



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street, S.E.
Charleston, WV 25304
(304) 926-0450
fax: (304) 926-0452

Harold D. Ward, Cabinet Secretary
www.dep.wv.gov

Tuesday, January 10, 2023
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

NORTHEAST NATURAL ENERGY LLC
707 VIRGINIA STREET EAST
STE 1200
CHARLESTON, WV 25301

Re: Permit Modification Approval for SULLIVAN 9H
47-061-01920-00-00

Change Lateral Direction/ Change Leases

NORTHEAST NATURAL ENERGY LLC

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

If there are any questions, please feel free to contact me at (304) 926- 0450.


James A. Martin
Chief

Operator's Well Number: SULLIVAN 9H
Farm Name: ALAN SULLIVAN
U.S. WELL NUMBER: 47-061-01920-00-00
Horizontal 6A New Drill
Date Modification Issued: 01/10/2023

Promoting a healthy environment.

01/20/2023

CK # 85739
\$ 5000⁰⁰
EXP Mod

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator: Northeast Natural Energy 494498281 Monongalia Clay Grant Town
Operator ID County District Quadrangle

2) Operator's Well Number: 9H Well Pad Name: Sullivan

3) Farm Name/Surface Owner: Alan Sullivan Public Road Access: Route 27/1

4) Elevation, current ground: 1,520' Elevation, proposed post-construction: 1,476'

5) Well Type (a) Gas Oil Underground Storage

Other

(b) If Gas Shallow Deep

Horizontal

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus, 8,247', 87', 5200 psi

8) Proposed Total Vertical Depth: 8,247'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 22,098'

11) Proposed Horizontal Leg Length: 13,145'

12) Approximate Fresh Water Strata Depths: 50', 1,262'

13) Method to Determine Fresh Water Depths: Drillers logs from offset wells

14) Approximate Saltwater Depths: 2,050', 2,580'

15) Approximate Coal Seam Depths: 500', 1,260'

16) Approximate Depth to Possible Void (coal mine, karst, other): NA

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes No

(a) If Yes, provide Mine Info: Name: N/A
Depth: _____
Seam: _____
Owner: _____

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Environmental Protection

Digitally signed by
Gayne Knitowski
Date: 2023.01.06
16:29:27 -05'00'

18)

CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	24"	New	NA	NA	100	100 ✓	GTS
Fresh Water	13-3/8"	New	J-55	54.5	1,505	1,475* ✓	CTS
Coal							
Intermediate	9-5/8"	New	J-55	36	2,680	2,650 ✓	CTS
Production	5-1/2"	New	P-110	20	22,098	22,068 ✓	5,194
Tubing	2-7/8"	New	P-110	6.5	NA		
Liners							

*depth to cover Red Rock formation

Gayne Knitowski
Digitally signed by Gayne Knitowski
Date: 2023.01.06 16:29:50 -05'00'

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	24"	28	0.375	NA	NA	Type 1	1.18
Fresh Water	13-3/8"	17-1/2"	0.380	2,730	500	Class A or L ✓	1.19
Coal							
Intermediate	9-5/8"	12-3/8"	0.395	3,520	2800	Class A or L ✓	1.19
Production	5-1/2"	8-3/4"	0.361	14,360 ✓	11,400	50:50 POZ	1.07
Tubing	2-7/8"	NA	0.217	13,870	NA	NA	NA
Liners							

PACKERS

Kind:				<p>RECEIVED Office of Oil and Gas JAN 09 2023 WV Department of Environmental Protection</p>
Sizes:				
Depths Set:				

19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Utilize auger rig to set cellar & conductor. The conductor will be grouted with cement to surface. Mobilize top hole drilling rig. Drill surface section on air. Run surface (freshwater & coal string) casing to desired depth. The surface section will not penetrate sea level. Surface casing will be cemented to surface. Drill intermediate section on air. Run intermediate casing to desired depth. Intermediate casing will be cemented to surface. Drill on air the production section to the start of the curve (KOP). The well will be loaded with synthetic oil base drilling mud (SOBM). Demobilize top hole rig. Mobilize horizontal drilling rig. Finish drilling the production section utilizing MWD surveys and geosteering practices to maintain the wellbore in the Marcellus shale and prevent anti-collision. Production casing will be ran to TD and cement top will be inside the intermediate casing.

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

A cement bond log will determine the top of production casing cement. The production casing will be pressure tested. The hydraulic fracturing equipment will then open the toe sleeves and begin pumping the first stage. The plug-and-perf method will be used for the remaining stages. The max anticipated pressure during frac is 11,200psi and a max rate of 90bpm. After frac, the drillout rig will drill all plugs out of the well. Land production tubing at desired depth. Then flowback well until ready to turn in line to production facilities.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 28.65

22) Area to be disturbed for well pad only, less access road (acres): 15.32

23) Describe centralizer placement for each casing string:

Surface: shoe track & every 3rd joint to surface
Intermediate: shoe track & every 3rd joint to surface
Production: Rigid bow centralizers at shoe track & every other joint in the lateral to KOP. Bow springs from KOP to surface every third joint.

24) Describe all cement additives associated with each cement type:

Surface: Class A or L Cement + Max 3% bwoc Calcium Chloride Fresh Water blend.
Intermediate: Class A or L Cement + Max 3% bwoc Calcium Chloride + Fresh Water.
Production: 50:50 Poz (Fly Ash & Class A or L) plus additives such as defoamer, retarder, & fluid loss to meet well specific requirements

25) Proposed borehole conditioning procedures:

Surface & intermediate on air will utilize high volumetric flow rates of air to ensure the wellbore is clean prior to TOH.
Production section will utilize synthetic oil based drilling mud to properly clean the wellbore. At TD, pump rate and rotation will be maximized and tripping will not begin until shakers flow clean.
Production casing will be circulated prior to cementing to ensure a prepared wellbore for cement.

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*Note: Attach additional sheets as needed.

Well Location Plat
Page 4 Cross Section

Northeast Natural Energy, LLC
Applicant / Well Operator Name

DEP ID#

Sullivan Pad
Monongalia Co., WV
WELL DEP Datum @ 1476.0usft (Original Well Elev)

Well #
Sullivan 9H



WELL PLAN
Operator Name: **Northeast Natural Energy**

Well/Farm Name: **Sullivan Pad**

DEP
Use
Only

Permit #

NOTES:

Name	TVD	Latitude	Longitude	TMD
Sullivan-9H_SHL	0.0	39.6147604	-80.2232024	0
Sullivan-9H_KOP	4000.0	39.6147604	-80.2232024	4000
Sullivan-9H_LP	8247.0	39.6126161	-80.2266873	8952.8
Sullivan-9H_PBHL	8247.0	39.6425010	-80.2528515	22098.1

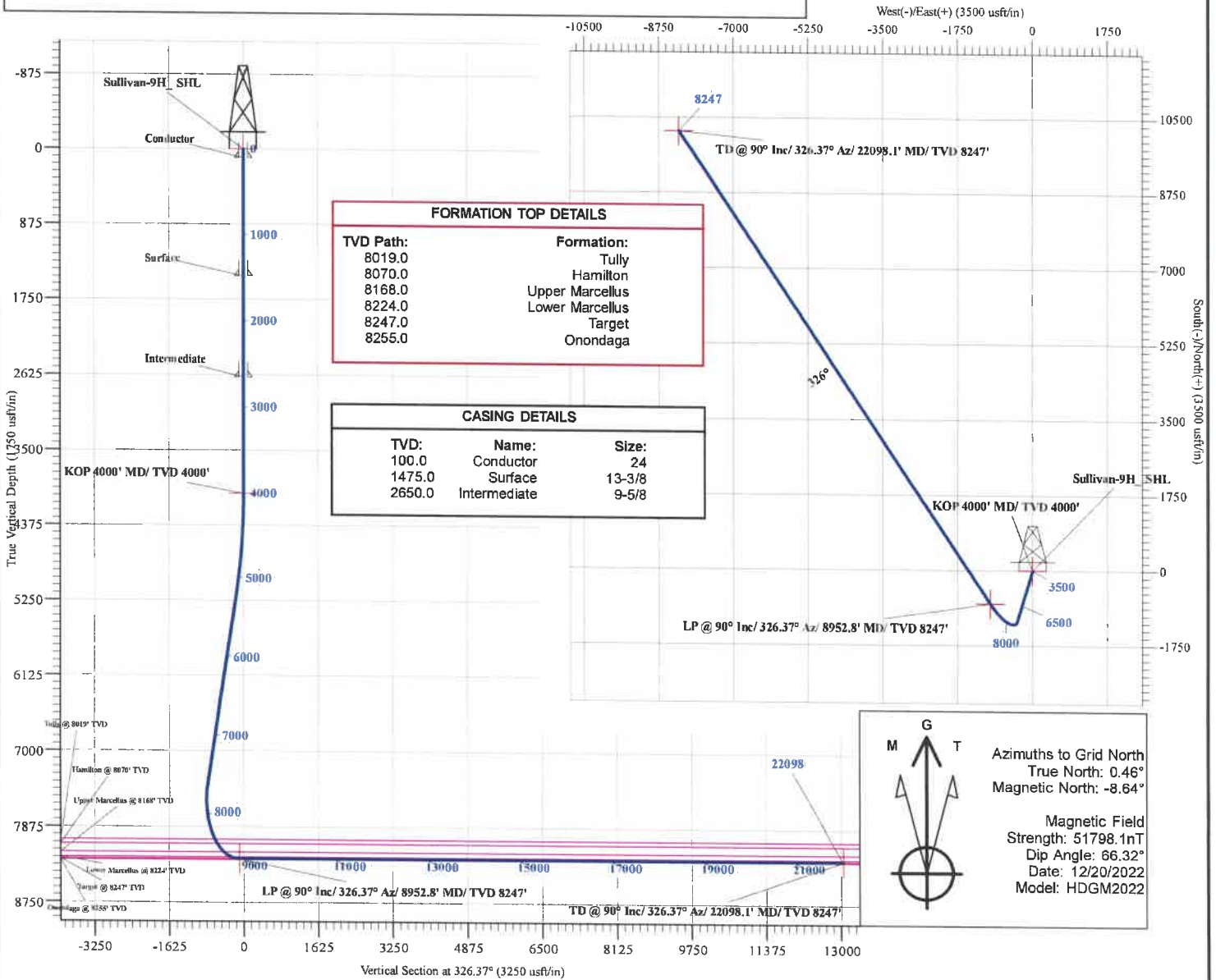
SECTION DETAILS

MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	V Sect	Annotation
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
4000.0	0.00	0.00	4000.0	0.0	0.0	0.00	0.00	0.0	KOP 4000' MD/ TVD 4000'
5200.2	24.00	196.91	5165.4	-237.0	-72.1	2.00	196.91	-157.5	Hold 24" Inc
7640.5	24.00	196.91	7394.6	-1186.9	-360.9	0.00	0.00	-788.4	Curve KOP 8"/100
8952.8	90.00	326.37	8247.0	-773.1	-988.0	8.00	126.94	-96.5	LP @ 90° Inc/ 326.37° Az
22098.1	90.00	326.37	8247.0	10172.5	-8267.6	0.00	0.00	13048.8	TD @ 90° Inc/ 326.37° Az

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Sullivan 9H AREA OF REVIEW

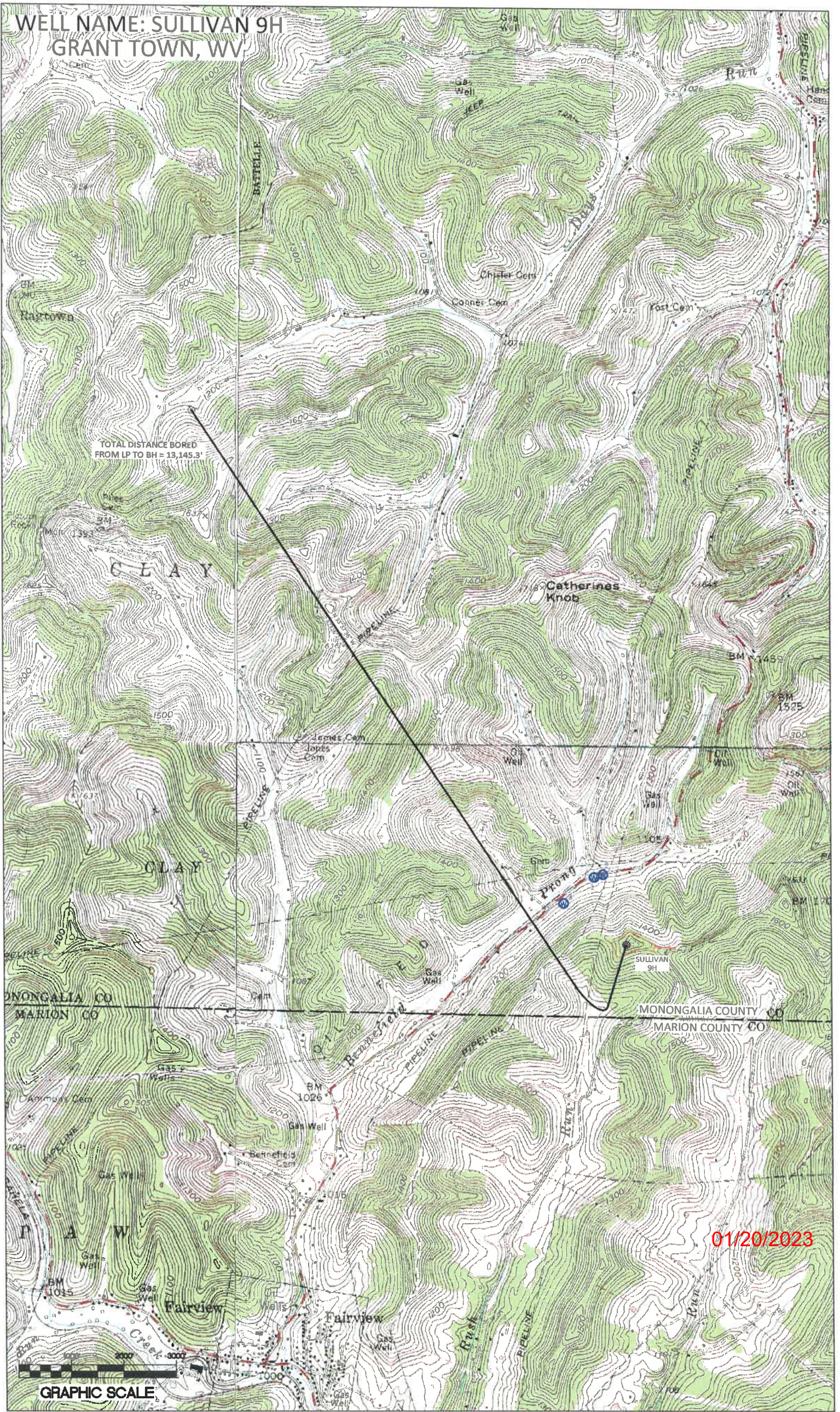
API Number	Well Name	Well Number	Operator	Latitude (NAD 83)	Longitude (NAD 83)	TMP	TVD	Comments
✓ 061-00633	Clifford O. Yost	20	Pennzoil Company	39.614231	-80.229038	4-26-30	2234'	Plugged 8/3/88
✓ 061-00629	Bobby Joe Yost	19	Pennzoil Company	39.614701	-80.230331	4-26-30	2031'	Plugged 7/28/88
✓ 061-00463	John & Rose Fluaharty	5	East Resources Inc.	39.616671	-80.22988	4-26-18	1926'	Plugged 6/16/11
✓ 061-01650	Kenneth Albert	NA	Eastern Associated / Peabody Coal Company	39.620416	-80.23411	4-26-12	NA	Plugged 12/5/12
✓ 061-01641	Kenneth Albert	4	Eastern Associated / Peabody Coal Company	39.621985	-80.234673	4-26-12	NA	Plugged 4/30/12
✓ 061-01639	Kenneth Albert	NA	Eastern Associated / Peabody Coal Company	39.622231	-80.23707	4-26-12	NA	Plugged 4/25/12
✓ 061-00470	Kenneth Albert	5	East Resources Inc.	39.622091	-80.237035	4-26-12	NA	Plugged 9/8/05
✓ 061-01640	Kenneth Albert	NA	Eastern Associated / Peabody Coal Company	39.62368	-80.236277	4-26-12	NA	Plugged 5/16/12
✓ 061-01630	Michael Latocha	4	Eastern Associated / Peabody Coal Company	39.625701	-80.236351	4-19-49	NA	Plugged 6/24/11
✓ 061-01629	Edith Darrah	7	Eastern Associated / Peabody Coal Company	39.626475	-80.238542	4-19-24	NA	Plugged 9/14/11
✓ 061-01628	Edith Darrah	8	Eastern Associated / Peabody Coal Company	39.628074	-80.238085	4-19-24	3523'	Plugged 12/28/11
✓ 061-01612	Edith Darrah	NA	Eastern Associated / Peabody Coal Company	39.629732	-80.240099	4-19-25	NA	NA
✓ 061-00560	J Eddy	8	Pennzoil Company	NA	NA	4-19-26	NA	NA
✓ 061-00105	Dolly Wilson	1	Eastern Associated / Peabody Coal Company	39.637574	-80.249421	4-19-7	3661'	Plugged 4/16/09
✓ 061-00062	Edith Darrah	NA	Eastern Associated / Peabody Coal Company	39.629732	-80.240099	4-19-1.1	NA	NA

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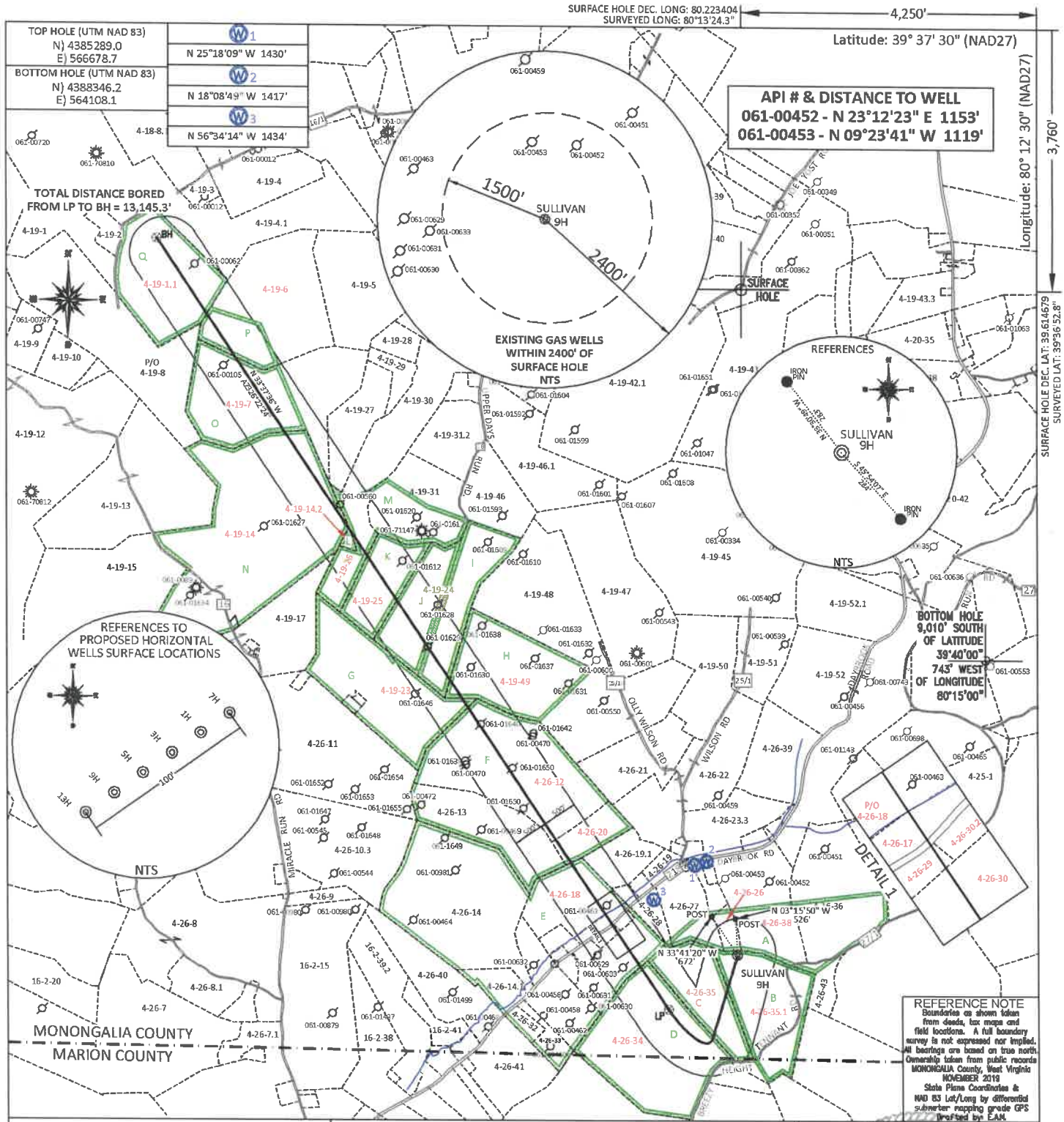
WELL NAME: SULLIVAN 9H
GRANT TOWN, WV

TOTAL DISTANCE BORED
FROM LP TO BH = 13,145.3'



01/20/2023

GRAPHIC SCALE



API # & DISTANCE TO WELL
061-00452 - N 23°12'23" E 1153'
061-00453 - N 09°23'41" W 1119'

REFERENCE NOTE
 Boundaries as shown taken from deeds, tax maps and field locations. A full boundary survey is not expressed nor implied. All bearings are based on true north. Ownership taken from public records MONONGALIA County, West Virginia NOVEMBER 2019
 State Plane Coordinates & NAD 83 Lat/Long by differential submeter mapping grade GPS provided by EAM

FILE #: NNE20
 DRAWING #: 3047
 SCALE: PLAT: 1" = 2000'
TICK: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1/200
 PROVEN SOURCE OF ELEVATION: SUBMETER MAPPING GRADE GPS

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 DEPARTMENT OF ENVIRONMENTAL PROTECTION.
 Signed: [Signature]
 L.L.S. #2124 : Ernest J. Benchek III



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP
 OFFICE OF OIL & GAS
 601 57TH STREET
 CHARLESTON, WV 25304
 Well Type: Oil Waste Diposal Production Deep
 Gas Liquid Injection Storage Shallow
 WATERSHED: UPPER MONONGAHELA RIVER
 COUNTY/DISTRICT: MONONGALIA / CLAY
 SURFACE OWNER: ALAN SULLIVAN
 OIL & GAS ROYALTY OWNER: ALAN SULLIVAN
 LEASE NUMBERS: _____
 DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
 CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY): _____
 TARGET FORMATION: MARCELLUS
 WELL OPERATOR: NORTHEAST NATURAL ENERGY LLC
 ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200
 CITY: CHARLESTON STATE: WV ZIP CODE: 25301

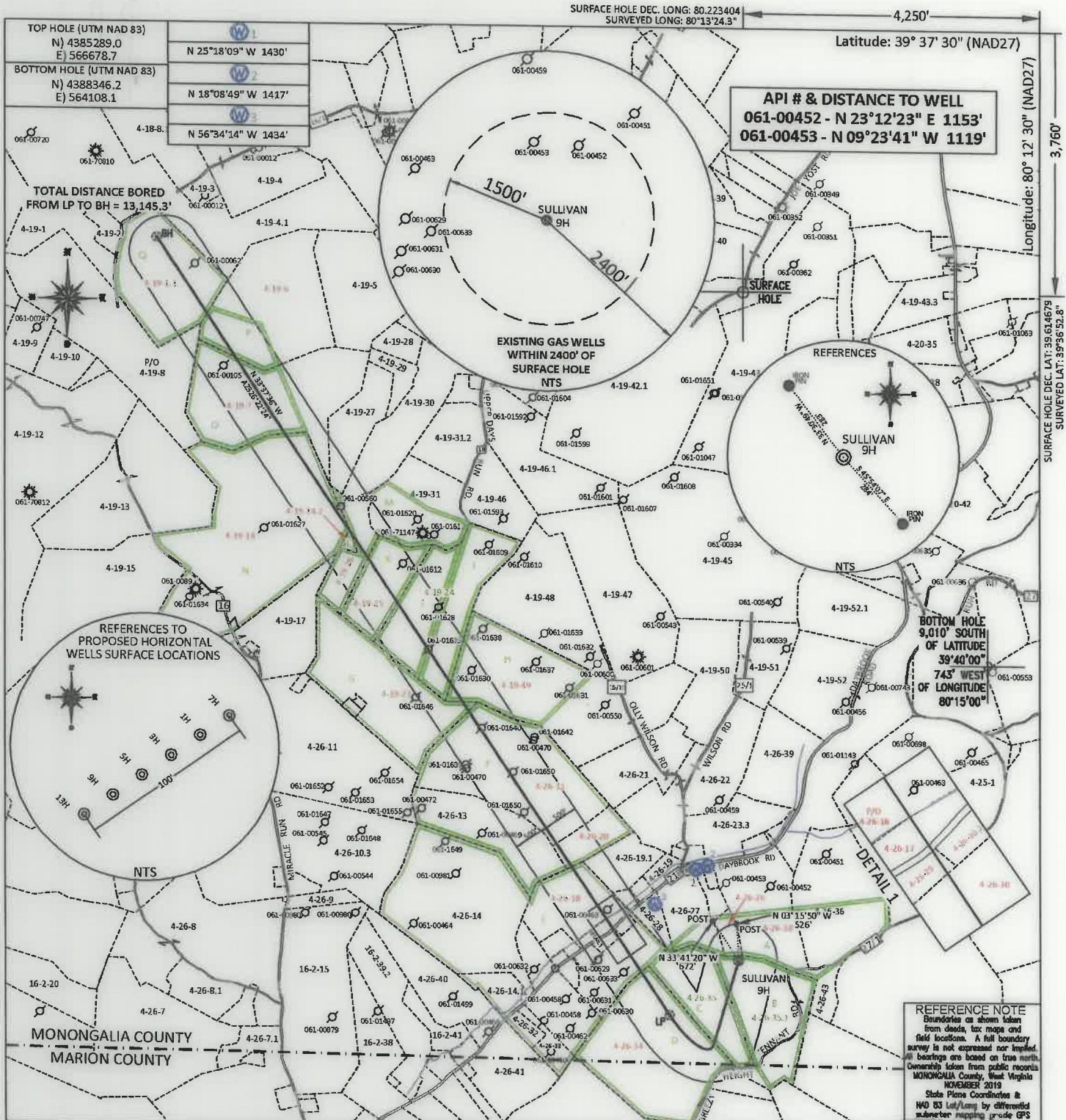
DATE: JANUARY 6, 2023
 OPERATOR'S WELL #: SULLIVAN 9H
 API WELL #: 47 61 01920
 STATE COUNTY PERMIT
 CURRENT ELEVATION: 1,520'
 PROPOSED ELEVATION: 1,476.4'
 QUADRANGLE: GRANT TOWN
 ACREAGE: 870.94 +/-
 ACREAGE: 25.870 +/- **01/20/2023**
 ESTIMATED DEPTH: TVD: 8,247' TMD: 22,098.1'
 DESIGNATED AGENT: JOHN ADAMS
 ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200
 CITY: CHARLESTON STATE: WV ZIP CODE: 25301

4-19-14	PENNY S QUICKLE
4-19-23	BOYD & MARY STARKEY ESTATE
4-26-35	RANDY LEE & TRINA TENNANT
4-26-34	SHIRLEY J NEELY, DEANNA M FRAZIER, DONNA J WALDEN & DARRIN NEELY
4-26-18	ROSE MARIE FLUHARTY
4-26-30	THOMAS R & LISA A LUZADER
4-26-38	ADAM CLAY DARRAH
4-26-30.2	WAYNE WHIPKEY
4-26-17	ROSE MARIE FLUHARTY
4-26-29	WAYNE WHIPKEY
4-19-14.2	PENNY S QUICKLE
4-19-26	CHARLES W MOORE; JASON T & KIRSTON KARSON (LIFE)
4-19-24	EDITH L DARRAH
4-19-25	SHIRLEY L MOORE ESTATE
4-19-49	ROCKY & CATHY J BARR
4-26-12	KENNETH W & RUTH E ALBERT
4-26-35.1	ALAN SULLIVAN
4-26-26	NNE MIDSTREAM LLC
4-26-20	KENNETH W & RUTH E ALBERT
4-19-6	JIMMY R & PAMELA K TENNANT; RAY & ROXANA CAHILL
4-19-7	STEPHEN R WILSON, ET AL
4-19-1.1	KEMBLE D TATE

LEASE INDEX			
A	WV-061-000160-001-ACT	I	WV-061-003931-001
B	WV-061-005448-002	J	WV-061-003931-011
C	WV-061-000160-001-ACT	K	WV-061-003931-002
D	WV-061-000165-001 - LA	L	WV-061-000160-001-ACT
E	WV-061-000160-001-ACT	M	WV-061-003931-011
F	WV-061-005998-001	N	WV-061-000160-001-ACT
G	WV-061-004797-039	O	WV-061-004792-004
H	WV-061-000160-001-ACT	P	WV-061-005788-001
		Q	WV-061-005876-002

01/20/2023


FILE #: <u>NEE20</u>	DATE: <u>JANUARY 6, 2023</u>
DRAWING #: <u>3047</u>	OPERATOR'S WELL #: <u>SULLIVAN 9H</u>
SCALE: <u>N/A</u>	API WELL #: <u>47</u> <u>61</u> <u>01920</u> STATE COUNTY PERMIT

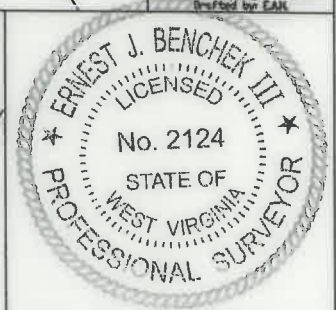


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 CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY): _____

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 CITY: CHARLESTON STATE: WV ZIP CODE: 25301

01/20/2023

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
See Attached				

**Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

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The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: Northeast Natural Energy
 By: Hollie Medley *Hollie Medley*
 Its: Regulatory Manager

WW-6A1 Form

Operators Well No. Sullivan 9H

Tract	Lease Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book	Page
A	WV-061-000160-001-ACT	EQT Production Company	Northeast Natural Energy, LLC	12.5% Royalty or More	1775	44
B	WV-061-005488-002	Alan Sullivan	Northeast Natural Energy, LLC	12.5% Royalty or More	1772	466
C	WV-061-000160-001-ACT	EQT Production Company	Northeast Natural Energy, LLC	12.5% Royalty or More	1775	44
D	WV-061-000165-001 - LA	EQT Production Company	Northeast Natural Energy, LLC	12.5% Royalty or More	1786	405
E	WV-061-000160-001-ACT	EQT Production Company	Northeast Natural Energy, LLC	12.5% Royalty or More	1775	44
F	WV-061-005998-001	Ridgetop Appalachia, LLC	Northeast Natural Energy, LLC	12.5% Royalty or More	1785	204
G	WV-061-004797-039	Clarence Dean Sharp	Northeast Natural Energy, LLC	12.5% Royalty or More	1630	263
	WV-061-003976-021	Charlotte A. Britto	Northeast Natural Energy, LLC	12.5% Royalty or More	1638	508
	WV-061-005770-001	NNE (Equinor USA Onshore Properties, Inc. Interest)	Northeast Natural Energy, LLC	12.5% Royalty or More	1738	798
	WV-061-004797-015	David Marshall Williams	Northeast Natural Energy, LLC	12.5% Royalty or More	1611	272
	WV-061-004797-037	Darrell Conaway a/k/a Henry D. Conaway	Northeast Natural Energy, LLC	12.5% Royalty or More	1619	832
	WV-061-004797-073	Christopher Louis Darnell	Northeast Natural Energy, LLC	12.5% Royalty or More	1653	146
	WV-061-004797-060	Charles Michael Morrison	Northeast Natural Energy, LLC	12.5% Royalty or More	1650	210
	WV-061-004797-059	Candace Ann Morrison Bunner	Northeast Natural Energy, LLC	12.5% Royalty or More	1650	208
	WV-061-004797-063	Charles Arthur Morrison	Northeast Natural Energy, LLC	12.5% Royalty or More	1650	216
	WV-061-003976-010	Danny J. Yost	Northeast Natural Energy, LLC	12.5% Royalty or More	1650	216
	WV-061-003976-008	Phillip D. Yost	Northeast Natural Energy, LLC	12.5% Royalty or More	1557; 1728	476; 731
	WV-061-003976-014	Randy D. Yost	Northeast Natural Energy, LLC	12.5% Royalty or More	1557; 1729	478; 784
	WV-061-003915-005	Gerald Wayne Stiles	Northeast Natural Energy, LLC	12.5% Royalty or More	1564; 1727	402; 556
	WV-061-003976-007	David Yost	Northeast Natural Energy, LLC	12.5% Royalty or More	1568; 1727	374; 272%
	WV-061-003976-018	Dennis L. Yost and Rhonda A. Yost	Northeast Natural Energy, LLC	12.5% Royalty or More	1576; 1727	849; 317
	WV-061-003976-009	Diana L. Fulmer	Northeast Natural Energy, LLC	12.5% Royalty or More	1577; 1727	24; 316
	WV-061-003976-015	Melinda P. Heidekat	Northeast Natural Energy, LLC	12.5% Royalty or More	1557; 1728	474; 730
	WV-061-003976-006	Jill Tennant, f/k/a Jill Smith	Northeast Natural Energy, LLC	12.5% Royalty or More	1568; 1727	323; 557
	WV-061-003976-017	Nancy A. Maggard	Northeast Natural Energy, LLC	12.5% Royalty or More	1564; 1727	406; 555
	WV-061-003976-011	Jody Lynn Maley	Northeast Natural Energy, LLC	12.5% Royalty or More	1567; 1729	761; 440
	WV-061-003976-005	Michael G. Phillips	Northeast Natural Energy, LLC	12.5% Royalty or More	1560; 1728	262; 732
	WV-061-003976-004	LaNelle C. Stiles	Northeast Natural Energy, LLC	12.5% Royalty or More	1567; 1727	810; 554
	WV-061-003976-016	Barry D. Yost	Northeast Natural Energy, LLC	12.5% Royalty or More	1567; 1727	805; 568
	WV-061-003976-013	Connie S. (Yost) Copeland	Northeast Natural Energy, LLC	12.5% Royalty or More	1570; 1729	107; 439
	WV-061-003976-012	Daie Lynn Moore	Northeast Natural Energy, LLC	12.5% Royalty or More	1567	763
	WV-061-003976-012	Danny Keith Moore	Northeast Natural Energy, LLC	12.5% Royalty or More	1560; 1728	260; 733
	WV-061-003976-012	David Wayne Moore	Northeast Natural Energy, LLC	12.5% Royalty or More	1560; 1728	260; 733
	WV-061-003976-012	Diane Lynn Long	Northeast Natural Energy, LLC	12.5% Royalty or More	1560; 1728	260; 733
	WV-061-003976-012	Donny Lee Moore, a/k/a Donny Lee Moore	Northeast Natural Energy, LLC	12.5% Royalty or More	1560; 1728	260; 733
	WV-061-003976-002	Gary L. Moore	Northeast Natural Energy, LLC	12.5% Royalty or More	1567; 1727	71; 315
	WV-061-003976-002	Kenneth R. Moore	Northeast Natural Energy, LLC	12.5% Royalty or More	1567; 1727	71; 315
	WV-061-003976-002	Linda K. Statler	Northeast Natural Energy, LLC	12.5% Royalty or More	1567; 1727	71; 315
	WV-061-003976-002	Susan L. Heiskell	Northeast Natural Energy, LLC	12.5% Royalty or More	1567; 1727	71; 315
	WV-061-003976-019	Freddie D. Moore	Northeast Natural Energy, LLC	12.5% Royalty or More	1568; 1729	325; 785
H	WV-061-000160-001-ACT	EQT Production Company	Northeast Natural Energy, LLC	12.5% Royalty or More	1775	44
I	WV-061-003931-001	Margaret A. Berdine	Northeast Natural Energy, LLC	12.5% Royalty or More	1564	523
	WV-061-002923-001	Ryan C. Ractka	Northeast Natural Energy, LLC	12.5% Royalty or More	1402	615
	WV-061-003931-002	Gary L. Moore	Northeast Natural Energy, LLC	12.5% Royalty or More	1564	516
	WV-061-003931-002	Linda K. Statler	Northeast Natural Energy, LLC	12.5% Royalty or More	1564	516
	WV-061-003931-002	Kenneth R. Moore	Northeast Natural Energy, LLC	12.5% Royalty or More	1564	516
	WV-061-003931-002	Susan L. Heiskell	Northeast Natural Energy, LLC	12.5% Royalty or More	1564	516
	WV-061-003931-008	LaNelle C. Stiles	Northeast Natural Energy, LLC	12.5% Royalty or More	1564	516
	WV-061-003931-007	Jody Lynn Maley	Northeast Natural Energy, LLC	12.5% Royalty or More	1564	531
	WV-061-003931-014	Jill Renee Maley	Northeast Natural Energy, LLC	12.5% Royalty or More	1565	417
	WV-061-003931-019	Kelli D. Wilson	Northeast Natural Energy, LLC	12.5% Royalty or More	1557	756
	WV-061-003931-019	Lorri E. Kuhn	Northeast Natural Energy, LLC	12.5% Royalty or More	1564	526
	WV-061-003931-019	Gary D. Yost	Northeast Natural Energy, LLC	12.5% Royalty or More	1564	526
	WV-061-003931-016	Brett L. Yost	Northeast Natural Energy, LLC	12.5% Royalty or More	1564	526
	WV-061-003931-016	Cheral A. Skinner	Northeast Natural Energy, LLC	12.5% Royalty or More	1564	521
	WV-061-003931-016	Cheral A. Skinner	Northeast Natural Energy, LLC	12.5% Royalty or More	1564	521

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Tract	Lease Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book	Page
	WV-061-003931-016	Kami D. Elliott	Northeast Natural Energy, LLC	12.5% Royalty or More	1564	521
	WV-061-003931-005	Dennis L. Yost	Northeast Natural Energy, LLC	12.5% Royalty or More	1564	529
	WV-061-003931-003	David D. Yost	Northeast Natural Energy, LLC	12.5% Royalty or More	1568	112
	WV-061-003931-006	Michael G. Phillips	Northeast Natural Energy, LLC	12.5% Royalty or More	1568	283
	WV-061-003931-013	Melinda P. Heidekat	Northeast Natural Energy, LLC	12.5% Royalty or More	1557	754
	WV-061-003931-011	Connie Sharon Copeland	Northeast Natural Energy, LLC	12.5% Royalty or More	1562	416
	WV-061-003931-010	Randy D. Yost	Northeast Natural Energy, LLC	12.5% Royalty or More	1562	397
	WV-061-003931-018	Phillip D. Yost	Northeast Natural Energy, LLC	12.5% Royalty or More	1560	255
	WV-061-003931-020	Nancy A. Maggard	Northeast Natural Energy, LLC	12.5% Royalty or More	1567	820
	WV-061-003931-004	Gerald Wayne Stiles	Northeast Natural Energy, LLC	12.5% Royalty or More	1564	513
	WV-061-003931-015	Diana L. Fulps	Northeast Natural Energy, LLC	12.5% Royalty or More	1557	758
	WV-061-003931-012	Linda M. Sutphin	Northeast Natural Energy, LLC	12.5% Royalty or More	1560	264
	WV-061-003915-008	Judith J. Radcliff	Northeast Natural Energy, LLC	12.5% Royalty or More	1559	125
	WV-061-003915-005	James Swiger	Northeast Natural Energy, LLC	12.5% Royalty or More	1560	258
	WV-061-003933-001	Gary S. Williams	Northeast Natural Energy, LLC	12.5% Royalty or More	1567	818
J	WV-061-003931-011	Connie Sharon Copeland	Northeast Natural Energy, LLC	12.5% Royalty or More	1562	416
	WV-061-003931-009	Danny J. Yost	Northeast Natural Energy, LLC	12.5% Royalty or More	1567	425
	WV-061-003931-015	Diana L. Fulps	Northeast Natural Energy, LLC	12.5% Royalty or More	1557	758
	WV-061-003931-010	Randy D. Yost	Northeast Natural Energy, LLC	12.5% Royalty or More	1562	397
	WV-061-003931-020	Nancy A. Maggard	Northeast Natural Energy, LLC	12.5% Royalty or More	1567	820
	WV-061-003931-004	Gerald Wayne Stiles	Northeast Natural Energy, LLC	12.5% Royalty or More	1564	513
	WV-061-003931-008	LaNelle Stiles	Northeast Natural Energy, LLC	12.5% Royalty or More	1564	531
	WV-061-003931-007	Jody Lynn Maley	Northeast Natural Energy, LLC	12.5% Royalty or More	1565	417
	WV-061-003931-014	Jill Renee Maley	Northeast Natural Energy, LLC	12.5% Royalty or More	1557	756
	WV-061-003931-006	Michael G. Phillips	Northeast Natural Energy, LLC	12.5% Royalty or More	1568	283
	WV-061-003931-013	Melinda P. Heidekat	Northeast Natural Energy, LLC	12.5% Royalty or More	1557	754
	WV-061-003931-005	Dennis L. Yost	Northeast Natural Energy, LLC	12.5% Royalty or More	1564	529
	WV-061-003931-003	David D. Yost	Northeast Natural Energy, LLC	12.5% Royalty or More	1568	112
	WV-061-002923-001	Ryan C. Radtka	Northeast Natural Energy, LLC	12.5% Royalty or More	1402	615
K	WV-061-003931-002	Gary L. Moore	Northeast Natural Energy, LLC	12.5% Royalty or More	1564	516
	WV-061-003931-001	Margaret Ann Berdine	Northeast Natural Energy, LLC	12.5% Royalty or More	1564	523
	WV-061-003931-002	Linda K. Statler	Northeast Natural Energy, LLC	12.5% Royalty or More	1564	516
	WV-061-003931-002	Kenneth R. Moore	Northeast Natural Energy, LLC	12.5% Royalty or More	1564	516
	WV-061-003931-002	Susan L. Helskell	Northeast Natural Energy, LLC	12.5% Royalty or More	1564	516
	WV-061-002923-001	Ryan C. Radtka	Northeast Natural Energy, LLC	12.5% Royalty or More	1402	615
L	WV-061-000160-001-ACT	EQT Production Company	Northeast Natural Energy, LLC	12.5% Royalty or More	1775	44
M	WV-061-003931-011	Connie Sharon Copeland	Northeast Natural Energy, LLC	12.5% Royalty or More	1562	416
	WV-061-002923-001	Ryan C. Radtka	Northeast Natural Energy, LLC	12.5% Royalty or More	1402	615
N	WV-061-000160-001-ACT	EQT Production Company	Northeast Natural Energy, LLC	12.5% Royalty or More	1775	44
O	WV-061-004792-004	Gary L. Moore	Northeast Natural Energy, LLC	12.5% Royalty or More	1614	621
	WV-061-004792-004	Donna G. Moore	Northeast Natural Energy, LLC	12.5% Royalty or More	1614	621
	WV-061-004792-004	William Bruce Moore	Northeast Natural Energy, LLC	12.5% Royalty or More	1614	621
	WV-061-004792-004	Samuel Moore	Northeast Natural Energy, LLC	12.5% Royalty or More	1614	621
	WV-061-004792-004	Jason Moore	Northeast Natural Energy, LLC	12.5% Royalty or More	1614	621
	WV-061-004792-027	Derrick Wayne Tennant	Northeast Natural Energy, LLC	12.5% Royalty or More	1666	121
	WV-061-004792-027	Eric Blaine Tennant	Northeast Natural Energy, LLC	12.5% Royalty or More	1666	121
	WV-061-004792-027	Darrin Marie Tennant	Northeast Natural Energy, LLC	12.5% Royalty or More	1666	121
	WV-061-004792-026	Albert George Tennant	Northeast Natural Energy, LLC	12.5% Royalty or More	1657	335
	WV-061-005258-001	David S. Beal	Northeast Natural Energy, LLC	12.5% Royalty or More	1628	631
	WV-061-005258-002	Donald G. Beal	Northeast Natural Energy, LLC	12.5% Royalty or More	1628	633
	WV-061-004792-025	Clifford Eugene Bidwell	Northeast Natural Energy, LLC	12.5% Royalty or More	1657	333
	WV-061-004792-029	James Daniel Krotzer	Northeast Natural Energy, LLC	12.5% Royalty or More	1666	125
	WV-061-005175-004	Karl Von Krotzer	Northeast Natural Energy, LLC	12.5% Royalty or More	1653	154
	WV-061-004792-028	Yolanda Kay Sipe	Northeast Natural Energy, LLC	12.5% Royalty or More	1666	123
	WV-061-005175-002	Linda Kay Sipe	Northeast Natural Energy, LLC	12.5% Royalty or More	1645	250
	WV-061-005301-001	Rachel Haught (Rachel Haught, Trustee of the Stephen Ray Haught Revocable Trust dated December 30, 2014 interest)	Northeast Natural Energy, LLC	12.5% Royalty or More	1650	393
	WV-061-005175-003	Carol Tidwell	Northeast Natural Energy, LLC	12.5% Royalty or More	1643	252
	WV-061-005175-005	Lauren Lynn Luckert	Northeast Natural Energy, LLC	12.5% Royalty or More	1653	156

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Tract	Lease Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book	Page
	WV-061-005788-001	Sandy L. Moore	Northeast Natural Energy, LLC	12.5% Royalty or More	1748	762
	WV-061-001843-009	LeeAnn Shumiloff	Northeast Natural Energy, LLC	12.5% Royalty or More	1688	553
	WV-061-001843-009	Christopher B. Wilson	Northeast Natural Energy, LLC	12.5% Royalty or More	1688	553
	WV-061-001843-009	Susan Brinegar	Northeast Natural Energy, LLC	12.5% Royalty or More	1688	553
	WV-061-001843-009	Justin Wilson	Northeast Natural Energy, LLC	12.5% Royalty or More	1688	553
	WV-061-001843-009	Deken Wilson	Northeast Natural Energy, LLC	12.5% Royalty or More	1688	553
	WV-061-004792-010	John C. Jones	Northeast Natural Energy, LLC	12.5% Royalty or More	1626	90
	WV-061-004792-008	Janet D. Crabtree	Northeast Natural Energy, LLC	12.5% Royalty or More	1626	86
	WV-061-004792-012	Loruma B. Brokaw	Northeast Natural Energy, LLC	12.5% Royalty or More	1626	287
	WV-061-004792-009	Thomas D. Jones	Northeast Natural Energy, LLC	12.5% Royalty or More	1626	88
	WV-061-004792-001	Marsha Catherine Wilson and Gary L. Wilson, as joint tenants with the right of survivorship	Northeast Natural Energy, LLC	12.5% Royalty or More	1513	312
	WV-061-005137-001	Nancy A. Kallas	Northeast Natural Energy, LLC	12.5% Royalty or More	1618	765
	WV-061-005122-001	Pamela Lane Tennant	Northeast Natural Energy, LLC	12.5% Royalty or More	1618	785
	WV-061-005122-003	Patricia Jane Tennant	Northeast Natural Energy, LLC	12.5% Royalty or More	1618	753
	WV-061-005122-002	Kimberly Dawn Huggins Coker	Northeast Natural Energy, LLC	12.5% Royalty or More	1618	787
	WV-061-005122-004	James David Tennant	Northeast Natural Energy, LLC	12.5% Royalty or More	1618	755
	WV-061-004792-019	Tonya Smerdell	Northeast Natural Energy, LLC	12.5% Royalty or More	1647	466
	WV-061-004792-017	Terry Shriver	Northeast Natural Energy, LLC	12.5% Royalty or More	1647	462
	WV-061-004792-018	Tina Bragg	Northeast Natural Energy, LLC	12.5% Royalty or More	1647	464
	WV-061-005122-007	Marcy Annette Taylor	Northeast Natural Energy, LLC	12.5% Royalty or More	1637	744
	WV-061-005122-006	Anthony Scott Taylor	Northeast Natural Energy, LLC	12.5% Royalty or More	1636	257
	WV-061-005277-001	Beth A. Perchuck	Northeast Natural Energy, LLC	12.5% Royalty or More	1637	602
	WV-061-004792-011	Reginald K. Tennant	Northeast Natural Energy, LLC	12.5% Royalty or More	1628	285
	WV-061-005188-001	Robert K. Tennant	Northeast Natural Energy, LLC	12.5% Royalty or More	1621	770
	WV-061-004792-002	Susan L. Stuzen	Northeast Natural Energy, LLC	12.5% Royalty or More	1611	37
	WV-061-005175-001	Jeffrey Dewayne Williams	Northeast Natural Energy, LLC	12.5% Royalty or More	1621	756
	WV-061-004792-005	Kenneth D. Williams	Northeast Natural Energy, LLC	12.5% Royalty or More	1615	585
	WV-061-005170-001	Alan K. Tennant	Northeast Natural Energy, LLC	12.5% Royalty or More	1621	647
	WV-061-005170-001	Douglas D. Tennant	Northeast Natural Energy, LLC	12.5% Royalty or More	1621	647
	WV-061-005170-001	Stephen T. Tennant	Northeast Natural Energy, LLC	12.5% Royalty or More	1621	647
	WV-061-005170-001	Eric G. Tennant	Northeast Natural Energy, LLC	12.5% Royalty or More	1621	647
	WV-061-004792-020	Roxana Cahill	Northeast Natural Energy, LLC	12.5% Royalty or More	1653	181
	WV-061-004792-016	Jimmy Randall Tennant	Northeast Natural Energy, LLC	12.5% Royalty or More	1638	534
	WV-061-004792-015	Pamela Kay Tennant	Northeast Natural Energy, LLC	12.5% Royalty or More	1637	720
	WV-061-004792-014	Billy Ray Tennant	Northeast Natural Energy, LLC	12.5% Royalty or More	1637	718
P	WV-061-005788-001	Sandy L. Moore	Northeast Natural Energy, LLC	12.5% Royalty or More	1748	762
	WV-061-001843-009	LeeAnn Shumiloff	Northeast Natural Energy, LLC	12.5% Royalty or More	1688	553
	WV-061-001843-009	Christopher B. Wilson	Northeast Natural Energy, LLC	12.5% Royalty or More	1688	553
	WV-061-001843-009	Susan Brinegar	Northeast Natural Energy, LLC	12.5% Royalty or More	1688	553
	WV-061-001843-009	Justin Wilson	Northeast Natural Energy, LLC	12.5% Royalty or More	1688	553
	WV-061-001843-009	Deken Wilson	Northeast Natural Energy, LLC	12.5% Royalty or More	1688	553
Q	WV-061-005876-002	Kemble D. Tate	Northeast Natural Energy, LLC	12.5% Royalty or More	1782	291

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