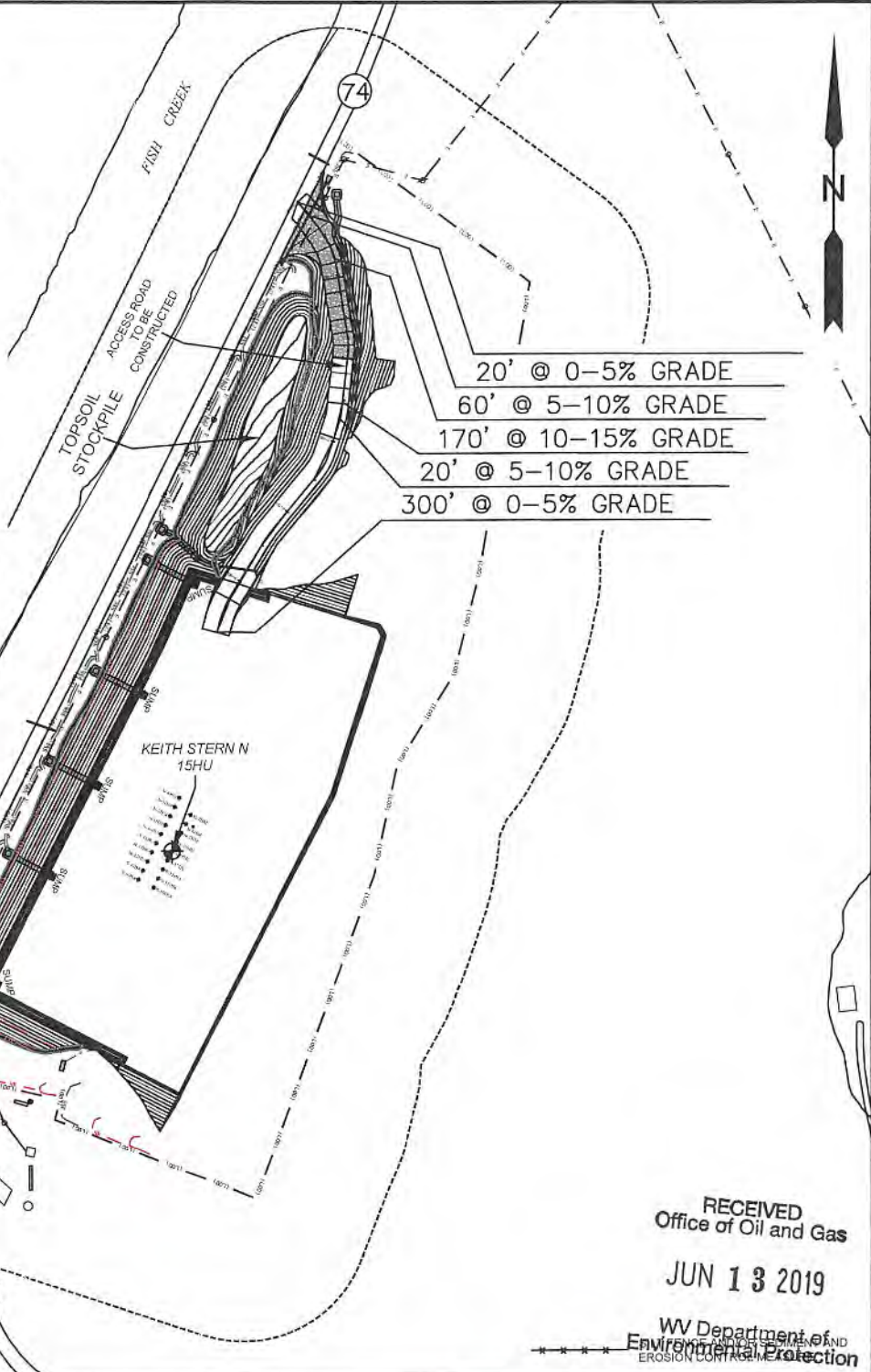


# PROPOSED KEITH STERN N - 15HU

**NOTES:**

1. (C) - DENOTES INSTALL 18" PVC CULVERT AND APPLY APPROPRIATE SEDIMENT OUTLET CONTROL (RIP RAP SPLASH PAD)
2. DRAWING NOT TO SCALE
3. REFERENCE IS HEREBY MADE TO THE WV D.E.P. OFFICE OF OIL & GAS, "EROSION AND SEDIMENT CONTROL FIELD MANUAL" FOR REQUIREMENTS AND BMPs FOR AVERAGE FIELD CONDITIONS CONCERNING THE MAINTENANCE OF EXISTING ROADS AND THE CONSTRUCTION OF PROPOSED ROADS. FIELD CONDITIONS MAY REQUIRE VARIANCE FROM THESE GUIDELINES AND THE EARTHWORK CONTRACTOR IS RESPONSIBLE FOR NOTIFICATION TO THE INSPECTOR AND THE OPERATOR SHOULD THESE CONDITIONS OCCUR.
4. INSTALL CULVERTS AS SHOWN ON RECLAMATION PLAN OR AS FIELD CONDITIONS REQUIRE.
5. ENTRANCES ONTO PUBLIC ROADS SHALL BE CONSTRUCTED OR MAINTAINED IN ACCORDANCE WITH WV D.O.T. REGULATIONS. ADDITIONAL PERMITS MAY BE REQUIRED.
6. TEMPORARILY SEED AND MULCH ALL SLOPS UPON CONSTRUCTION OF LOCATION.
7. ALL CUT AND FILL SLOPES ARE 2H : 1V SLOPE.
8. ALL TREES 6-INCHES AND ABOVE ARE TO BE CUT AND STACKED. BRUSH SLASHINGS ARE TO BE UTILIZED DOWN SLOPE OF SITE AND STRUCTURES TO ACT AS A CONTROL BARRIER IF AVAILABLE.
9. SEE KEITH STERN N SITE PLAN PREPARED BY KELLEY SURVEYING, FOR COMPLETE CONSTRUCTION & EROSION AND SEDIMENT CONTROL DETAILS.



20' @ 0-5% GRADE  
 60' @ 5-10% GRADE  
 170' @ 10-15% GRADE  
 20' @ 5-10% GRADE  
 300' @ 0-5% GRADE

RECEIVED  
 Office of Oil and Gas  
 JUN 13 2019

WV Department of  
 Environmental Protection  
OFFICE OF OIL AND GAS  
 EROSION CONTROL

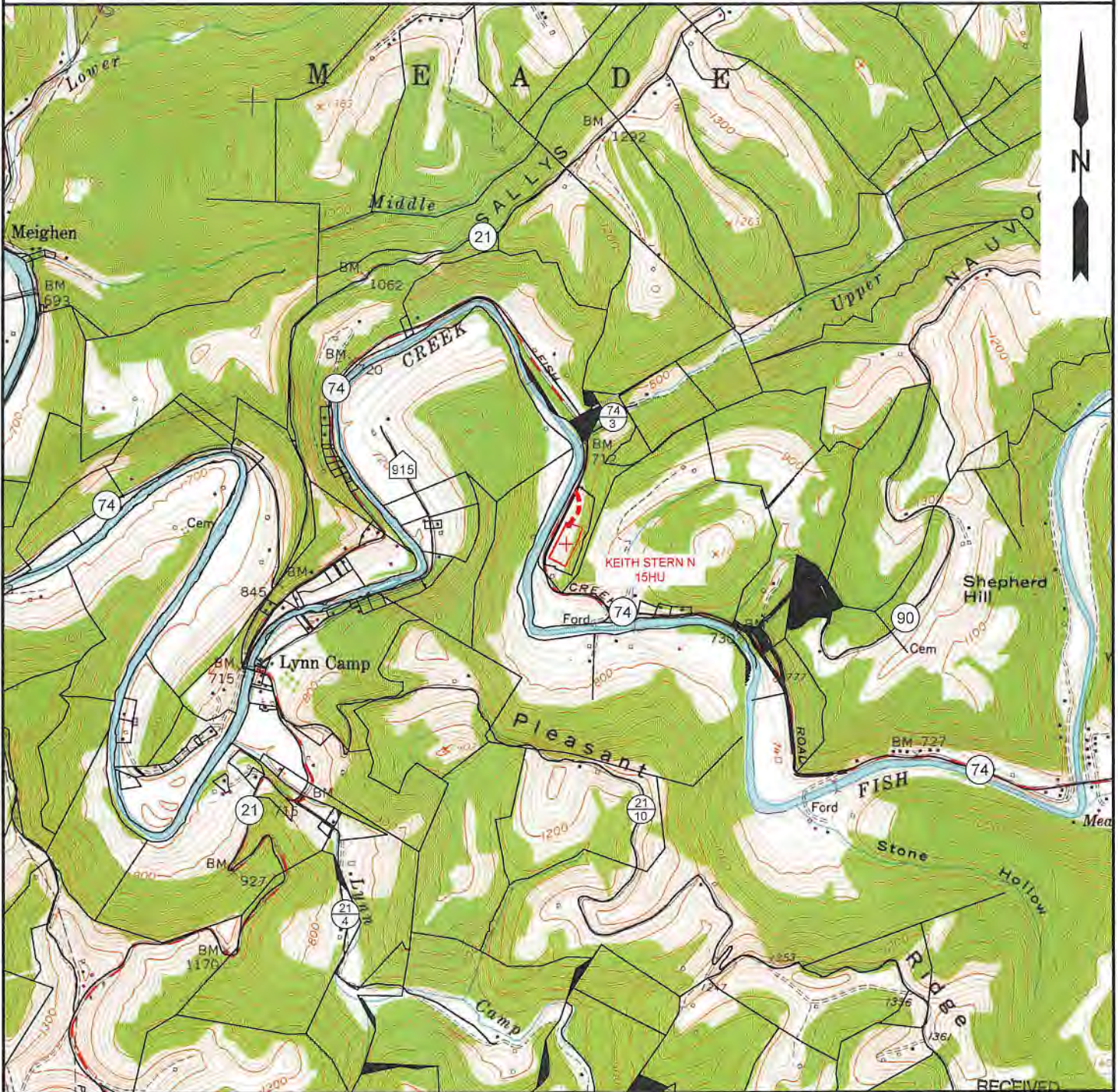
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 P.O. Box 150 • 12 Vanhorn Drive • Glenville, WV 26351 • (304) 462-5634  
 www.slsurveys.com

TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR: TUG HILL OPERATING, LLC 380 SOUTHPOINTE BL.VD SUITE 200 CANONSBURG, PA 15317	
COUNTY	DISTRICT		
MARSHALL	MEADE		
DRAWN BY	JOB NO.	DATE	SCALE
K.G.M.	8811	05/29/2019	NONE

**TUG HILL**  
 OPERATING



# PROPOSED KEITH STERN N - 15HU



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 HEAD

Office of Oil and Gas

JUN 13 2019

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www.slsurveys.com

TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR:	
COUNTY	DISTRICT	TUG HILL OPERATING, LLC	
MARSHALL	MEADE	380 SOUTHPONTE BLVD	
		SUITE 200	
		CANONSBURG, PA 15317	
DRAWN BY	JOB NO.	DATE	SCALE
K.G.M.	8811	05/29/2019	1" = 2000'

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



**KEITH STERN N LEASE  
UTICA UNIT - 631.99 AC ±  
WELL 15HU  
TUG HILL OPERATING**

8,732' B.H.

7,148' T.H.

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

B.H.

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)  
 NAD'83 S.P.C.(FT) N. 466,544.78 E. 1,633,451.84  
 NAD'83 GEO. LAT-(N) 39.7742801 LONG-(W) 80.692099  
 NAD'83 UTM (M) N. 4,402,808.09 E. 526,368.46  
**LANDING POINT**  
 NAD'83 S.P.C.(FT) N. 466,331.4 E. 1,634,911.5  
 NAD'83 GEO. LAT-(N) 39.774268 LONG-(W) 80.686897  
 NAD'83 UTM (M) N. 4,402,750.5 E. 526,814.2  
**BOTTOM HOLE**  
 NAD'83 S.P.C.(FT) N. 471,794.4 E. 1,631,936.0  
 NAD'83 GEO. LAT-(N) 39.789156 LONG-(W) 80.697741  
 NAD'83 UTM (M) N. 4,404,399.7 E. 525,879.9

T.H. LONGITUDE 80°40'00"  
B.H. LONGITUDE 80°40'00"  
915' B.H.  
6,144' T.H.

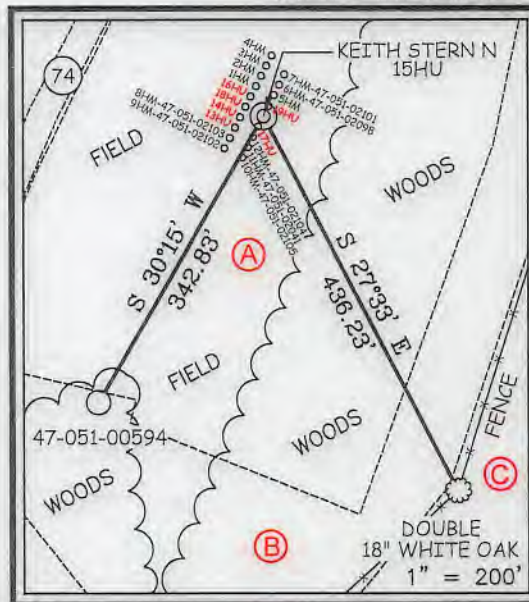
MAP/PARCEL	ADJOINING SURFACE OWNER LIST	ACRES
9-13-11.1	SAMUEL & HEATHER SUHODOLSKI	0.49
9-13-14	MARGARET K. FOX - LIFE	3.00
9-14-1.1	MICHAEL L. ALVAREZ	1.6
9-14-1.2	KENNETH N. & TERESA A. SMERTNECK	1.02
9-14-2	MICHAEL L. ALVAREZ	0.73
9-14-3	MICHAEL L. ALVAREZ	NORTH P/O 3 PCLS
9-14-4	MICHAEL L. ALVAREZ	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. BRAZMUS, 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
9-14-26	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	ROBERT WILLIAM BERISFORD	13.50
9-15-41	CHARLES RICHARD MCCOY, ET UX	4.50
9-15-42	ROBERT MATHEW MASON	2.63

T.H.

**NOTES ON SURVEY**

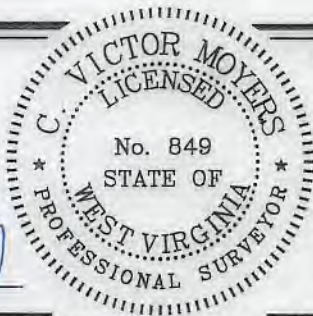
- NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS ≥ 2500 SQ. FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
- WELL SPOT CIRCLE & TOPO MARK SCALE ARE 1"=2000'
- PROPOSED LATERAL OR TOP HOLE OF KEITH STERN N-15HU IS WITHIN 3000' OF THE TOP HOLES OR LATERALS OF THE FOLLOWING:  
 PROPOSED KEITH STERN N-13HU, 14HU & 16HU,  
 PROPOSED KEITH STERN S-17HU, 18HU & 19HU,  
 PROPOSED KNOB CREEK N-13HU,  
 PROPOSED KNOB CREEK S-16HU,  
 PROPOSED HEAVEN HILL 3-6HU,  
 HEAVEN HILL 2W-12HU (47-051-01952),  
 HEAVEN HILL 2-6HU (47-051-01910),  
 HEAVEN HILL 2-7HU (47-051-01911)  
 & HEAVEN HILL 2-8HU (47-051-01912)

**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 29, 20 19  
 REVISED JUNE 10, 20 19  
 OPERATORS WELL NO. KEITH STERN N-15HU  
 API WELL NO. 47 - 051 - 02241  
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8811P15HUR2.dwg  
 HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE 1" = 2000'  
 KEITH STERN N-15HU-REV2

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 = 744.70' 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 TH EXPLORATION, LLC, 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: 11,396' / TMD: 18,311'

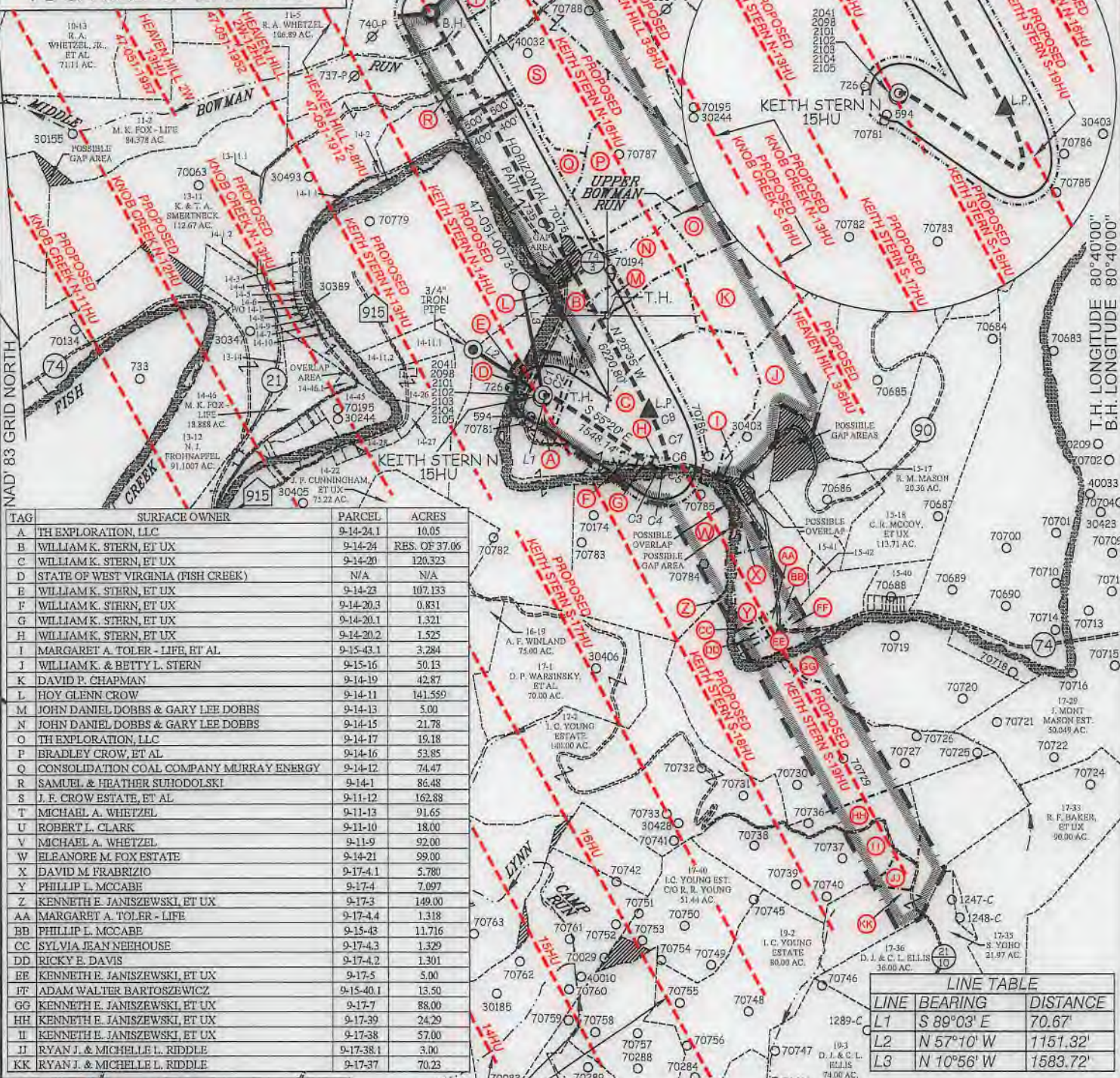
WELL OPERATOR TUG HILL OPERATING, LLC  
 ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107

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

COUNTY NAME PERMIT



**KEITH STERN N LEASE  
UTICA UNIT - 631.99 AC ±  
WELL 15HU  
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	STATE OF WEST VIRGINIA (FISH CREEK)	N/A	N/A
E	WILLIAM K. STERN, ET UX	9-14-23	107.133
F	WILLIAM K. STERN, ET UX	9-14-20.3	0.831
G	WILLIAM K. STERN, ET UX	9-14-20.1	1.321
H	WILLIAM K. STERN, ET UX	9-14-20.2	1.525
I	MARGARET A. TOLER - LIFE, ET AL	9-15-43.1	3.284
J	WILLIAM K. & BETTY L. STERN	9-15-16	50.13
K	DAVID P. CHAPMAN	9-14-19	42.87
L	HOY GLENN CROW	9-14-11	141.559
M	JOHN DANIEL DOBBS & GARY LEE DOBBS	9-14-13	5.00
N	JOHN DANIEL DOBBS & GARY LEE DOBBS	9-14-15	21.78
O	TH EXPLORATION, LLC	9-14-17	19.18
P	BRADLEY CROW, ET AL	9-14-16	53.85
Q	CONSOLIDATION COAL COMPANY MURRAY ENERGY	9-14-12	74.47
R	SAMUEL & HEATHER SUHODOLSKI	9-14-1	86.48
S	J.F. CROW ESTATE, ET AL	9-11-12	162.88
T	MICHAEL A. WHETZEL	9-11-13	91.65
U	ROBERT L. CLARK	9-11-10	18.00
V	MICHAEL A. WHETZEL	9-11-9	92.00
W	ELEANORE M. FOX ESTATE	9-14-21	98.00
X	DAVID M. FRABRIZIO	9-17-4.1	5.780
Y	PHILLIP L. MCCABE	9-17-4	7.097
Z	KENNETH E. JANISZEWSKI, ET UX	9-17-3	149.00
AA	MARGARET A. TOLER - LIFE	9-17-4.4	1.318
BB	PHILLIP L. MCCABE	9-15-43	11.716
CC	SYLVIA JEAN NEEHOUSE	9-17-4.3	1.329
DD	RICKY E. DAVIS	9-17-4.2	1.301
EE	KENNETH E. JANISZEWSKI, ET UX	9-17-5	5.00
FF	ADAM WALTER BARTOSZEWSKI	9-15-40.1	13.50
GG	KENNETH E. JANISZEWSKI, ET UX	9-17-7	88.00
HH	KENNETH E. JANISZEWSKI, ET UX	9-17-39	24.29
II	KENNETH E. JANISZEWSKI, ET UX	9-17-38	57.00
JJ	RYAN J. & MICHELLE L. RIDDLE	9-17-38.1	3.00
KK	RYAN J. & MICHELLE L. RIDDLE	9-17-37	70.23

**LINE TABLE**

LINE	BEARING	DISTANCE
L1	S 89°03' E	70.67'
L2	N 57°10' W	1151.32'
L3	N 10°56' W	1583.72'

**CURVE TABLE**

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C2	181.02'	1389.24'	S 57°58' E	180.89'
C3	75.99'	238.39'	S 63°36' E	75.66'
C4	62.84'	65.07'	N 80°38' E	60.43'
C5	73.74'	108.24'	N 22°49' E	72.32'
C6	119.38'	471.22'	N 02°38' W	119.06'
C7	51.06'	154.06'	S 71°22' E	50.82'
C8	334.64'	1553.50'	N 16°23' W	333.99'
C8	330.33'	2945.17'	N 25°24' W	330.16'

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www.slsww.com

P.S. 849 *C. Victor Moyers*

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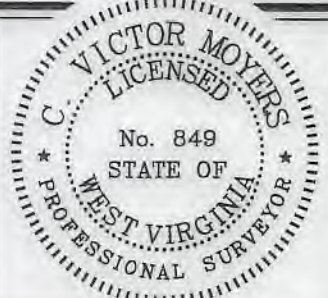
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(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.

**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. 8811P15HUR2.dwg  
KEITH STERN N-15HU-REV2

DATE MAY 29 20 19  
REVISED JUNE 10 20 19

OPERATORS WELL NO. KEITH STERN N-15HU

API WELL NO. 47-051-02241

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 FORT WORTH, TX 76107	ADDRESS	CT CORPORATION SYSTEM 5400 D BIG TYLER ROAD CHARLESTON, WV 25313