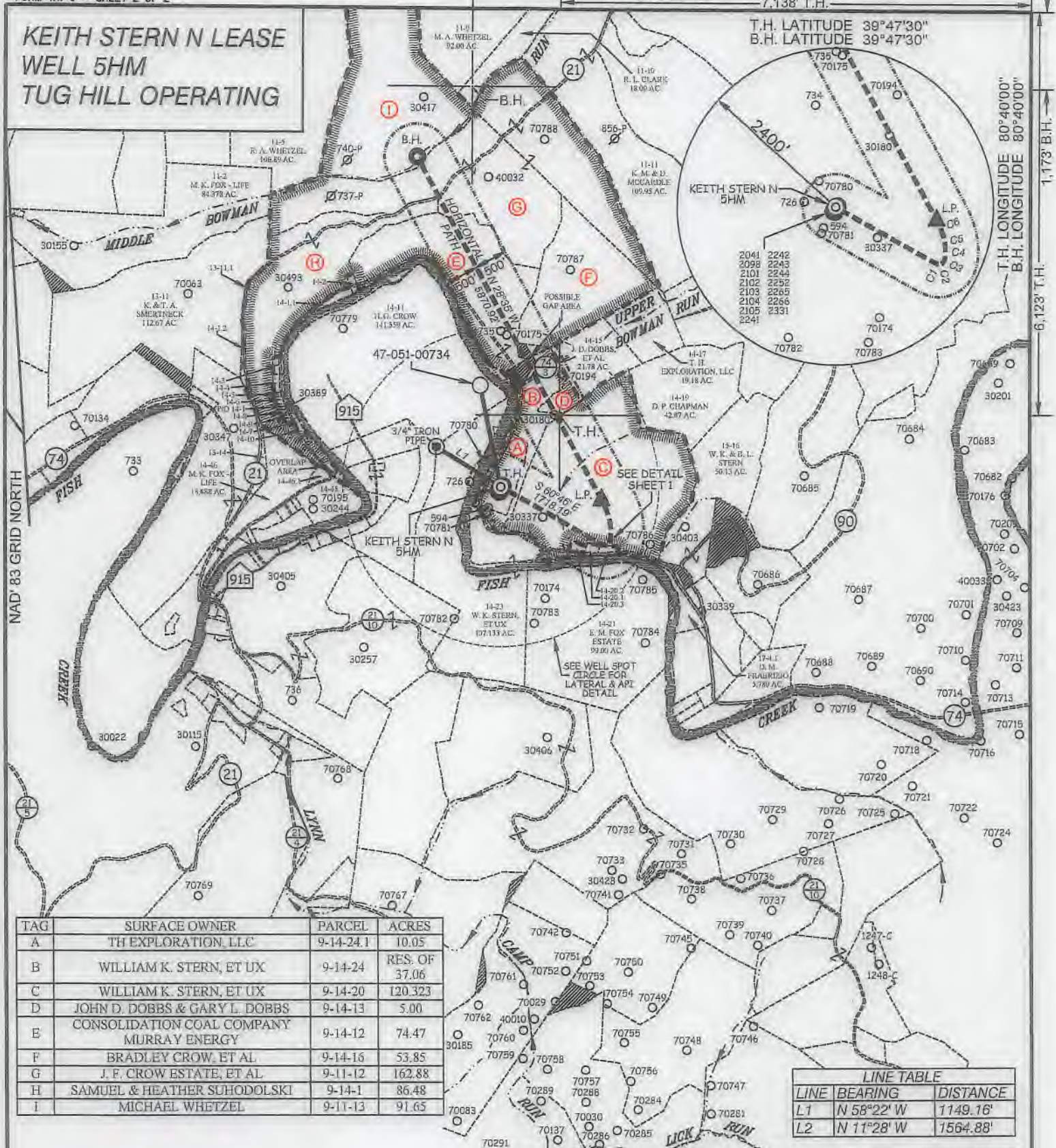
04/16/2024

COUNTY NAME PERMIT

**KEITH STERN N LEASE  
WELL 5HM  
TUG HILL OPERATING**

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

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



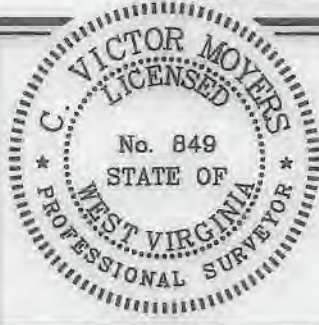
TAG	SURFACE OWNER	PARCEL	ACRES
A	TH EXPLORATION, LLC	9-14-24.1	10.05
B	WILLIAM K. STERN, ET UX	9-14-24	RES. OF 37.06
C	WILLIAM K. STERN, ET UX	9-14-20	120.323
D	JOHN D. DOBBS & GARY L. DOBBS	9-14-13	5.00
E	CONSOLIDATION COAL COMPANY MURRAY ENERGY	9-14-12	74.47
F	BRADLEY CROW, ET AL	9-14-16	53.85
G	J. F. CROW ESTATE, ET AL	9-11-12	162.88
H	SAMUEL & HEATHER SUHODOLSKI	9-14-1	86.48
I	MICHAEL WHETZEL	9-11-13	91.65

LINE	BEARING	DISTANCE
L1	N 58°22' W	1149.16'
L2	N 11°28' W	1564.88'

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	63.27'	222.02'	S 66°29' E	63.06'
C2	80.92'	76.90'	N 73°46' E	77.24'
C3	82.04'	170.03'	N 24°43' E	81.24'
C4	184.74'	614.02'	N 01°08' E	184.04'
C5	178.72'	888.12'	N 12°39' W	178.42'
C6	243.36'	1384.25'	N 23°28' W	243.05'



12 Vanhorn Drive | P.O. Box 130 | Glenville, WV 26031 | 304.462.5654  
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.246.3992  
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296  
slsv.com



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

P.S. 849 *C. Victor Moyers*

**LEGEND**

- LEASE LINE
- SURFACE LINE
- WELL LATERAL
- OFFSET LINE
- TIE LINE
- CREEK
- ROAD
- COUNTY ROUTE
- PROPOSED WELL
- EXISTING WELL
- PERMITTED WELL
- TAX MAP-PARCEL
- LEASE # (SEE WW-BA1)
- SURFACE OWNER (SEE TABLE)

SCALE 1" = 2000' FILE NO. 8811P5HMR.dwg  
KEITH STERN N-5HM-REV1  
DATE JULY 31, 20 18  
REVISED AUGUST 19, 20 20  
OPERATORS WELL NO. KEITH STERN N-5HM  
API WELL NO. 47-051-02376 WVA  
NO. STATE COUNTY PERMIT

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

COUNTY NAME PERMIT

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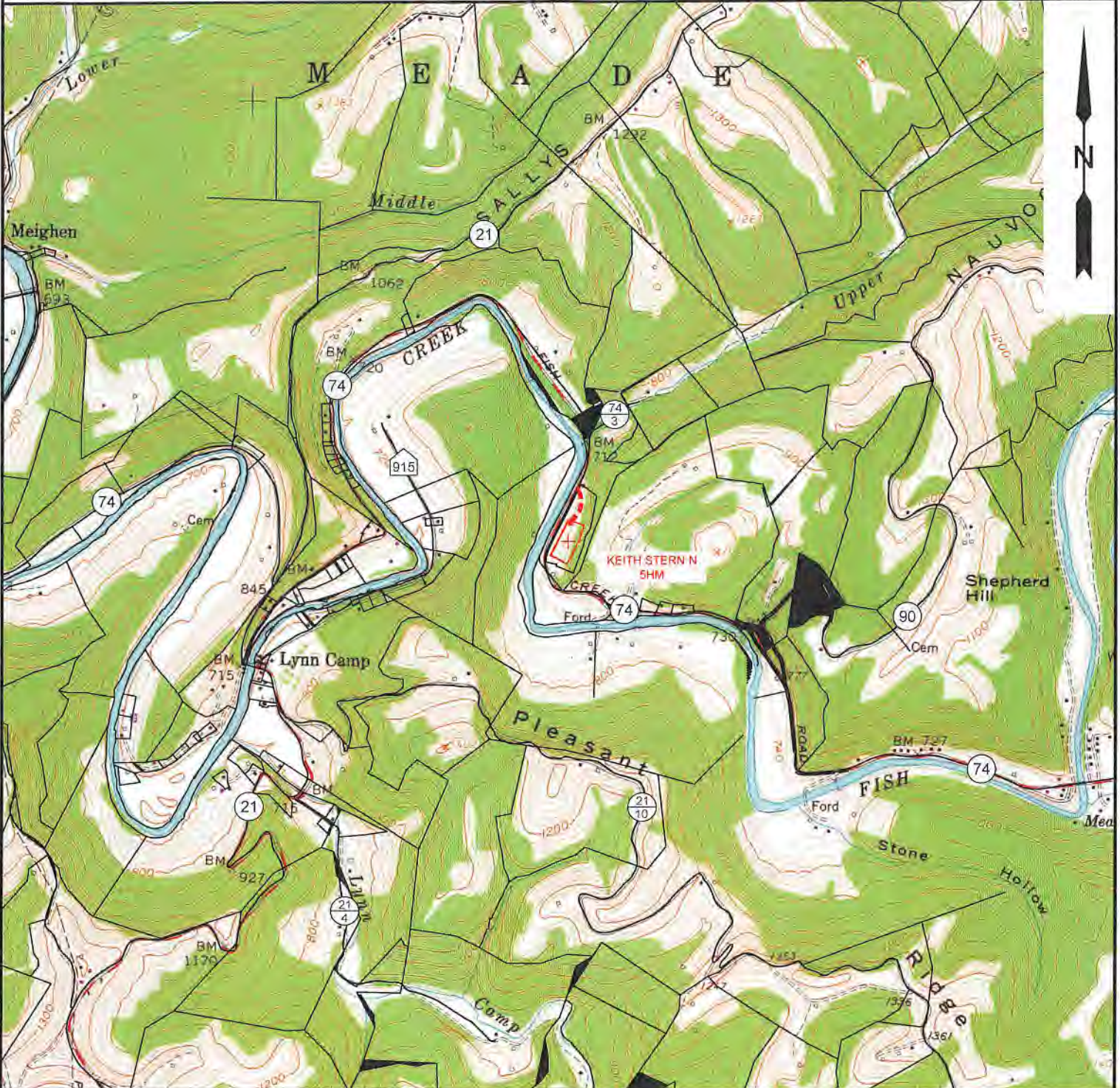
04/16/2021

4705102376

WW-9

# PROPOSED KEITH STERN N - 5HM

SUPPLEMENT PG. 2



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 N WELL PAD LOCATION.



12 Vannorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.452.6834  
 1412 Kanawha Boulevard, East | Charleston, WV 25310 | 304.336.1682  
 254 East Beckley Bypass | Beckley, WV 25801 | 304.235.5296  
 slevs.com

TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR:	
COUNTY	DISTRICT	TUG HILL OPERATING, LLC	
MARSHALL	MEADE	380 SOUTHPOINTE BLVD	
		SUITE 200	
		CANONSBURG, PA 15317	
DRAWN BY	JOB NO.	DATE	SCALE
K.G.M.	8811	08/24/2020	1" = 2000'



**TUG HILL**  
 OPERATING

04/16/2021