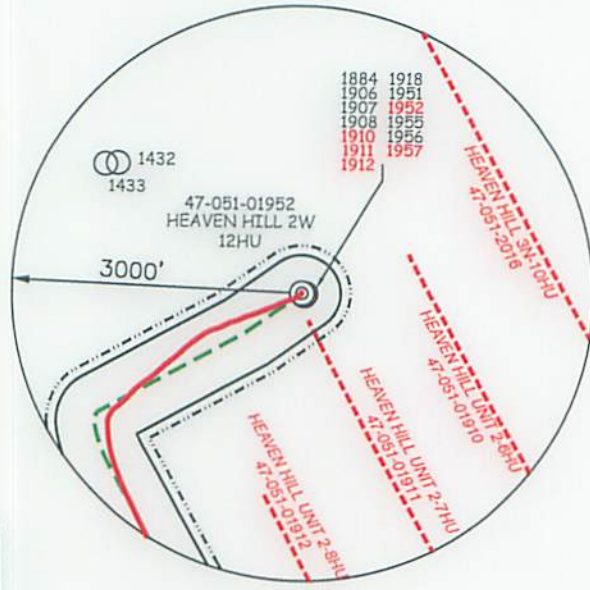


**HEAVEN HILL 2W LEASE
UTICA UNIT - 572.54 AC. ±
WELL 12HU
TUG HILL OPERATING**

T.H. LATITUDE 39°50'00"
B.H. LATITUDE 39°47'30"

T.H. LONGITUDE 80°42'30"
B.H. LONGITUDE 80°40'00"

B.H.
AS-DRILLED B.H.



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

NAD'83 S.P.C.(FT)	N. 479,500.35	E. 1,627,779.64
NAD'83 GEO.	LAT-(N) 39.810156	LONG-(W) 80.712901
NAD'83 UTM (M)	N. 4,406,726.20	E. 524,574.44

LANDING POINT

NAD'83 S.P.C.(FT)	N. 477,667.3	E. 1,625,809.9
NAD'83 GEO.	LAT-(N) 39.805051	LONG-(W) 80.719823
NAD'83 UTM (M)	N. 4,406,157.7	E. 523,983.7

BOTTOM HOLE

NAD'83 S.P.C.(FT)	N. 470,998.4	E. 1,629,508.4
NAD'83 GEO.	LAT-(N) 39.786882	LONG-(W) 80.706341
NAD'83 UTM (M)	N. 4,404,144.8	E. 525,144.4

Lease Name or No.	Tag	Parcel	Grantor, Lessor, etc.	Deed Book/Page
10*15521	A	9-7-3	VENANGO 21ST CENTURY ENERGY INC	722 281
10*15608	A	9-7-3	CHARLES R HAGEDORN JR	816 423
10*47051.073.1	A	9-7-3	VENANGO 21ST CENTURY ENERGY INC	888 618
10*47051.073.2	A	9-7-3	PATRIOT RESTORATIONS LLC	908 541
10*47051.073.3	A	9-7-3	TRIENERGY HOLDINGS, LLC	878 330
10*17229	B	9-4-10	STEPHEN MENENDEZ	913 66
10*15661	C	9-6-5	CHESTNUT HOLDINGS LLC	839 170
	D	9-6-4	ROBERT LEE CARNEY AND BONNIE ANNE CARNEY	682 255
10*15510	E	9-6-9	ELAINE PHELPS ET VIR	718 326
10*15511	E	9-6-9	DAVID E CROW	718 376
10*15512	E	9-6-9	FRANCES COFFEY	718 378
10*15513	E	9-6-9	KAY KEYES	718 330
10*15514	E	9-6-9	L PAUL CROW	718 336
10*15515	E	9-6-9	DESIRE L CROW	718 334
10*15516	E	9-6-9	ROSE MARIE KIELGCZEWSKI	718 354
10*15517	E	9-6-9	DIANNE GELLNER & GARY GELLNER	718 345
10*15518	E	9-6-9	JAMES P HOLLIDAY AND JACQUELINE HOLLIDAY	718 347
10*15519	E	9-6-9	JOHN CROW	726 580
10*15520	E	9-6-9	TIMOTHY CROW	726 582
10*47051.123.1	E	9-6-9	LLOYD G BAKER	865 389
10*47051.123.2	E	9-6-9	JAMES P HOLLIDAY AND JACQUELINE HOLLIDAY	873 143
10*15525	F	9-6-12	RONALD KEITH MASON ET UX	772 445
10*15541	F	9-6-12	MARY RUTH FROHNAPFEL	781 312
10*15542	F	9-6-12	KENNETH D SIBURT	781 218
10*15543	F	9-6-12	SANDRA FROWEN	781 307
10*15544	F	9-6-12	VICKI J CHERRY A/K/A VICKIE L CHERRY	793 318
10*15545	F	9-6-12	JAMES B SIBURT ET UX	793 332
10*15546	F	9-6-12	ALAN K SIBURT ET UX	793 325
10*15547	F	9-6-12	RODNEY L SIBURT	793 346
			RAY C. HARTZELL AND CAROL J. HARTZELL,	
10*15507	G	9-6-13	HUSBAND AND WIFE	689 162
10*15504	H	9-6-14	JAMES MASON ET AL	692 461

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'
- ROYALTY OWNERSHIP PROVIDED BY TUG HILL OPERATING, LLC.
- SURFACE OWNERSHIP PROVIDED WAS NOT ADDRESSED
- AS-DRILLED DATA PROVIDED BY TUG HILL OPERATING, LLC.
- PLAT UPDATED TO SHOW AS-DRILLED PATH.
- THE LATERAL OR TOP OF HEAVEN HILL UNIT 2-12HU (47-051-01952) IS LOCATED WITHIN 3000' OF THE FOLLOWING:
PROPOSED KNOB CREEK N-12HU,
PROPOSED KNOB CREEK N-13HU,
HEAVEN HILL UNIT 2-6HU (47-051-01910),
HEAVEN HILL UNIT 2-7HU (47-051-01911),
HEAVEN HILL UNIT 2-8HU (47-051-01912),
HEAVEN HILL 2W-13HU (47-051-01957),
HEAVEN HILL 3-10HU (47-051-02016),
PROPOSED KEITH STERN N-13HU,
KEITH STERN N-14HU (47-051-02252),
KEITH STERN N-15HU (47-051-02241).

SLS
Land & Energy Development
Solutions from the ground up.
P.O. Box 190 • 12 Vanhorn Drive • Glenville, WV 26031 • (304) 462-5634
www.slsww.com

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. *C. Victor Moyers*
849



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
DATE OCTOBER 29, 20 18
REVISED SEPTEMBER 6, 20 19
OPERATORS WELL NO. HEAVEN HILL 2W-12HU
API WELL NO. 47 - 051 - 1952
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8703PAD12HUR.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 LIQUID INJECTION WASTE DISPOSAL IF "GAS" PRODUCTION X STORAGE DEEP X SHALLOW

LOCATION: GROUND = 1,350.0' ELEVATION PROPOSED = 1,331.26' WATERSHED WEST FORK OF LOWER BOWMAN RUN OF FISH CREEK (HUC 10)
DISTRICT MEADE COUNTY MARSHALL QUADRANGLE GLEN EASTON 7.5'

SURFACE OWNER C.R. JR. & A.H. HAGEDORN ACREAGE 203.07±
ROYALTY OWNER C.R. JR. & A.H. HAGEDORN ET AL (SEE ABOVE & SHEET 3) ACREAGE 203.07±

PROPOSED WORK: LEASE NO. SEE ABOVE & SHEET 3
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 POINT PLEASANT
ESTIMATED DEPTH TVD: 11,784' / TMD: 19,732'

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

COUNTY NAME
PERMIT

**HEAVEN HILL 2W LEASE
UTICA UNIT - 572.54 AC. ±
WELL 12HU
TUG HILL OPERATING**

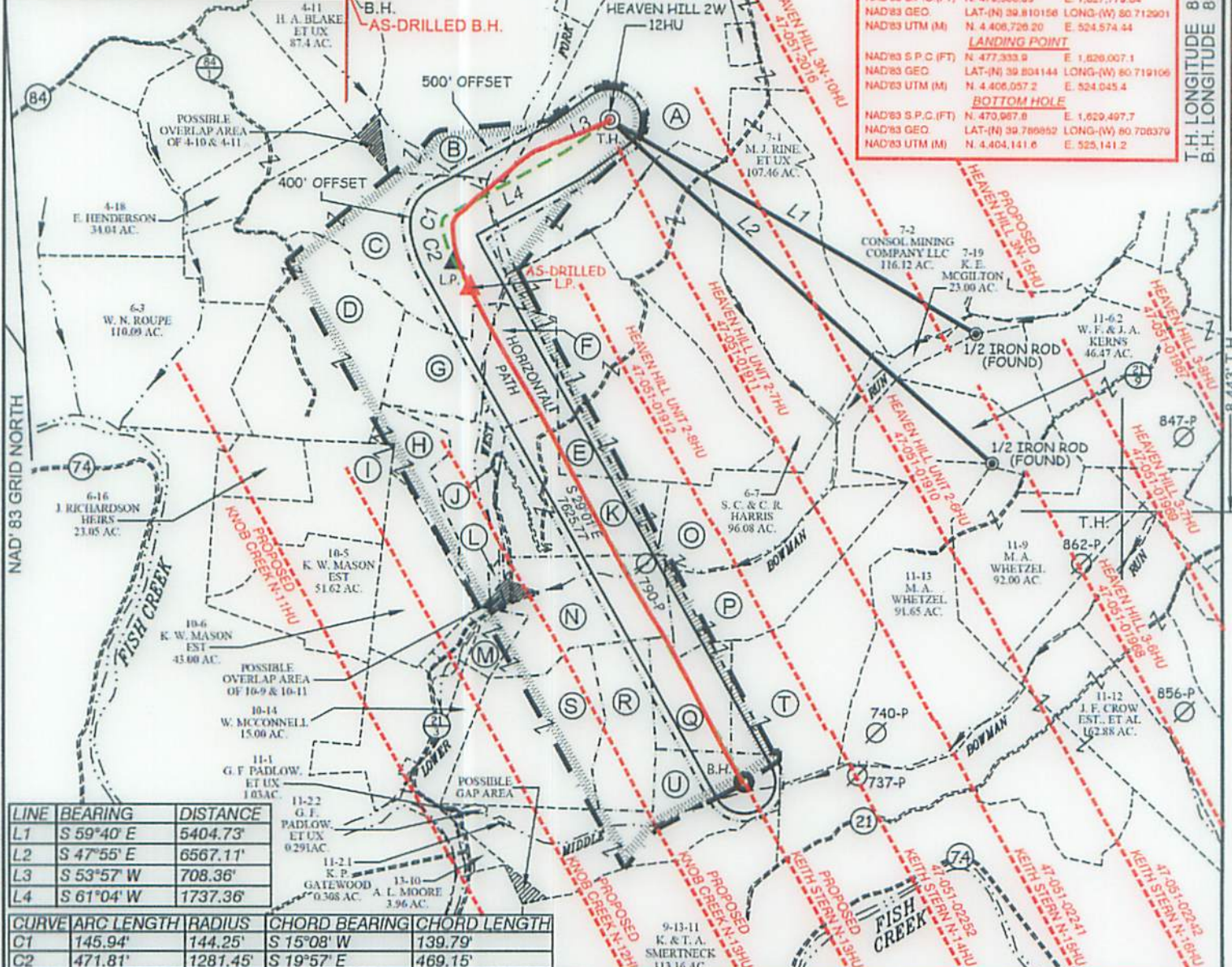
LEGEND
AS DRILLED ———
PROPOSED - - - - -
4-9-4 J.D. & M. ROBERTS 90.00 AC.
5-1 T.L. SAMPSON ET UX 111.71 AC.
7-3-1 C.R. JR. & A.H. HAGEDORN 4.57 AC.

**T.H. LATITUDE 39°50'00"
B.H. LATITUDE 39°47'30"**

AS DRILLED COORDINATES FOR WELL NO. 12HU

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

TOP HOLE			
NAD'83 S.P.C. (FT)	N. 479,500.35	E. 1,627,779.64	
NAD'83 GEO.	LAT. (N) 39.810156	LONG. (W) 80.712901	
NAD'83 UTM (M)	N. 4,406,726.20	E. 524,574.44	
LANDING POINT			
NAD'83 S.P.C. (FT)	N. 477,333.9	E. 1,629,007.1	
NAD'83 GEO.	LAT. (N) 39.804144	LONG. (W) 80.719106	
NAD'83 UTM (M)	N. 4,406,057.2	E. 524,045.4	
BOTTOM HOLE			
NAD'83 S.P.C. (FT)	N. 470,967.8	E. 1,629,497.7	
NAD'83 GEO.	LAT. (N) 39.789952	LONG. (W) 80.708379	
NAD'83 UTM (M)	N. 4,404,141.6	E. 525,141.2	



LINE	BEARING	DISTANCE
L1	S 59°40' E	5404.73'
L2	S 47°55' E	6567.11'
L3	S 53°57' W	708.36'
L4	S 61°04' W	1737.36'

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	145.94'	144.25'	S 15°08' W	139.79'
C2	471.81'	1281.45'	S 19°57' E	469.15'

TAG	SURFACE OWNER	PARCEL	ACRES
A	C & A HAGEDORN	9-7-3	203.07
B	PAUL STEVEN ALLEN ET UX	9-4-10	172.30
C	RONALD MASON ET UX	9-6-5	92.85
D	ROBERT CARNEY ET UX	9-6-4	118.17
E	J. F. CROW ESTATE ET AL.	9-6-9	131.80
F	RONALD & RUBY MASON	9-6-12	59
G	RAY HARTZELL ET AL.	9-6-13	34.50
H	KENNETH MASON ESTATE	9-6-14	19.37

TAG	SURFACE OWNER	PARCEL	ACRES
I	J. F. CROW ESTATE ET AL.	9-6-15	55.23
J	J. F. CROW ESTATE ET AL.	9-6-11	7/8
K	J. F. CROW ESTATE ET AL.	9-6-10	64.01
F	RONALD & RUBY MASON	9-6-12	59
G	RAY HARTZELL ET AL.	9-6-13	34.50
H	KENNETH MASON ESTATE	9-6-14	19.37
I	J. F. CROW ESTATE ET AL.	9-6-15	55.23
J	J. F. CROW ESTATE ET AL.	9-6-11	7/8
K	J. F. CROW ESTATE ET AL.	9-6-10	64.01
L	RALPH MARTIN TAYLOR	9-10-10	2.23
M	J. F. CROW ESTATE ET AL.	9-10-9	17.14
N	J. F. CROW ESTATE ET AL.	9-10-11	60
O	J. F. CROW ESTATE ET AL.	9-6-8	53.33
P	RHDK INVESTMENTS	9-11-4	53
Q	RAY A WHETZAL JR ET AL.	9-11-3	33.33
R	RAY A WHETZAL JR ET AL.	9-10-12	36.51
S	RAY A WHETZAL JR ET AL.	9-10-13	71.119
T	RAY A WHETZAL JR ET AL.	9-11-5	106.89
U	MARGARET FOX LIFE	9-11-2	84.378

SLS
Land & Energy Development
Solutions from the ground up.
P.O. Box 150 • 12 Vantom Drive • Glenville, WV 25851 • (304) 462-6634
www.sls-wv.com

P.S. 849 *C. Victor Moyers*

VICTOR MOYERS
LICENSED
No. 849
STATE OF
WEST VIRGINIA
PROFESSIONAL SURVEYOR

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

LEGEND

- UNIT BOUNDARY LEASED TRACTS INSIDE
- UNIT BOUNDARY
- DEEP WELL LATERAL WITHIN 3000'
- SURFACE LINE
- WELL LATERAL
- 400' OFFSET LINE
- 500' OFFSET LINE
- TIE LINE
- CREEK
- ROAD
- COUNTY ROUTE
- PROPOSED WELL
- EXISTING WELL
- PERMITTED WELL
- TAX MAP-PARCEL 00-00
- LEASE # (SEE PGS. 2 & 3)
- SURFACE OWNER (SEE TABLE) (A)

SCALE 1" = 2000' FILE NO. 8703PAD12HUR.dwg
DATE OCTOBER 29, 20 18
REVISED SEPTEMBER 6, 20 19
OPERATORS WELL NO. HEAVEN HILL 2W-12HU
API WELL NO. 47 - 051 - 1952
NO. STATE COUNTY PERMIT

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

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

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

**TUG HILL OPERATING
WELL 12HU
UTICA UNIT - 575.54 AC. ±
HEAVEN HILL SW LEASE**

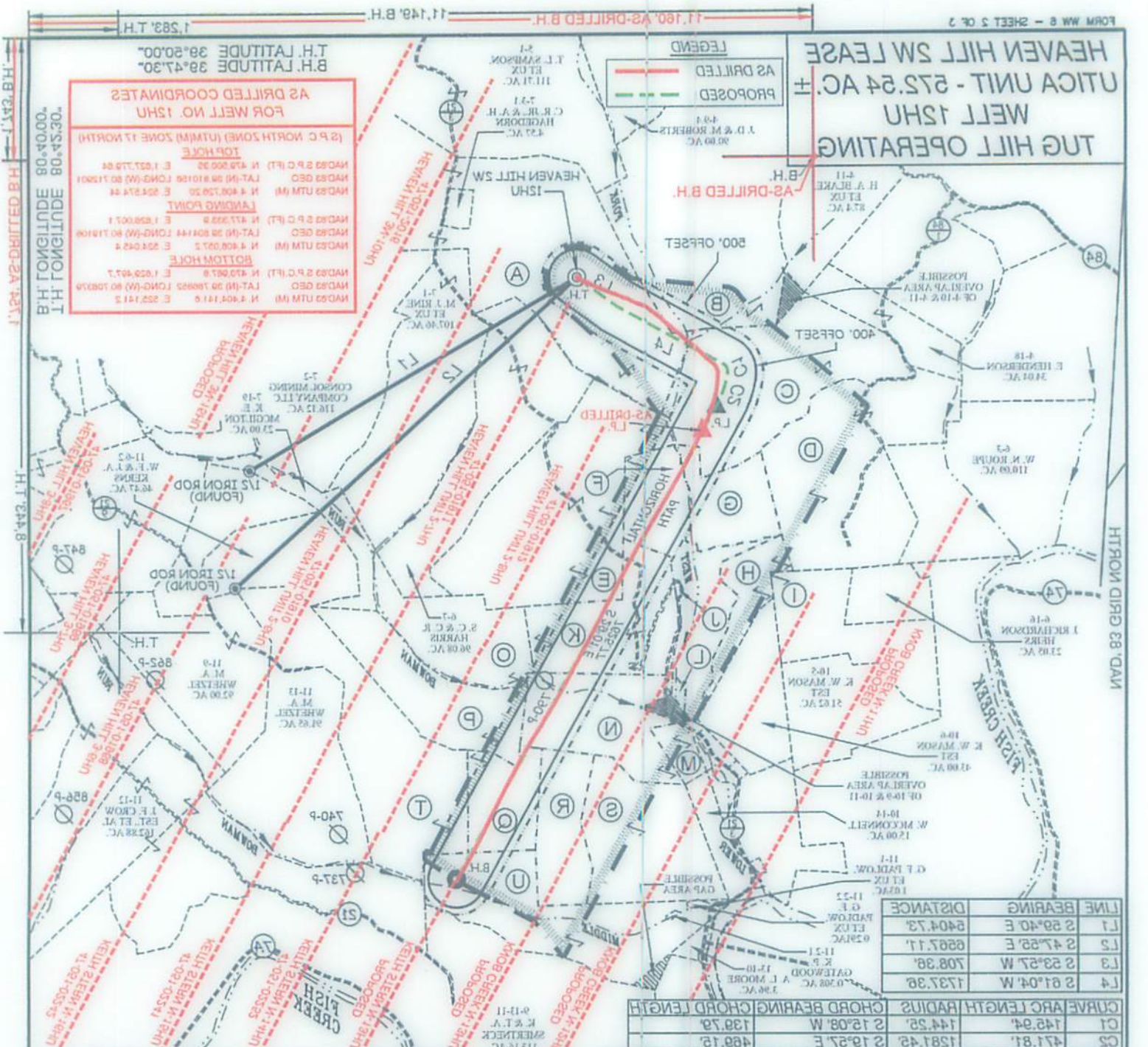
B.H. LATITUDE 39°47'30"
T.H. LATITUDE 39°50'00"

**AS DRILLED COORDINATES
FOR WELL NO. 12HU**

TOP HOLE
(2 P.C. NORTH ZONE) (UTM) (ZONE 17 NORTH)
NAD83 S.P.C. (FT) N 470,500.32 E 1,527,719.84
NAD83 GEO. LAT. (N) 39.810158 LONG. (W) 80.719011
NAD83 UTM (M) N 4,408,758.20 E 524,274.44

LANDING POINT
NAD83 S.P.C. (FT) N 471,997.3 E 1,529,001.1
NAD83 GEO. LAT. (N) 39.804144 LONG. (W) 80.719108
NAD83 UTM (M) N 4,408,907.2 E 524,042.4

BOTTOM HOLE
NAD83 S.P.C. (FT) N 470,987.8 E 1,529,497.7
NAD83 GEO. LAT. (N) 39.798822 LONG. (W) 80.708341
NAD83 UTM (M) N 4,404,144.8 E 524,144.4



LINE	BEARING	DISTANCE
L1	S 59°40' E	840.73'
L2	S 47°58' E	850.71'
L3	S 53°57' W	708.38'
L4	S 81°04' W	1737.38'

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	145.94'	144.25'	S 12°08' W	139.75'
C2	471.81'	1281.45'	S 12°57' E	489.15'

TAG	SURFACE OWNER	ACRES
A	C & HAGEDORN	202.07
B	PAUL STEVEN ALLEN ET UX	172.30
C	RONALD MASON ET UX	52.82
D	ROBERT CARNY ET UX	118.17
E	J. F. CROW ESTATE ET AL.	171.80
F	RONALD & RUBY MASON	24.20
G	RAY HARNETT ET AL.	19.72
H	KENNETH MASON ESTATE	7.8
I	J. F. CROW ESTATE ET AL.	32.32
J	J. F. CROW ESTATE ET AL.	7.8
K	J. F. CROW ESTATE ET AL.	64.01
L	RALPH MARTIN TAYLOR	2.72
M	J. F. CROW ESTATE ET AL.	17.14
N	J. F. CROW ESTATE ET AL.	60
O	J. F. CROW ESTATE ET AL.	32.32
P	RHDK INVESTMENTS	23
Q	RAY A WHEATZ JR ET AL.	32.32
R	RAY A WHEATZ JR ET AL.	30.81
S	RAY A WHEATZ JR ET AL.	71.19
T	RAY A WHEATZ JR ET AL.	106.89
U	MARGARET FOX LIFE	84.38

Land & Energy Development
Solutions from the ground up.
P.O. Box 100 • 12 Western Drive • Dallas, TX 75241 • (214) 423-6424
www.landenergy.com

P.S. 849
C. Victor Moyers



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

(2 P.C. NORTH ZONE) (UTM) (ZONE 17 NORTH)
NAD83 S.P.C. (FT) N 470,500.32 E 1,527,719.84
NAD83 GEO. LAT. (N) 39.810158 LONG. (W) 80.719011
NAD83 UTM (M) N 4,408,758.20 E 524,274.44

LANDING POINT
NAD83 S.P.C. (FT) N 471,997.3 E 1,529,001.1
NAD83 GEO. LAT. (N) 39.804144 LONG. (W) 80.719108
NAD83 UTM (M) N 4,408,907.2 E 524,042.4

BOTTOM HOLE
NAD83 S.P.C. (FT) N 470,987.8 E 1,529,497.7
NAD83 GEO. LAT. (N) 39.798822 LONG. (W) 80.708341
NAD83 UTM (M) N 4,404,144.8 E 524,144.4

SCALE 1" = 5000'
FILE NO. 8703PAD12SHUR 4WB

DATE OCTOBER 29, 2018
REVISED SEPTEMBER 6, 2018

OPERATORS WELL NO. HEAVEN HILL SW-12HU
WELL 47 - 051 - 1952
PERMIT COUNTY STATE

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

LEGEND

UNIT BOUNDARY (Dashed line)

LEASED TRACTS INSIDE (Dotted line)

UNIT BOUNDARY (Dashed line)

DEEP WELL LATERAL (Red dashed line)

WITHIN 3000' SURFACE LINE (Red dashed line)

WELL LATERAL (Red dashed line)

400' OFFSET LINE (Red dashed line)

500' OFFSET LINE (Red dashed line)

THE LINE (Red dashed line)

CREEK (Blue line)

ROAD (Black line)

COUNTY ROUTE (Black line with 'R')

PROPOSED WELL (Red circle with 'P')

EXISTING WELL (Black circle with 'E')

PERMITTED WELL (Black circle with 'P')

TAX MAP-PARCEL (Black circle with 'A')

LEASE # (SEE P.G. 2 & 3)

SURFACE OWNER (SEE TABLE)

00-00 (A)

DESIGNATED AGENT
CT CORPORATION SYSTEM
DIANNA STAMPER
ADDRESS 8400 D BIG TYLER ROAD
CHARLESTON, WV 25313

WELL OPERATOR TUG HILL OPERATING, LLC
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 800
FORT WORTH, TX 76102

