



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

Monday, October 28, 2024
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

EQT PRODUCTION COMPANY
400 WOODCLIFF DR.

CANONSBURG, PA 15317

Re: Permit Modification Approval for VANDERBILT 4H
47-049-02535-00-00

Lateral Extension

EQT PRODUCTION COMPANY

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.

A blue ink signature of James A. Martin, Chief, is written over the name and title.

James A. Martin
Chief

Operator's Well Number: VANDERBILT 4H
Farm Name: LARRY AND TRISHA HIGGINS
U.S. WELL NUMBER: 47-049-02535-00-00
Horizontal 6A New Drill
Date Modification Issued: 10/28/2024

Promoting a healthy environment.

11/01/2024

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

1) Well Operator: EQT Production Company 306686 Marion Manning Glover Gap
Operator ID County District Quadrangle

2) Operator's Well Number: 4H Well Pad Name: Vanderbilt

3) Farm Name/Surface Owner: Larry & Trisha Higgins Public Road Access: CR-1

4) Elevation, current ground: 1,358' (built) Elevation, proposed post-construction: 1,358' (built)

5) Well Type (a) Gas Oil Underground Storage

Other

(b) If Gas Shallow Deep

Horizontal

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus, 7,735', 56', 2,620 psi

8) Proposed Total Vertical Depth: 7,735'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 22,378'

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11) Proposed Horizontal Leg Length: 13,595'

OCT 23 2024

12) Approximate Fresh Water Strata Depths: 253', 504'

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Environmental Protection

13) Method to Determine Fresh Water Depths: Offset Wells - 049-01784, 049-30593, 049-30230

14) Approximate Saltwater Depths: N/A

15) Approximate Coal Seam Depths: 1,181'-1,188'

16) Approximate Depth to Possible Void (coal mine, karst, other): N/A

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: Harrison County Mine
Depth: 1,181'-1,188'
Seam: Pittsburgh
Owner: Harrison County Coal Resources, Inc.

CK# 606099
7500⁰⁹

Kenny Willett 10/23/24

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 | 26 | New | A252 | 85.6 | 53 | 53 | 45 ft^3 / CTS |
| Fresh Water | 13 3/8 | New | J-55 | 54.5 | 1238 | 1238 | 1135 ft^3 / CTS |
| Coal | | | | | | | |
| Intermediate | 9 5/8 | New | J-55 | 36 | 2685 | 2685 | 1035 ft^3 / CTS |
| Production | 6 | New | P-110 | 24 | 22378 | 22378 | 500' above intermediate casing |
| Tubing | | | | | | | |
| Liners | | | | | | | |

| 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 | 26 | 30 | 0.312 | 1000 | 18 | Class A/L | 1.04 - 1.20 |
| Fresh Water | 13 3/8 | 17 1/2 | 0.380 | 2730 | 2184 | Class A/L | 1.04 - 1.20 |
| Coal | | | | | | | |
| Intermediate | 9 5/8 | 12 3/8 - 12 1/4 | 0.352 | 3520 | 2816 | Class A/H/L | 1.04 - 1.20 |
| Production | 6 | 8 3/4 - 8 1/2 | 0.400 | 14580 | 11664 | Class A/H/L | 1.04 - 2.10 |
| Tubing | | | | | | | |
| Liners | | | | | | | |

REC'D
Office of Conservation
OCT 17 2024
WV Department of Environmental Protection

PACKERS

| | | | | |
|-------------|--|--|--|--|
| Kind: | | | | |
| Sizes: | | | | |
| Depths Set: | | | | |

Kenny Willatt

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

Drill and complete a new horizontal well in the Marcellus Formation. Drill the vertical, kick off and drill curve. Drill the lateral in the Marcellus. Cement casing.

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

Hydraulic fracturing is completed in accordance with state regulations using water recycled from previously fractured wells and obtained from freshwater sources. This water is mixed with sand and a small percentage (less than 0.1%) of chemicals (including 15% Hydrochloric acid, friction reducer, biocide, and scale inhibitor), referred to in the industry as a "slickwater" completion. Maximum anticipated internal casing pressure is expected to be approximately 10,000 psi, maximum anticipated treating rates are expected to average approximately 100 bpm. Stage lengths vary from 150 to 300 feet. Average approximately 350,000 gallons of water per stage. Sand sizes vary from 100 mesh to 20/40 mesh. Average approximately 200,000-600,000 pounds of proppant per stage.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 56.80 acres (built)

22) Area to be disturbed for well pad only, less access road (acres): 8.44 acres (built)

23) Describe centralizer placement for each casing string:

- Surface: Bow spring centralizers – One centralizer at the shoe and one spaced every 500’.
- Intermediate: Bow spring centralizers– One centralizer at the shoe and one spaced every 500’.
- Production: One solid body centralizer spaced every other joint from production casing shoe to landing point. One solid body centralizer spaced every joint from landing point to planned top of cement.

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

Conductor: Class A no additives
Surface: Calcium Chloride. Used to speed the setting of cement slurries
Intermediate: Calcium Chloride. Used to speed the setting of cement slurries. If applicable: Gas Migration Control Additive, Cement Retarder
Production: Calcium Carbonate, Fluid Loss, Extender, Dispersent, Viscosifier, Defoamer, POZ, Bonding Agent, Retarder, Anti-Settling/Suspension Agent

25) Proposed borehole conditioning procedures:

Surface: Circulate hole clean while rotating & reciprocating the drill string until cuttings diminish at surface.
Intermediate: Circulate hole clean while rotating & reciprocating the drill string until cuttings diminish at surface.
Production: Perform a cleanup cycle by pumping 3-8 bottoms up or until the shakers are clean. Check volume of cuttings coming across the shakers every 15 minutes.

*Note: Attach additional sheets as needed.

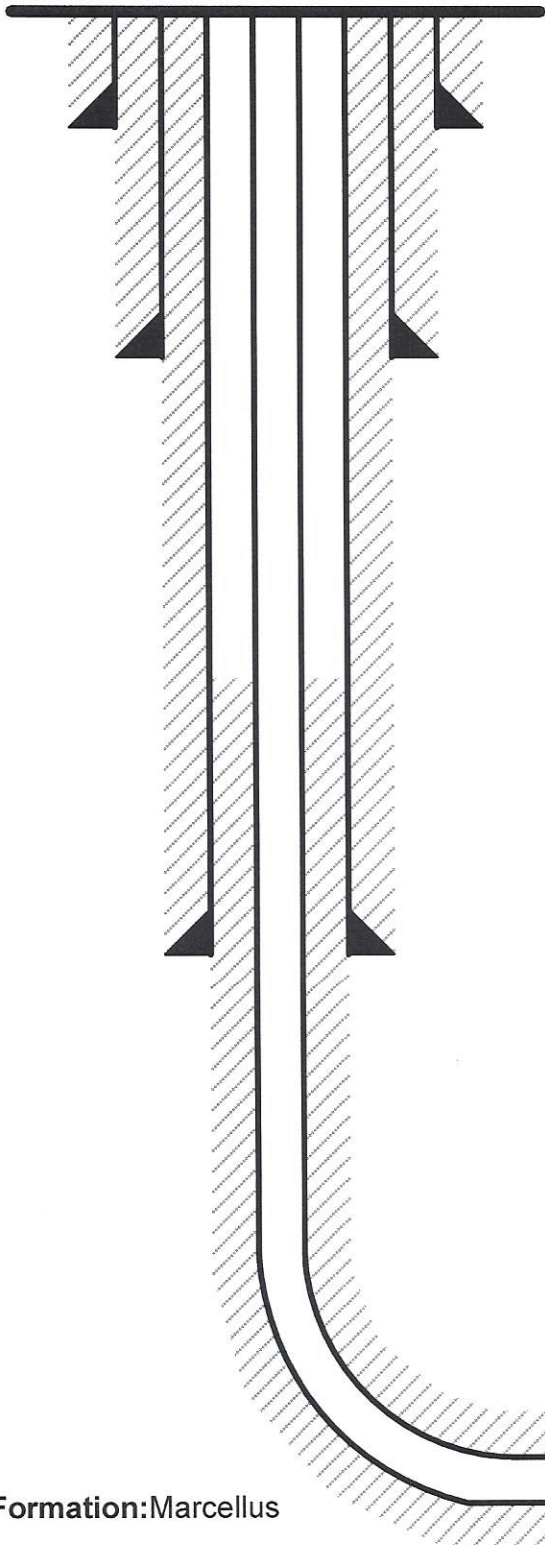
Kenny Willett

EQT Production

Wellbore Diagram

Well: Vanderbilt 4H
Pad: Vanderbilt
Elevation: 1358' GL 1371' KB

County: Marion
State: West Virginia



Conductor @ 53'

26", 85.6#, A252, cement to surface w/ Class A/L

Surface @ 1,238'

13-3/8", 54.5#, J-55, cement to surface w/ Class A/L

Intermediate @ 2,685'

9-5/8", 36#, J-55, cement to surface w/ Class A/H/L

Production @ 22,378' MD / 7,735' TVD

6", 24#, P-110, cement to 500' inside 9-5/8" w/ Class A/H/L

Formation: Marcellus

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EQT Production
Hydraulic Fracturing Monitoring Plan
Pad ID: Vanderbilt
County: Marion

October 4, 2024

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Office of Oil and Gas
OCT 17 2024
Department of
Environmental Protection

Purpose

The purpose of this pad-specific Hydraulic Fracturing Monitoring Plan is to identify and notify conventional well operators near EQT hydraulic fracturing in Marion County, WV prior to hydraulic fracturing at the following EQT wells on the Vanderbilt pad: 2H, 4H, 6H, 8H and 10H.

Due to the requirements under 35CSR8 5.11, the permittee is required to review the area surrounding the proposed well pad so as to identify and evaluate potential conduits for unintended fracture propagation.

A report is required to be submitted along with a well work permit application.

The plan is being implemented as an additional safety measure to be utilized in conjunction with existing best management practices and emergency action plans for the site. These additional measures include coordination with well operators of the timing and location of the hydraulic fracturing, establishment of measures well operators should implement, and assurance that the OOG is notified of the timeline, as well as any issues that may arise during fracturing.

1. Communications with Well Operators

EQT, using available data (WV Geological Survey, WVDEP website, and IHS data service), has identified all known wells and well operators within 500 feet of this pad and the lateral sections that are known or could reasonably be expected to be within range of the fracture propagation. A map showing these wells along with a list of the wells and operators is included in **Attachment A**.

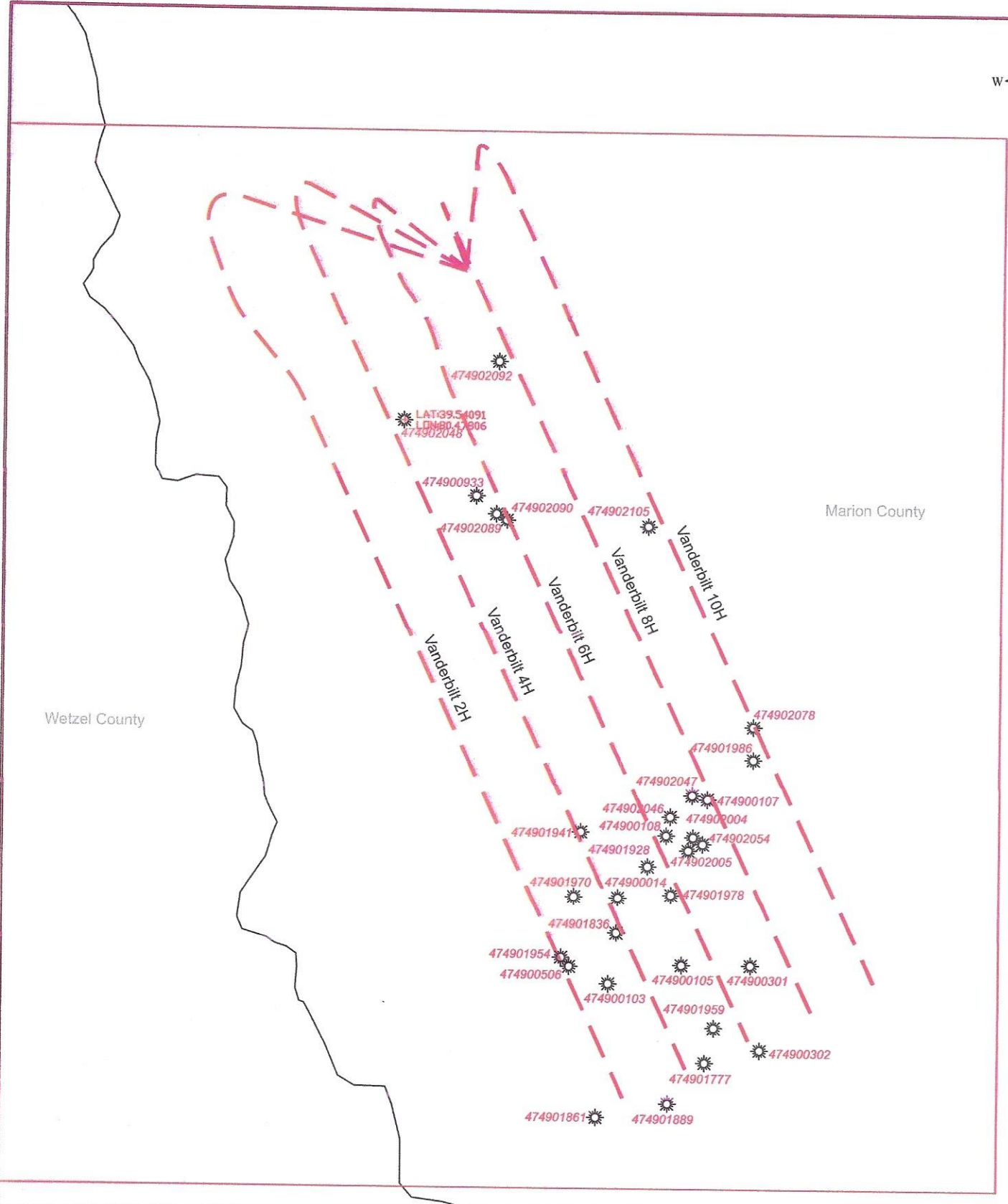
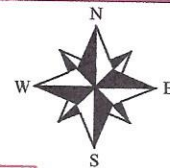
EQT will notify these operators of the hydraulic fracturing schedule for these wells, and coordinate with them throughout the fracturing process.

EQT will recommend to these operators at a minimum to:

1. Inspect their surface equipment prior to fracturing to establish integrity and establish pre-frac well conditions
2. Observe wells closely during and after fracturing and monitor for abnormal increases in water, gas or pressure
3. Inspect or install master valves or other necessary equipment for wellhead integrity capable of a pressure recommended by EQT
4. Notify the OOG and EQT if any changes in water, gas production, pressure, or other anomalies are identified

2. Reporting

EQT will provide information relating to the hydraulic fracturing schedule, communication with other operators, and ongoing monitoring of the work upon request of OOG or immediately in the event of any noted abnormalities.



EQT
EQT Corporation
625 Liberty Avenue
Pittsburgh, PA 15222

Legend

- Well Lateral_FM
- Formation
 - Geneseo
 - Marcellus
 - Utica
- Vanderbilt_Offset_Wells

2000 1000 0 2000



Scale: 1 Inch = 2000 Feet

Disclaimer:
This map is confidential and is to be used only for the express informational purposes for which it was created. Unauthorized use, copying, or dissemination is strictly prohibited. EQT does not warrant the accuracy of the location of any items shown on this map, including, but not limited to, any structures, well or pipeline facilities, property boundaries, topography, roadways, or waterways. The items shown on the map may not have been placed on the map using survey lines or GPS coordinates. The specific location of any of the map items should be determined by a field survey performed by a licensed surveyor upon consultation with EQT.

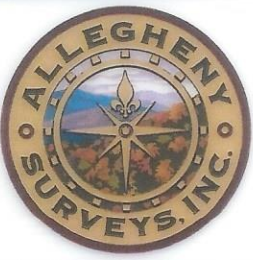
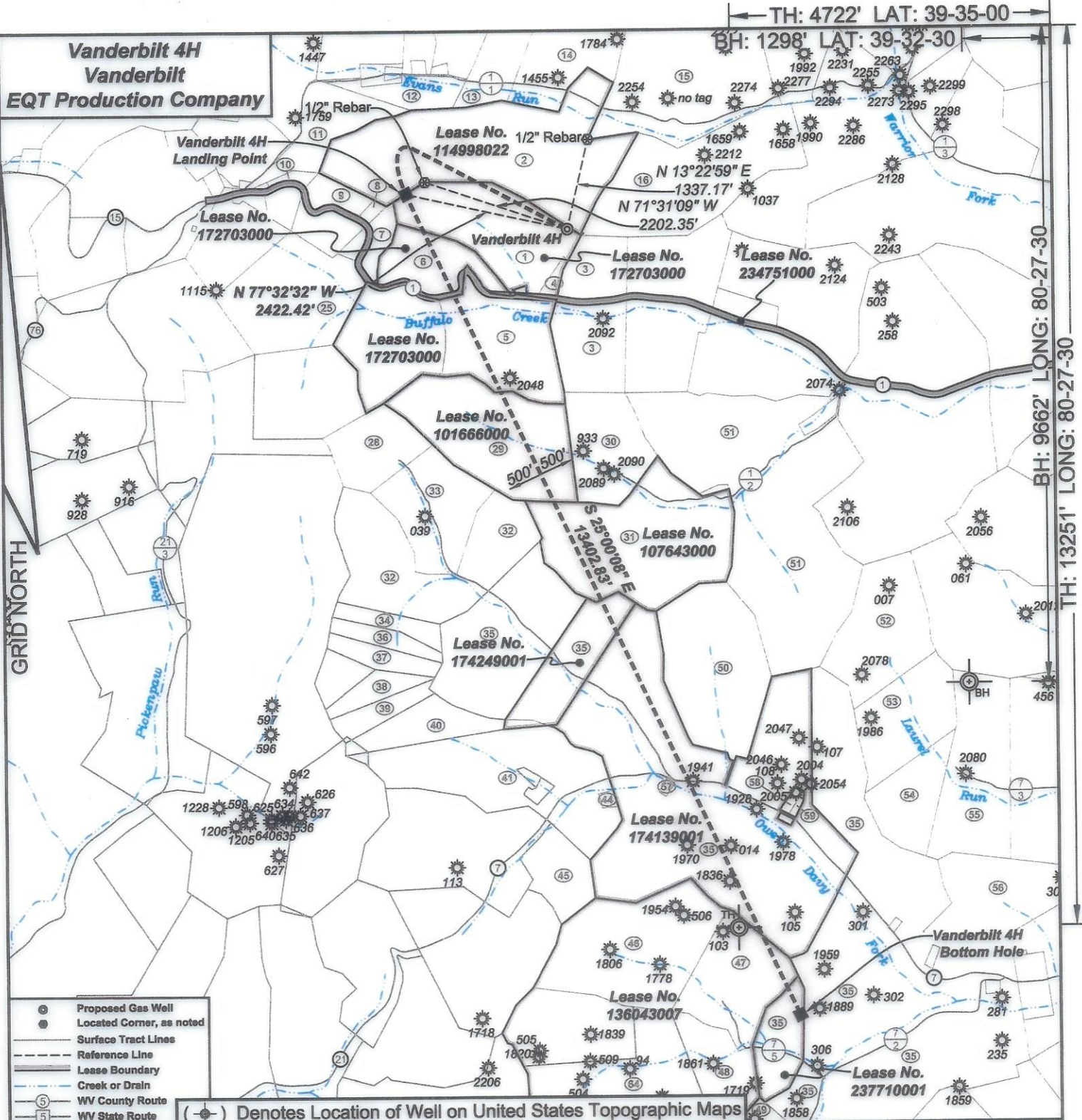
1 Inch = 116,000 Feet



Vanderbilt
Vertical Offsets and Foreign Laterals within 500 Feet

11/01/2024

| UWI | ABAND_DATE | CURR_OPER | ELEV_RF_CD | FIELD_NAME | FNL_CLASS | LATITUDE | LONGITUDE | OPER_NAME | PROJ_TD | SPUD_DATE | ELEVATION | TOT_DEPTH |
|-----------|------------|---------------------------|------------|----------------|--------------------------------------|-------------|--------------|---------------------------|------------|-----------|-----------|-----------|
| 000140000 | 10/22/2008 | SOUTH PENN OIL | GR | WALLACE-FOLSOM | DEVELOPMENT WELL-OIL | 39.52163700 | -80.46732600 | SOUTH PENN OIL | 0.00000000 | 1/17/1930 | 1320.00 | 3368.00 |
| 001030000 | 7/22/2008 | SOUTH PENN OIL | GR | UNNAMED | DEVELOPMENT WELL-GAS | 39.51850500 | -80.46698200 | SOUTH PENN OIL | 0.00000000 | 7/2/1942 | 1348.00 | 3369.00 |
| 001050000 | 8/27/2007 | EAST RESOURCES | GR | WALLACE-FOLSOM | DEVELOPMENT WELL-OIL | 39.51990800 | -80.46481200 | SOUTH PENN OIL | 0.00000000 | 10/2/1942 | 1252.00 | 3261.00 |
| 001070000 | 5/4/1974 | SOUTH PENN OIL | GR | WALLACE-FOLSOM | DEVELOPMENT WELL-GAS | 39.52601200 | -80.46182000 | SOUTH PENN OIL | 0.00000000 | 7/2/1942 | 1178.00 | 3126.00 |
| 001080000 | 4/26/1974 | SOUTH PENN OIL | GR | WALLACE-FOLSOM | DEVELOPMENT WELL-OIL | 39.52428500 | -80.46350900 | SOUTH PENN OIL | 0.00000000 | 10/2/1942 | 1208.00 | 3130.00 |
| 003010000 | 11/24/2006 | EQUITABLE GAS CO | GR | LOGANSFORT | GAS STORAGE WELL | 39.51931700 | -80.45968200 | EQUITABLE GAS CO | 0.00000000 | 6/1/1970 | 1046.00 | 2341.00 |
| 003020000 | 9/2/2008 | EQUITABLE GAS CO | GR | LOGANSFORT | GAS STORAGE WELL | 39.51594700 | -80.45913400 | EQUITABLE GAS CO | 0.00000000 | 9/1/1970 | 1191.00 | 1535.00 |
| 005060000 | | CONSOLIDATION COAL CO | TS | WALLACE-FOLSOM | DEVELOPMENT WELL-OIL | 39.51917000 | -80.46901210 | PENNZOIL CO INC | 0.00000000 | 11/3/1928 | 1300.00 | 3342.00 |
| 009330000 | 4/6/2010 | LEATHERWOOD INC | GR | UNNAMED | DEVELOPMENT WELL-OIL | 39.53787700 | -80.47421700 | GARNER & GAWTHROP INC | 0.00000000 | 18010101 | 1046.00 | 0.00 |
| 017770000 | 11/7/2006 | CONSOLIDATION COAL CO | GR | WALLACE-FOLSOM | DEVELOPMENT WELL-GAS | 39.51522210 | -80.46177780 | CONSOLIDATION COAL CO | 0.00000000 | 18010101 | 1195.00 | 1368.00 |
| 018360000 | 10/29/2007 | CONSOLIDATION COAL CO | GR | WALLACE-FOLSOM | DEVELOPMENT WELL-GAS | 39.52044440 | -80.46641670 | CONSOLIDATION COAL CO | 0.00000000 | 18010101 | 1274.00 | 1600.00 |
| 018890000 | 11/6/2007 | CONSOLIDATION COAL | UNNAMED | UNNAMED | DEVELOPMENT WELL-GAS | 39.51540000 | -80.46194000 | CONSOLIDATION COAL | 0.00000000 | 18010101 | 1067.00 | 0.00 |
| 019280000 | 11/4/2008 | CONSOLIDATION COAL | UNNAMED | UNNAMED | UNCLASSIFIED | 39.52340000 | -80.46507000 | CONSOLIDATION COAL | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 019410000 | 2/5/2008 | CONSOLIDATION COAL | UNNAMED | UNNAMED | UNCLASSIFIED | 39.52441000 | -80.46769000 | CONSOLIDATION COAL | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 019540000 | 3/7/2008 | CONSOLIDATION COAL | UNNAMED | UNNAMED | UNCLASSIFIED | 39.51948000 | -80.46919000 | CONSOLIDATION COAL | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 019590000 | 5/8/2008 | CONSOLIDATION COAL | UNNAMED | UNNAMED | UNCLASSIFIED | 39.51701000 | -80.46170000 | CONSOLIDATION COAL | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 019700000 | 9/16/2008 | CONSOLIDATION COAL | UNNAMED | UNNAMED | UNCLASSIFIED | 39.52183000 | -80.46867000 | CONSOLIDATION COAL | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 019780000 | 3/10/2008 | CONSOLIDATION COAL | UNNAMED | UNNAMED | UNCLASSIFIED | 39.52188000 | -80.46370000 | CONSOLIDATION COAL | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 019860000 | 12/19/2008 | CONSOLIDATION COAL | UNNAMED | UNNAMED | UNCLASSIFIED | 39.52706000 | -80.45919010 | CONSOLIDATION COAL | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 020040000 | 3/2/2009 | CONSOLIDATION COAL | UNNAMED | UNNAMED | UNCLASSIFIED | 39.52947000 | -80.46281000 | CONSOLIDATION COAL | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 020050000 | 12/1/2009 | CONSOLIDATION COAL | UNNAMED | UNNAMED | UNCLASSIFIED | 39.52389000 | -80.46322010 | CONSOLIDATION COAL | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 020460000 | | CONSOLIDATION COAL | UNNAMED | UNNAMED | UNCLASSIFIED | 39.52527000 | -80.46394000 | CONSOLIDATION COAL | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 020470000 | 10/20/2009 | CONSOLIDATION COAL CO | GR | WALLACE-FOLSOM | DEVELOPMENT WELL-GAS | 39.52619440 | -80.46288890 | CONSOLIDATION COAL CO | 0.00000000 | 18010101 | 1200.00 | 1565.00 |
| 020480000 | 3/18/2010 | CONSOLIDATION COAL | UNNAMED | UNNAMED | DEVELOPMENT WELL-GAS | 39.54091000 | -80.47806000 | CONSOLIDATION COAL | 0.00000000 | 18010101 | 1146.00 | 0.00 |
| 020540000 | 11/5/2009 | CONSOLIDATION COAL CO | GR | WALLACE-FOLSOM | DEVELOPMENT WELL-OIL | 39.52425000 | -80.46230500 | CONSOLIDATION COAL CO | 0.00000000 | 18010101 | 1149.00 | 1300.00 |
| 020780000 | 7/23/2010 | CONSOLIDATION COAL | UNNAMED | UNNAMED | UNCLASSIFIED | 39.52875000 | -80.45967000 | CONSOLIDATION COAL | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 020890000 | 3/18/2010 | CONSOLIDATION COAL CO | GR | UNNAMED | DEVELOPMENT WELL-GAS | 39.53716670 | -80.47277780 | CONSOLIDATION COAL CO | 0.00000000 | 18010101 | 1150.00 | 1500.00 |
| 020900000 | 2/26/2010 | CONSOLIDATION COAL | UNNAMED | UNNAMED | UNCLASSIFIED | 39.53686000 | -80.47255000 | CONSOLIDATION COAL | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 020920000 | 4/26/2010 | CONSOLIDATION COAL | UNNAMED | UNNAMED | UNCLASSIFIED | 39.54334000 | -80.47321000 | CONSOLIDATION COAL | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 021050000 | 6/1/2010 | CONSOLIDATION COAL CO | GR | UNNAMED | DEVELOPMENT WELL-GAS | 39.53672220 | -80.46536110 | CONSOLIDATION COAL CO | 0.00000000 | 18010101 | 1077.00 | 1251.00 |
| 300210000 | 9/27/1930 | SOUTHERN OIL INC | UNKNOW | UNKNOW | UNCLASSIFIED | 39.55009700 | -80.48268700 | SOUTHERN OIL INC | 0.00000000 | 2/12/1917 | 0.00 | 0.00 |
| 302110000 | 7/21/1939 | CARNEGIE NATURAL GAS CORP | UNKNOW | UNKNOW | PSEUDO-ORIGINAL WELL - UNKNOWN CLASS | 39.52715300 | -80.45945700 | CARNEGIE NATURAL GAS CORP | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 303600000 | 7/23/1942 | PITTSBURGH OIL & GAS | GR | SMITHFIELD | DEVELOPMENT WELL-OIL | 39.55140300 | -80.48129800 | PITTSBURGH OIL & GAS | 0.00000000 | 6/1/1917 | 1331.00 | 2489.00 |
| 700510000 | | SOUTH PENN OIL | UNKNOW | UNKNOW | PSEUDO-ORIGINAL WELL - UNKNOWN CLASS | 39.52439500 | -80.46826200 | SOUTH PENN OIL | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 700520000 | | SOUTH PENN OIL | GR | WALLACE-FOLSOM | DEVELOPMENT WELL-OIL | 39.52425000 | -80.46376610 | SOUTH PENN OIL | 0.00000000 | 6/8/1902 | 1075.00 | 3013.00 |
| 702110000 | | SOUTH PENN OIL | UNKNOW | UNKNOW | PSEUDO-ORIGINAL WELL - UNKNOWN CLASS | 39.53731300 | -80.47163400 | SOUTH PENN OIL | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 722590000 | | UNKNOW | UNKNOW | UNKNOW | UNCLASSIFIED | 39.54603300 | -80.47463200 | UNKNOW | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 722600000 | | UNKNOW | UNKNOW | UNKNOW | UNCLASSIFIED | 39.55096700 | -80.47837810 | UNKNOW | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 722610000 | | UNKNOW | UNKNOW | UNKNOW | UNCLASSIFIED | 39.55096700 | -80.48062700 | UNKNOW | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 722680000 | | UNKNOW | UNKNOW | UNKNOW | UNCLASSIFIED | 39.54951590 | -80.48418600 | UNKNOW | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 722690000 | | UNKNOW | UNKNOW | UNKNOW | UNCLASSIFIED | 39.54864500 | -80.48456100 | UNKNOW | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 722730000 | | UNKNOW | UNKNOW | UNKNOW | UNCLASSIFIED | 39.54646800 | -80.48605900 | UNKNOW | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 722740000 | | UNKNOW | UNKNOW | UNKNOW | UNCLASSIFIED | 39.54617800 | -80.48250000 | UNKNOW | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 722750000 | | UNKNOW | UNKNOW | UNKNOW | UNCLASSIFIED | 39.54574200 | -80.48062700 | UNKNOW | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 722760000 | | UNKNOW | UNKNOW | UNKNOW | UNCLASSIFIED | 39.54356500 | -80.47294600 | UNKNOW | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 722770000 | | UNKNOW | UNKNOW | UNKNOW | UNCLASSIFIED | 39.54298500 | -80.48231300 | UNKNOW | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 722780000 | | UNKNOW | UNKNOW | UNKNOW | UNCLASSIFIED | 39.54356500 | -80.48512300 | UNKNOW | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 722830000 | | UNKNOW | UNKNOW | UNKNOW | UNCLASSIFIED | 39.53847400 | -80.47538100 | UNKNOW | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 722850000 | | UNKNOW | UNKNOW | UNKNOW | UNCLASSIFIED | 39.53324900 | -80.47669200 | UNKNOW | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 722860000 | | UNKNOW | UNKNOW | UNKNOW | UNCLASSIFIED | 39.53194200 | -80.47688000 | UNKNOW | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 722870000 | | UNKNOW | UNKNOW | UNKNOW | UNCLASSIFIED | 39.53716690 | -80.46357900 | UNKNOW | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 722940000 | | UNKNOW | UNKNOW | UNKNOW | UNCLASSIFIED | 39.52802400 | -80.45731900 | UNKNOW | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 722950000 | | HOPE NATURAL GAS | UNKNOW | UNKNOW | UNCLASSIFIED | 39.52874900 | -80.45983200 | HOPE NATURAL GAS | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 722970000 | | UNKNOW | UNKNOW | UNKNOW | UNCLASSIFIED | 39.52454000 | -80.46395300 | UNKNOW | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 722980000 | | UNKNOW | UNKNOW | UNKNOW | UNCLASSIFIED | 39.52439500 | -80.46282900 | UNKNOW | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 722990000 | | UNKNOW | UNKNOW | UNKNOW | UNCLASSIFIED | 39.52396000 | -80.46208000 | UNKNOW | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 723000000 | | UNKNOW | UNKNOW | UNKNOW | UNCLASSIFIED | 39.52323400 | -80.46545200 | UNKNOW | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 723010000 | | UNKNOW | UNKNOW | UNKNOW | UNCLASSIFIED | 39.52163700 | -80.46788800 | UNKNOW | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 723020000 | | UNKNOW | UNKNOW | UNKNOW | UNCLASSIFIED | 39.52207300 | -80.46376610 | UNKNOW | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 723030000 | | UNKNOW | UNKNOW | UNKNOW | UNCLASSIFIED | 39.51989600 | -80.46601400 | UNKNOW | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 723060000 | | UNKNOW | UNKNOW | UNKNOW | UNCLASSIFIED | 39.51655800 | -80.46170500 | UNKNOW | 0.00000000 | 18010101 | 0.00 | 0.00 |
| 723070000 | | UNKNOW | UNKNOW | UNKNOW | UNCLASSIFIED | 39.51510600 | -80.46189300 | UNKNOW | 0.00000000 | 18010101 | 0.00 | 0.00 |



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.

Ben R. Singleton
P.S. 2092



SEAL

FILE NO: 93-21
DRAWING NO: Vanderbilt 4H
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: 1:2500
PROVEN SOURCE OF ELEVATION: NGS CORS Station

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

DATE: October 15 20 24
OPERATOR'S WELL NO.: Vanderbilt 4H
API WELL NO
47 - 049 - 02535
STATE COUNTY PERMIT

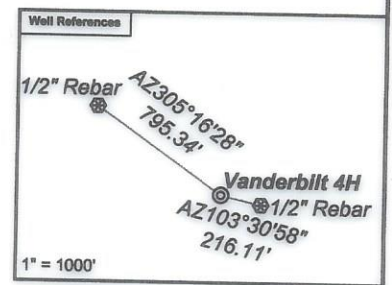
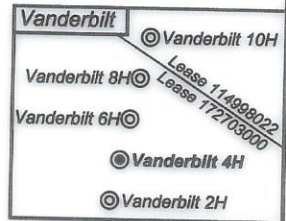
WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
LOCATION: ELEVATION: As-Built: 1358' WATERSHED: Evans Run & Buffalo Creek QUADRANGLE: Glover Gap
DISTRICT: Mannington COUNTY: Marion
SURFACE OWNER: Larry Higgins & Eva Higgins ACREAGE: 6.11/01/2024
ROYALTY OWNER: EQT Production Company, et al. LEASE NO: 172703000 ACREAGE: 60
PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY)
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus ESTIMATED DEPTH: 7,735'

WELL OPERATOR: EQT Production Company DESIGNATED AGENT: Joseph C. Mallow
ADDRESS: 400 Woodcliff Drive ADDRESS: 115 Professional Place PO Box 280
Canonsburg, PA 15317 Bridgeport, WV 26330

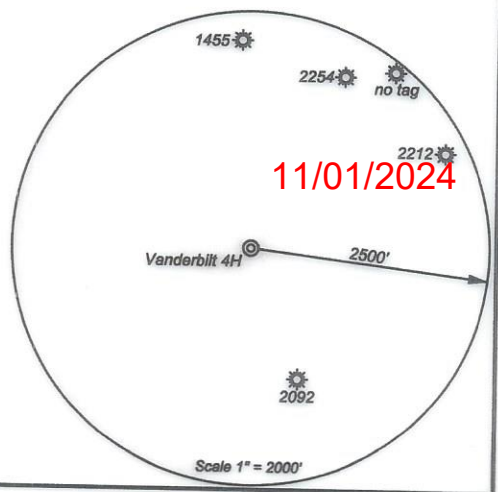
**Vanderbilt 4H
Vanderbilt
EQT Production Company**

| Tract I.D. | Tax/Map No. | Parcel No. | County | District | Surface Tract Owner | Acres |
|------------|-------------|------------|--------|------------|-----------------------------------|--------|
| 1 | 45 | 11 | Marion | Mannington | Larry D. & Trisha B. Higgins | 60 |
| 2 | 45 | 17 | Marion | Mannington | EQT Production Company | 125.73 |
| 3 | 45 | 5 | Marion | Mannington | Harry R. & Susanne M. Morris | 52 |
| 4 | 45 | 12.1 | Marion | Mannington | April M. Powell | 2.49 |
| 5 | 45 | 4 | Marion | Mannington | Ronald L. Powell, Jr. | 59.82 |
| 6 | 45 | 12 | Marion | Mannington | April M. Powell | 37.5 |
| 7 | 45 | 13 | Marion | Mannington | Thelma L. Coen | 11 |
| 8 | 45 | 14.2 | Marion | Mannington | Thelma L. Coen | 1.6 |
| 9 | 45 | 14.1 | Marion | Mannington | Patricia F. Powell | 8.59 |
| 10 | 45 | 14.4 | Marion | Mannington | Thomas A. & Karen J. Hibenbaugh | 3 |
| 11 | 45 | 16 | Marion | Mannington | Keith A. Powell | 27.29 |
| 12 | 45 | 26 | Marion | Mannington | John M. Proffitt, Sr. | 14.6 |
| 13 | 45 | 25.1 | Marion | Mannington | Richard K. & Dawn K. Jones | 5.71 |
| 14 | 45 | 24 | Marion | Mannington | Barbara E. Henderson, et al. | 38.5 |
| 15 | 45 | 23 | Marion | Mannington | Thomas L. Snodgrass | 105.5 |
| 16 | 45 | 20 | Marion | Mannington | EQT Production Company | 78.5 |
| 25 | 45 | 2 | Marion | Mannington | Allen L. & Donna J. Hillberry | 102.59 |
| 28 | 46 | 10.1 | Marion | Mannington | Johnny P. Myers | 28.43 |
| 29 | 46 | 5.2 | Marion | Mannington | Marion County Coal Resources Inc. | 74 |
| 30 | 46 | 6.1 | Marion | Mannington | Patricia A. Cotheman | 40 |
| 31 | 46 | 6 | Marion | Mannington | Patricia A. Cotheman | 100 |
| 32 | 46 | 11 | Marion | Mannington | Brett Martin | 59.55 |
| 33 | 46 | 10 | Marion | Mannington | John Myers | 44.07 |
| 34 | 46 | 12 | Marion | Mannington | Brett Martin | 10 |
| 35 | 46 | 2 | Marion | Mannington | Marion County Commission | 644.34 |
| 36 | 46 | 13 | Marion | Mannington | Brett Martin | 8.5 |
| 37 | 46 | 14 | Marion | Mannington | Brett Martin | 8.5 |
| 38 | 46 | 16 | Marion | Mannington | Brett Martin | 10.5 |
| 39 | 46 | 17 | Marion | Mannington | Brett Martin | 7.5 |
| 40 | 46 | 9 | Marion | Mannington | Wayne D. Willie II | 13.25 |
| 41 | 46 | 1 | Marion | Mannington | Wayne D. Willie II | 85.87 |
| 44 | 46 | 1.2 | Marion | Mannington | Caren L. Willie | 1.2 |
| 45 | 47 | 11 | Marion | Mannington | David L. & Doretta D. Bonnell | 23.53 |
| 46 | 47 | 6 | Marion | Mannington | The West Virginia Land Trust Inc. | 62 |
| 47 | 47 | 7 | Marion | Mannington | The West Virginia Land Trust Inc. | 48 |
| 48 | 47 | 2 | Marion | Mannington | Debra A. Marozzi | 30 |
| 49 | 47 | 1 | Marion | Mannington | Marion County Coal Resources Inc. | 98 |
| 50 | 46 | 4 | Marion | Mannington | Mike Ross Inc | 67.47 |
| 51 | 46 | 5 | Marion | Mannington | Ruby L. Herndon | 182.04 |
| 52 | 48 | 1 | Marion | Mannington | David L. & Karla A. James | 56.5 |
| 53 | 48 | 2 | Marion | Mannington | EQT Production Company | 40 |
| 54 | 48 | 3 | Marion | Mannington | Mark A. Barron | 27.5 |
| 55 | 48 | 4 | Marion | Mannington | Mark A. Barron | 57 |
| 56 | 48 | 5 | Marion | Mannington | Marion County Coal Resources Inc. | 46.83 |
| 57 | 46 | 2.3 | Marion | Mannington | Megan M. Peak | 0.75 |
| 58 | 46 | 2.2 | Marion | Mannington | Marion County Commission | 1.19 |
| 59 | 46 | 2.4 | Marion | Mannington | Marion County Commission | 0.81 |
| 64 | 47 | 3 | Marion | Mannington | Debra A. Marozzi | 91 |

Notes:
 Vanderbilt 4H coordinates are
 NAD 27 N: 382,815.14 E: 1,725,037.15
 NAD 27 Lat: 39.546955 Long: -80.475076
 NAD 83 UTM N: 4,377,816.58 E: 545,118.41
 Vanderbilt 4H Landing Point coordinates are
 NAD 27 N: 383,337.70 E: 1,722,671.77
 NAD 27 Lat: 39.548318 Long: -80.483484
 NAD 83 UTM N: 4,377,763.77 E: 544,395.11
 Vanderbilt 4H Bottom Hole coordinates are
 NAD 27 N: 371,190.82 E: 1,728,336.50
 NAD 27 Lat: 39.515139 Long: -80.462935
 NAD 83 UTM N: 4,374,091.83 E: 546,182.54
 West Virginia Coordinate system of 1927 (North Zone)
 based upon Differential GPS Measurements.
 Plat orientation, corner and well ties are based upon
 the grid north meridian.
 Well location references are based upon the grid north
 meridian.
 UTM coordinates are NAD83, Zone 17, Meters.



| Lease No. | Owner | Acres |
|-----------|--|-----------------|
| 172703000 | EQT Production Company, et al. | 80 |
| 114998022 | Bounty Minerals, LLC, et al. | 125.73 |
| 172703000 | EQT Production Company, et al. | 40 |
| 234751000 | West Virginia Department of Transportation, Division of Highways | 46.86 |
| 172703000 | EQT Production Company, et al. | 126 |
| 101666000 | XTO Energy Inc. | 74 |
| 107643000 | Denise L. Chappell, et al. | 100 |
| 174249001 | Country Roads Minerals, LLC, et al. | 34 |
| 174139001 | Country Roads Minerals, LLC, et al. | 203 |
| 136043007 | Lee and Hall Royalties, et al. | 274 |
| 237710001 | J&N Management Enterprises, LLC, et al. | 23.75 of 297.75 |



**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


RECEIVED
 Office of Oil and Gas
 OCT 17 2024
 WV Department of Environmental Protection

**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

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: EQT Production Company
 By: Branden Weimer 
 Its: Regional Manager - Subsurface Permitting

| Lease No. | Grantor, Lessor, etc. | Acres | Grantee, Lessee, etc. | Royalty | Book/Page |
|--------------------|--|-----------|---|-------------------------------------|--|
| ✓ <u>172703000</u> | <u>EQT Production Company, et al.</u> Ascent Resources Marcellus Minerals, LLC | 60 ac | EQT Production Company | "at least 1/8th per WV Code 22-6-8" | DB 1204/61 |
| ✓ <u>114998022</u> | <u>Bounty Minerals, LLC, et al.</u> Bounty Minerals, LLC Antero Resources Corporation | 125.73 ac | Antero Resources Corporation EQT Production Company | "at least 1/8th per WV Code 22-6-8" | DB 1223/161 AB 56/332 |
| ✓ <u>172703000</u> | <u>EQT Production Company, et al.</u> Ascent Resources Marcellus Minerals, LLC | 40 ac | EQT Production Company | "at least 1/8th per WV Code 22-6-8" | DB 1204/61 |
| ✓ <u>234751000</u> | <u>West Virginia Department of Transportation, Division of Highways</u> West Virginia Department of Transportation, Division of Highways | 46.86 ac | EQT Production Company | "at least 1/8th per WV Code 22-6-8" | DB 1336/524 |
| ✓ <u>172703000</u> | <u>EQT Production Company, et al.</u> Ascent Resources Marcellus Minerals, LLC | 126 ac | EQT Production Company | "at least 1/8th per WV Code 22-6-8" | DB 1204/61 |
| ✓ <u>101666000</u> | <u>XTO Energy Inc.</u> XTO Energy Inc. | 74 ac | EQT Production Company | "at least 1/8th per WV Code 22-6-8" | DB 1172/179 |
| ✓ <u>107643000</u> | <u>Denise L. Chappell, et al.</u> Golda M. Ice and A. R. Ice, wife and husband Equitable Gas Company Equitrans, Inc., et al. Equitrans, LP | 100 ac | Equitable Gas Company Equitrans, Inc. Equitrans, LP EQT Production Company | "at least 1/8th per WV Code 22-6-8" | DB 657/30 AB 12/279 AB 46/660 DB 1114/127 |
| ✓ <u>174249001</u> | <u>Country Roads Minerals, LLC, et al.</u> Country Roads Minerals, LLC | 34 ac | EQT Production Company | "at least 1/8th per WV Code 22-6-8" | DB 1291/667 |

(sublease)

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 OFFICE OF OIL AND GAS
 OCT 17 2024
 WEST VIRGINIA DEPARTMENT OF
 ENVIRONMENT AND NATURAL RESOURCES

| | | | | | |
|--------------------|---|--------------------------|------------------------|--|--------------|
| ✓ <u>174139001</u> | <u>Country Roads Minerals, LLC, et al.</u> Country Roads Minerals, LLC | 203 ac | EQT Production Company | "at least 1/8th per WV Code 22-6-8" | DB 1291/676 |
| ✓ <u>136043007</u> | <u>Lee and Hall Royalties, et al.</u> Lee and Hall Royalties | 274 ac | EQT Production Company | "at least 1/8th per WV Code 22-6-8" | DB 1310/1083 |
| ✓ <u>237710001</u> | <u>J&N Management Enterprises, LLC, et al.</u> J&N Management Enterprises, LLC | 23.75 ac of 297.75 ac | EQT Production Company | "at least 1/8th per WV Code 22-6-8" | DB 1347/165 |

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Office of Oil and Gas
OCT 17 2024
WV DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES



EQT PRODUCTION COMPANY
400 Woodcliff Drive | Canonsburg, PA 15317

October 16, 2024

Via FedEx Overnight Delivery

West Virginia Department of Environmental Protection
Office of Oil and Gas
601 57th Street, S.E.
Charleston, WV 25304

RE: Well Work Permit Application Modification – EXPEDITED REVIEW REQUESTED
Vanderbilt 4H
Permit Number 47-049-02535
Mannington District, Marion County, WV

WVDEP Recipient,

Attached please find the Well Work Permit Application for the well referenced above. You will find the following included with this submittal:

- Check in the amount \$7,500.00 for the expedited permit modification fee
- Completed WW-6B and supporting documents, approved by the O&G Inspector
- Well Location Plat
- Completed Form WW-6A1 and supporting documentation
- Hydraulic Fracturing Monitoring Plan
- Offset Well Map and Table
- CD including the Water Management Plan Modification Application

EQT is proposing to extend the lateral from the previously permitted length.

EQT Production trusts that if any portion of the submitted documentation is found to be inadequate for processing the permit, notification will be made to our Permitting department at your earliest convenience. It is EQT Production's intent to cooperate fully to provide any additional requested documentation and clarification in a timely manner such that permitting proceeds in a predictable and logical manner.

Best Regards,

Branden Weimer
Regional Manager – Permitting
Branden.Weimer@eqt.com
412-997-7940

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Office of Oil and Gas
OCT 17 2024
WV Department of
Environmental Protection

11/01/2024