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

Earl Ray Tomblin , Governor
Randy C. Huffman , Cabinet Secretary
www.dep.wv.gov

Monday, September 12, 2016
WELL WORK PERMIT
Horizontal 6A / Horizontal 6A Well - 1

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

Re: Permit approval for MEPCO 7H
47-061-01758-00-00

This well work permit is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless 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: MEPCO 7H
Farm Name: MEPCO LLC
U.S. WELL NUMBER: 47-061-01758-00-00
Horizontal 6A / Horizontal 6A Well - 1
Date Issued: 9/12/2016

API Number: _____

PERMIT CONDITIONS 4706101758

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.

2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than one hundred (100) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.

3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.

4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.

5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations,* 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.

6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.

7. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.

8. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.

9. The operator shall provide to the Office of Oil and Gas the dates of each of the following within 30 days of their occurrence: completion of construction of the well pad, commencement of drilling, cessation of drilling, completion of any other permitted well work, and completion of the well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov.

WW-6B
(04/15)

API NO. 47-_____-_____
OPERATOR WELL NO. MEPCO 7H
Well Pad Name: MEPCO

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

1) Well Operator:	Northeast Natural Energy LLC	494498281	Monongalia	CLAY 3	BLACKSVILLE 25
		Operator ID	County	District	Quadrangle

2) Operator's Well Number: MEPCO 7H Well Pad Name: MEPCO

3) Farm Name/Surface Owner: MEPCO LLC Public Road Access: CR 29/4

4) Elevation, current ground: 1448.16' Elevation, proposed post-construction: 1424.00'

5) Well Type (a) Gas X Oil _____ Underground Storage _____
Other _____
(b)If Gas Shallow X Deep _____
Horizontal X

6) Existing Pad: Yes or No NO MJK 5/23/2016

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus, 8,222', 103', 3600 PSI

8) Proposed Total Vertical Depth: 8,222'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 17,554.86'

11) Proposed Horizontal Leg Length: 8,650'

12) Approximate Fresh Water Strata Depths: 50', 1,307'

13) Method to Determine Fresh Water Depths: DRILLERS LOG FROM OFFSET WELLS

14) Approximate Saltwater Depths: 1,947', 2,589'

15) Approximate Coal Seam Depths: 662', 1,305'

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 X

(a) If Yes, provide Mine Info: Name: 4706101758
Depth: _____
Seam: _____
Owner: _____

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WW-6B
(04/15)

API NO. 47-_____-_____
OPERATOR WELL NO. MEPCO 7H
Well Pad Name: MEPCO

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	94.71	40'	40'	GTS
Fresh Water	13-3/8"	New	J-55	54.5	1,423'	1,400'	CTS
Coal							
Intermediate	9-5/8"	New	J-55	40	2,680'	2,650'	CTS
Production	5-1/2"	New	P-110	20	17,554.86'	17,524.86'	4,091 Cu. Ft.
Tubing	2-7/8"	New	N-80	6.5	NA	8,500'	NA
Liners							

MJK 5/23/2016

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"	30"	.375	415		4,500 psi Grout	NA
Fresh Water	13-3/8"	17 1/2"	.38"	2,760	2,000	Class A	1.23
Coal							
Intermediate	9-5/8"	12 1/4"	.395"	3,950	3,000	Class A	1.3
Production	5-1/2"	8 3/4"	.361"	12,530	9,700	50:50 Poz	1.21
Tubing	2-7/8"	NA	.217"	10,570	3,600	NA	NA
Liners							

4706101758

PACKERS

Kind:				
Sizes:				
Depths Set:				

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API NO. 47-_____-_____
OPERATOR WELL NO. MEPCO 7H
Well Pad Name: MEPCO

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

Drilling and completion of a horizontal Marcellus well. The well will be drilled on air to an approximate depth of 7,011.5' TVD/MD. The well will then be horizontally drilled on synthetic based mud from the KOP to approximately 8,222' TVD / 17,554.86' MD along a 323 degree azimuth.

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

Multi-stage / high-rate slickwater fracture treatment using various size sands as proppant. First stage will be initiated via pressurization against a burst disc ran in the production casing string or perforated with coiled tubing. Subsequent stages will be perforated with pumped down guns ran on wireline. Individual stages will be isolated with composite frac plugs. Maximum pump rate during any stage will be 110 BPM with a maximum allowable surface pressure of 9,500 PSI. Composite bridge plugs will be set at the end of the last stage to isolate the treated formation.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 12.8

22) Area to be disturbed for well pad only, less access road (acres): 11

4706101750

23) Describe centralizer placement for each casing string:

Surface and intermediate casing strings will have bow spring centralizers placed every third joint (~120') from the shoe joint to surface. Production casing will have rigid body centralizers placed at a minimum of every fourth joint (~160') from TD to surface.

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

Surface string cement will be a Class A + Max 3% bwoc Calcium Chloride Fresh Water blend. Intermediate string cement will be a Class A Cement + Max 3% bwoc Calcium Chloride + Fresh Water. Production string cement will be (50:50) Poz (Fly Ash):Type I Cement with a gas migration additive.

25) Proposed borehole conditioning procedures:

Surface string will use a 25.0 bbls Gel Pill + LCM + 25 lbs Cello Flake + 20 lbs/bbl Bentonite @ 8.4 ppg & 10 bbls fresh water spacer prior to cement. Intermediate string will use a 25.0 bbls Gel Pill + LCM + 25 lbs Cello Flake + 20 lbs/bbl Bentonite @ 8.4 ppg & 10 bbls fresh water spacer prior to cement. Production string will use a 50.0 bbls SealBond 25 + 1 gal/bbl US-40 + 275 lbs/bbl Barite + 1 gal/bbl SS-2 Spacer @ 13.5 ppg prior to cement.

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*Note: Attach additional sheets as needed.

NORTHEAST NATURAL ENERGY, LLC

Location: Monongalia County, WV
Field: Monongalia
Facility: MEPCO Pad

Slot: Slot #07
Well: MEPCO LLC 7H
Wellbore: MEPCO LLC 7H PWB

northeast NATURAL ENERGY

BAKER HUGHES

Location Information					
Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
MEPCO Pad			1784821.230	424282.090	39°39'46.962"N	80°09'08.886"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Slot #07	-3.73	3.33	1784824.560	424278.360	39°39'46.925"N	80°09'08.823"W
Top Hole (RKB) to Mud line (At Slot: Slot #07)					16ft	
Mean Sea Level to Mud line (At Slot: Slot #07)					-1423ft	
Top Hole (RKB) to Mean Sea Level					1439ft	

Tie On : 0.00° Inc, 16.00ft MD, 16.00ft TVD, 0.00ft VS
24in Conductor (GL) : 0.00° Inc, 40.00ft MD, 40.00ft TVD, 0.00ft VS

13.375in Casing Surface (GL) : 0.00° Inc, 1400.00ft MD, 1400.00ft TVD, 0.00ft VS

9.625in Casing Intermediate (GL) : 0.00° Inc, 2650.00ft MD, 2650.00ft TVD, 0.00ft VS

Formation	Depth (KBTVD)
Geneseo	7942'
Tully	7994'
Hamilton	8058'
Upper Marcellus	8165'
Cherry Valley	8206'
Lower Marcellus	8210'
Onondaga	8268'

Type	Hole Size	Casing Size	Grade		GL Depth (Csg)
Conductor	28"	24"	NA		40'
Surface	17-1/2"	13-3/8"	J-55	54.5	1400'
Intermediate	12-1/4"	9-5/8"	J-55	40	2650'

KOP 1 : 0.00° Inc, 7011.50ft MD, 7011.50ft TVD, 0.00ft VS
10.00°/100ft
End of Build : 45.00° Inc, 7461.50ft MD, 7416.64ft TVD, -60.79ft VS
KOP 2 : 45.00° Inc, 7855.90ft MD, 7695.53ft TVD, -161.81ft VS
10.00°/100ft
Landing Pt. : 90.00° Inc, 8904.31ft MD, 8222.00ft TVD, 392.04ft VS
MEPCO LLC 7H LP Rev-3

MEPCO LLC 7H BHL Rev-3
BHL : 90.00° Inc, 17554.86ft MD, 8222.00ft TVD, 9042.59ft VS

Scale 1 inch = 1500
True Vertical Depth (ft)
-750 0 750 1500 2250 3000 3750 4500 5250 6000 6750 7500 8250

0 750 1500 2250 3000 3750 4500 5250 6000 6750 7500 8250 9000 9750 10500
Vertical Section (ft)
Azimuth 323.00° with reference 0.00 N, 0.00 E
Scale 1 inch = 1500

Scale 1 inch = 2000
Easting (ft)
-8000 -7000 -6000 -5000 -4000 -3000 -2000 -1000 0 1000

BHL : 8222.00ft TVD, 6675.82ft N, 6166.43ft W
MEPCO LLC 7H BHL Rev-3

MEPCO LLC 7H LP Rev-3
Landing Pt. : 8222.00ft TVD, 232.80ft S, 960.37ft W

KOP 2 : 7695.53ft TVD, 379.80ft S, 235.15ft W
End of Build : 7416.64ft TVD, 142.68ft S, 88.34ft W
KOP 1 : 7011.50ft TVD, 0.00ft N, 0.00ft E
Tie On : 16.00ft TVD, 0.00ft N, 0.00ft E
Slot #07

Northing (ft)
7000 6000 5000 4000 3000 2000 1000 0 -1000 -2000

N GRID
W E

BGGM (1945.0 to 2017.0) Dip: 66.88° Field: 52185.5 nT
Magnetic North is 9.04 degrees West of True North (at 4/25/2016)
Grid North is 0.42 degrees West of True North
To correct azimuth from True to Grid add 0.42 degrees
To correct azimuth from Magnetic to Grid subtract 8.62 degrees

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Office of Oil & Gas

WW-9
(4/16)

API Number 47 - _____ - _____
Operator's Well No. MEPCO 7H

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Northeast Natural Energy LLC OP Code 494498281

Watershed (HUC 10) Jakes Run of Dunkard Creek Quadrangle Blacksville

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes ☑ No ☐

Will a pit be used? Yes ☐ No ☑

If so, please describe anticipated pit waste: N/A

Will a synthetic liner be used in the pit? Yes ☐ No ☐ If so, what ml.? N/A

Proposed Disposal Method For Treated Pit Wastes:

_____ Land Application
_____ Underground Injection (UIC Permit Number _____)
■ Reuse (at API Number unknown at this time, TBD)
■ Off Site Disposal (Supply form WW-9 for disposal location)
_____ Other (Explain _____

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Will closed loop system be used? If so, describe: Yes, Please See Attachment "A"

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Air-Vertical; Oil Based - Curve & Horizonta

-If oil based, what type? Synthetic, petroleum, etc. Synthetic Oil Based Mud

Additives to be used in drilling medium? Organophilic Clay Viscosifiers, Lime, Unsaturated Fatty Acids, CaCl, Barite, Emulsifiers, Mica LCM, Water Loss Agents

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Removed Offsite - Please See Attachment "A"

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) _____

-Landfill or offsite name/permit number? Please See Attachment "A"

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature Hollie M Medley

Company Official (Typed Name) Hollie M. Medley

Company Official Title Regulatory Coordinator

OFFICIAL SEAL
STATE OF WEST VIRGINIA
NOTARY PUBLIC
Michael Eisenhauer
156 Meadowridge Townhomes
Morgantown, WV 26505
My Commission Expires Sep. 25, 2020

Subscribed and sworn before me this 23 day of May, 2016

Michael Eisenhauer / Notary Public

My commission expires September 25, 2020

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Form WW-9

Operator's Well No. MEPCO 7H

Northeast Natural Energy LLC

Proposed Revegetation Treatment: Acres Disturbed 12.80 Prevegetation pH 5-7

Lime 2 Tons/acre or to correct to pH 7

Fertilizer type 19-19-19

Fertilizer amount 300 lbs/acre

Mulch 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Orchard Grass	46	Orchard Grass	46
Red Clover	8	Red Clover	8
Tetraploid Perennial Rye	16	Tetraploid Perennial Rye	16
Timothy 15 Annual Rye 15		Timothy 15 Annual Rye 15	

Attach:
Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, include dimensions (L x W x D) of the pit, and dimensions (L x W), and area in acreage, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Gayne J Knott

Comments:

4706101758

Title: Inspector Date: 5/23/2016

Field Reviewed? (X) Yes ( ) No

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Attachment A to WW-9

Northeast Natural Energy LLC ("NNE") plans to utilize a closed loop process for its drilling of the MEPCO 7H well. Return flow from the well will be separated into its liquid and solid form. Liquids will be held in steel tanks and reused in the drilling and completion process or disposed of at an approved facility listed below. Solids removed from the stream will be diverted to steel half-round tanks where they will be solidified on site and taken to disposal as they are accumulated.

MEPCO 7H Drill Cuttings will be taken to disposal at one or more of the following disposal/approved waste facilities, unless listed facilities are no longer approved to accept waste at time of disposal:

- Westmoreland Landfill (Tervita) – Belle Vernon, PA (Permit # 100277)
- Meadowfill Landfill (Waste Management) – Bridgeport, WV (Permit # SWF 103298)
- Max Environmental – Yukon, PA (PAD004835146 and 301071)
- Max Environmental – Bulger, PA (PAD059087072 and 301359)
- Chestnut Valley Landfill (Advanced Disposal) – Export, PA (Permit # 101421)

NNE plans to reuse and recycle all flowback fluid and/or reach out to other operators in the area who may be able to reuse and recycle such fluid. However, in the event that reuse is not obtainable the fluid will be disposed of at one, or multiple, of the following disposal/approved waste facilities unless listed facilities are no longer approved to accept waste at time of disposal:

- Fairmont Brine Processing (WV NPDES #0116408)
- Green Hunter M. E. Elder 1 Disposal Well (Permit # 47-085-05151)
- Green Hunter Mason 1 Disposal Well (Permit #47-085-09721)
- Green Hunter Warren Disposal Well (Permit #34-121-2-3995)
- Green Hunter Travis Unit Disposal Well (Permit #34-121-2-4086)
- Viking Energy Corporation 20320 Disposal Well (Permit#47-039-02210)
- Ohio Oil Gathering Killbuck Disposal Well (Permit #34-075-24527)
- Ohio Oil Gathering Moran Disposal Well (Permit #34-089-24792)
- Ohio Oil Gathering Bells Run Disposal Well (Permit #34-167-29395)
- Ohio Oil Gathering Long Run Disposal Well (Permit #34-167-29658)
- Ohio Oil Gathering Newell Run Disposal Well (Permit #34-167-29685)
- Appalachian Oil Purchaser Greens Run Disposal Well (Permit #2D0732540)
- Appalachian Oil Purchaser BW#4 Disposal Well (Permit # 2D0732523)

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northeast
NATURAL ENERGY

MEPCO 7H

SITE SAFETY PLAN

May 9, 2016

MJK
5/23/2016

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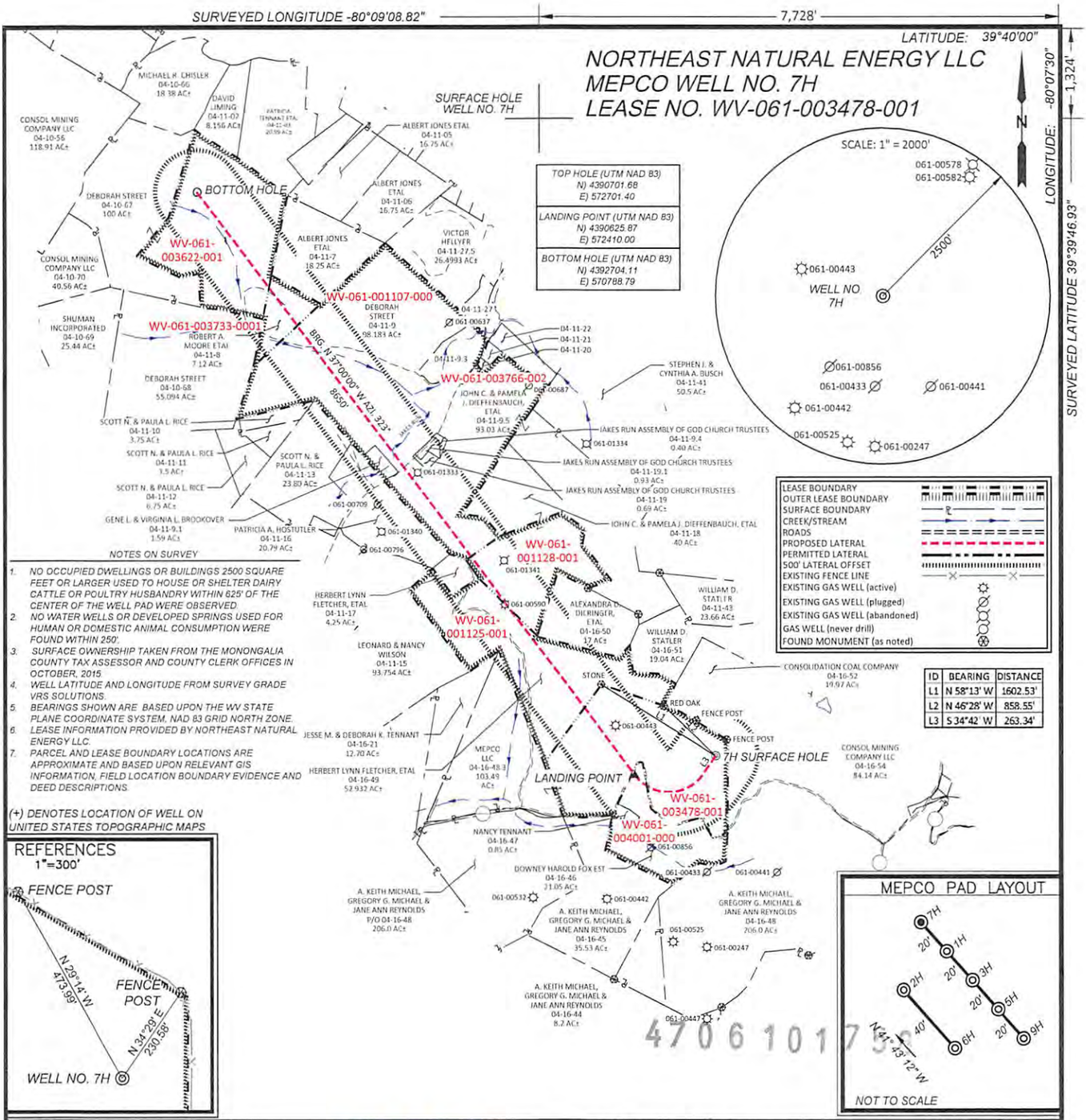
JUN 06 2016



NOTES ON SURVEY

1. NO OCCUPIED DWELLINGS OR BUILDINGS 2500 SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY WITHIN 625' OF THE CENTER OF THE WELL PAD WERE OBSERVED.
2. NO WATER WELLS OR DEVELOPED SPRINGS USED FOR HUMAN OR DOMESTIC ANIMAL CONSUMPTION WERE FOUND WITHIN 250'.
3. SURFACE OWNERSHIP TAKEN FROM THE MONONGALIA COUNTY TAX ASSESSOR AND COUNTY CLERK OFFICES IN OCTOBER, 2015.
4. WELL LATITUDE AND LONGITUDE FROM SURVEY GRADE VRS SOLUTIONS.
5. BEARINGS SHOWN ARE BASED UPON THE WV STATE PLANE COORDINATE SYSTEM, NAD 83 GRID NORTH ZONE.
6. LEASE INFORMATION PROVIDED BY NORTHEAST NATURAL ENERGY LLC.
7. PARCEL AND LEASE BOUNDARY LOCATIONS ARE APPROXIMATE AND BASED UPON RELEVANT GIS INFORMATION, FIELD LOCATION BOUNDARY EVIDENCE AND DEED DESCRIPTIONS.

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

600 Marketplace Avenue, Suite 200
Bridgeport, WV 26330
Toll Free 855-488-9539
Fax 304-933-3327
Civil & Environmental Consultants, Inc.

DENNIS E. MILLER LICENSED No. 991 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

Received JUN 06 2016

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 rules issued and prescribed by the Division of Environmental Protection.

DATE MAY 9, 2016
SCALE 1" = 1600' ACCURACY 1:2500
OPERATORS WELL No. 7H
47 - 061 - 01758 H6A
API No.

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

TYPE OF WELL:

GAS:
Production X Storage — *Deep — *Shallow X

PROPOSED WORK ON LOCATION:

Drill X Drill Deeper — Redrill — Convert —
Fracture/ Stimulate X *Plug off to Formation —
Perforate New Formation — Plug and Abandon —
Clean/ Replug — Other Than Above —
If "Other" Please see Details below—
DETAILS OF PROPOSED WORK —

*TARGET FORMATION MARCELLUS
ESTIMATED DEPTH TVD: 8,222' TMD: 17,554.86'

WELL AREA & LOCATION INFORMATION:

ELEVATION SOURCE DGPS (OPUS)
ELEVATION 1448.16' (EXISTING), 1424.00' (PROPOSED)
WATERSHED JAKES RUN OF DUNKARD CREEK DISTRICT CLAY
COUNTY MONONGALIA TOPO QUAD BLACKSVILLE
SURFACE OWNER MEPCO LLC
ACREAGE 103.49 ±
ROYALTY OWNER NNE LLC ET AL (LEASE NO. WV-061-003478-001)
LEASE ACREAGE 361.72 ±

WELL OPERATOR NORTHEAST NATURAL ENERGY LLC
ADDRESS 707 VIRGINIA STREET EAST, SUITE 1200
CHARLESTON, WV 25301

DESIGNATED AGENT JOHN ADAMS
ADDRESS 707 VIRGINIA STREET EAST, SUITE 1200
CHARLESTON, WV 25301

MEPCO 7H - Area (

API Number	Well Name	Well Number	Operator
47-061-00394		5069	CNX Gas Company LLC
47-061-00443		14	Eddy, Mark & Harry
47-061-00590		1	Chisler Brothers Contracting, LLC
47-061-00709		1	Consolidated Coal Company
47-061-01333		3-26	Noumenon Corporation
47-061-01341		3-28	Noumenon Corporation
47-061-00697	A & O CROSS	2	CONSOLIDATION COAL CO.
47-061-71287	O TENNANT		---------- UNKNOWN ----------
47-061-71288	MINTA TENNANT		PHILADELPHIA OIL CO.
47-061-71295	NOAH WRIGHT	1	---------- UNKNOWN ----------
47-061-71336	JOHN WRIGHT	4	---------- UNKNOWN ----------

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of Review

Latitude (NAD 27)	Longitude (NAD 27)	TMd	TVD	Producing Formation
39.677834	-80.171272	n/a	3205'	plugged
39.663997	-80.156702	n/a	3262'	Pittsburgh
39.667927	-80.161393	n/a	ukn	unknown
39.671121	-80.166838	n/a	1330'	plugged
39.672173	-80.165133	n/a	490'	Pittsburgh-plugged
39.669346	-80.161452	N/A	676'	Pittsburgh-plugged
39.67290	-80.16760	8-11-9	1090'	
39.67710	-80.17150	8-11-8		Pre 1929 No Records
39.67820	-80.17280	8-10-67		Pre 1929 No Records
39.66510	-80.15930	8-16-49		Pre 1929 No Records
39.66170	-80.15370	8-16-48.3		Pre 1929 No Records

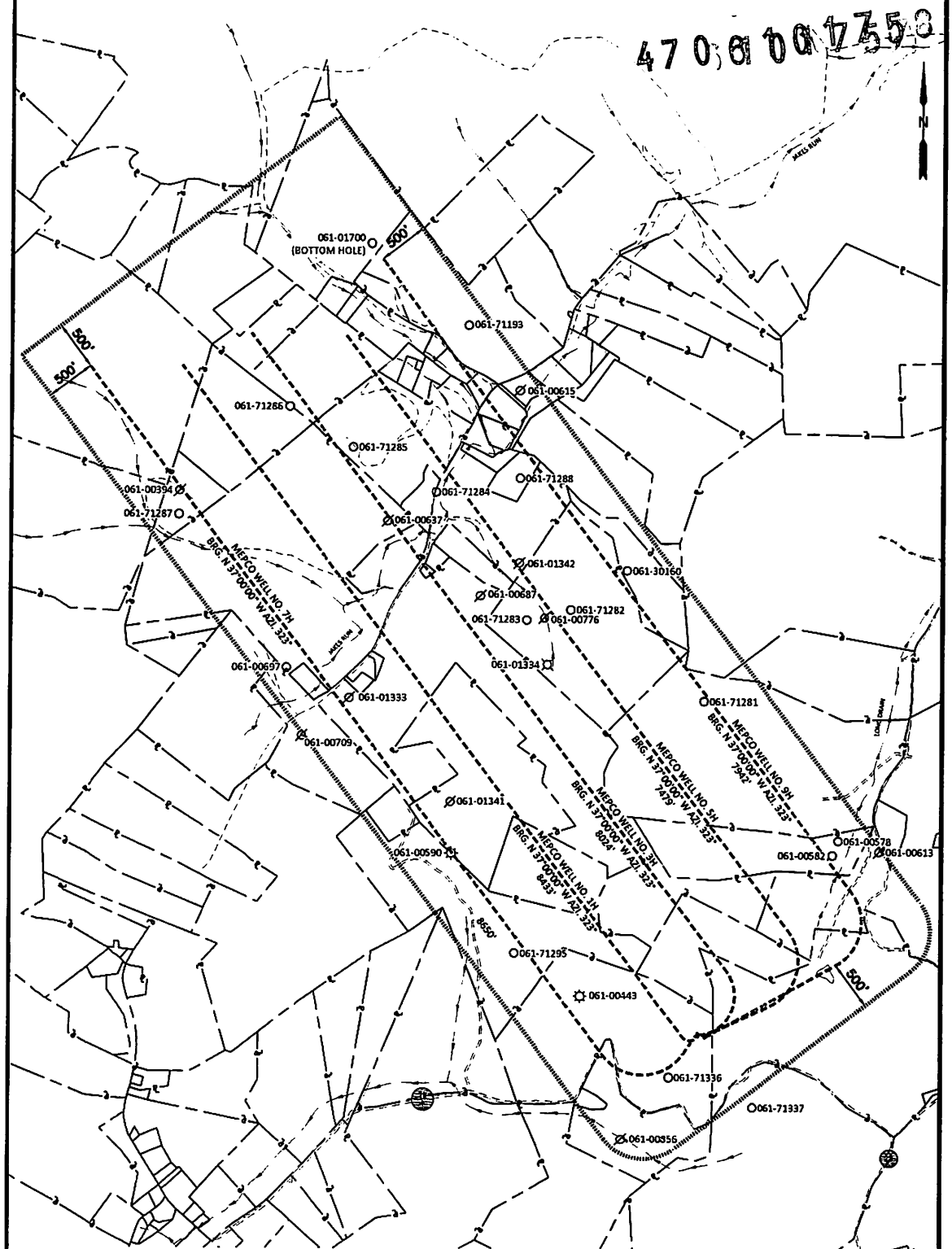
4706101753

P:\2015\150-445\-Survey\Dwg\Working\150445-NNE 824-AREA OF REVIEW-NORTH.dwg[AREA OF REVIEW] LS:(08/31/2016 - lmoody) - LP: 8/31/2016 11:26 AM

NORTHEAST NATURAL ENERGY LLC
MEPCO NORTH WELLS

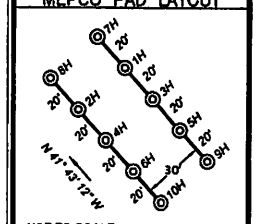
SCALE IN FEET
0 1200' 2400'

4706100775 8



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

MEPCO PAD LAYOUT



NOT TO SCALE

600 Marketplace Avenue, Suite 200
Bridgeport, WV 26330
Toll Free 855-488-9539
Fax 304-933-3327
Civil & Environmental Consultants, Inc.

DATE: AUGUST 31, 2016
SCALE: 1"=1200'

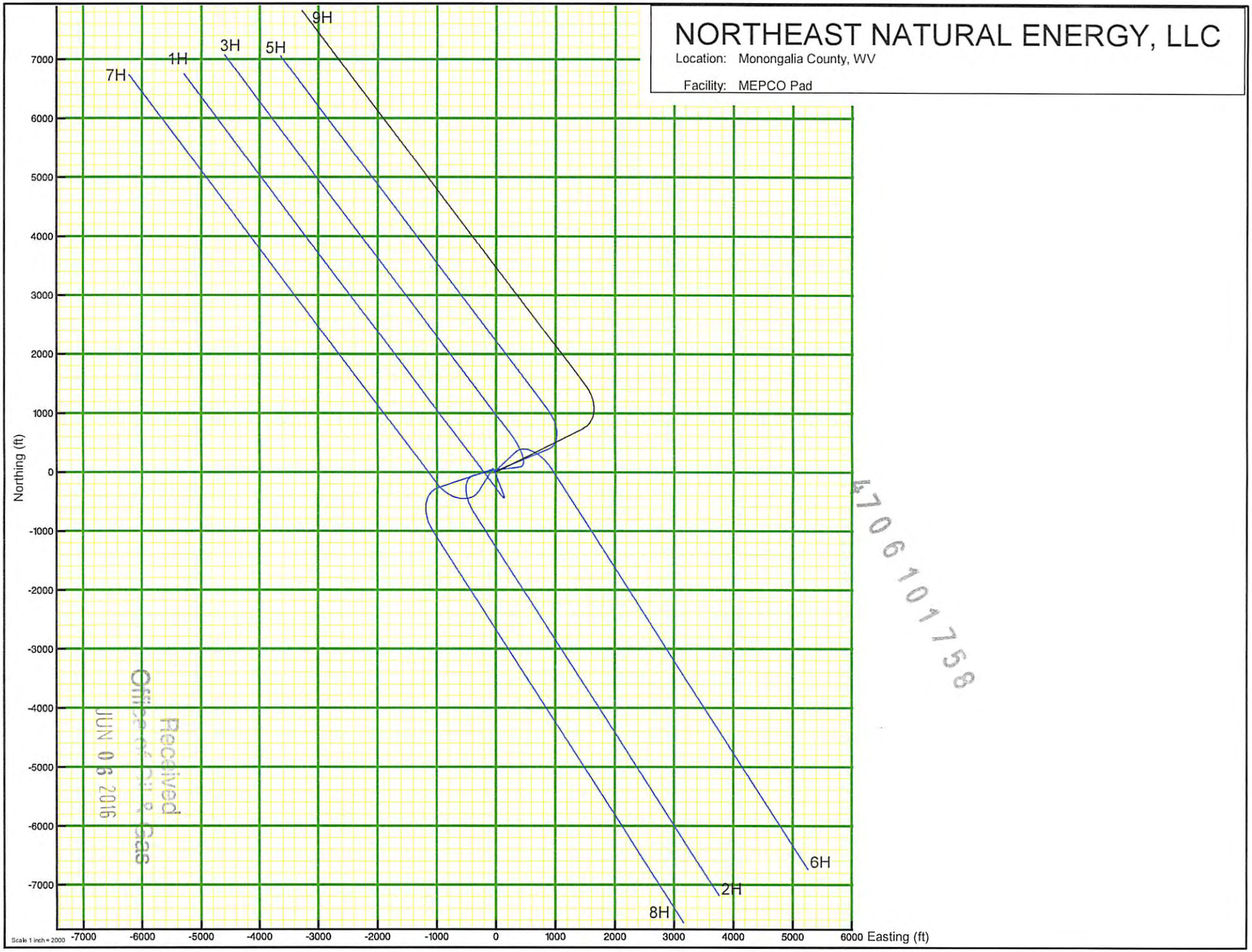
AREA OF REVIEW

SURFACE BOUNDARY	
CREEK/STREAM	
ROADS	
PROPOSED LATERAL	
500' LATERAL OFFSET	
EXISTING GAS WELL (active)	
EXISTING GAS WELL (plugged)	
EXISTING GAS WELL (abandoned)	
GAS WELL (never drill)	
EXISTING GAS WELL (prior to 1929)	

NORTHEAST NATURAL ENERGY, LLC

Location: Monongalia County, WV

Facility: MEPCO Pad



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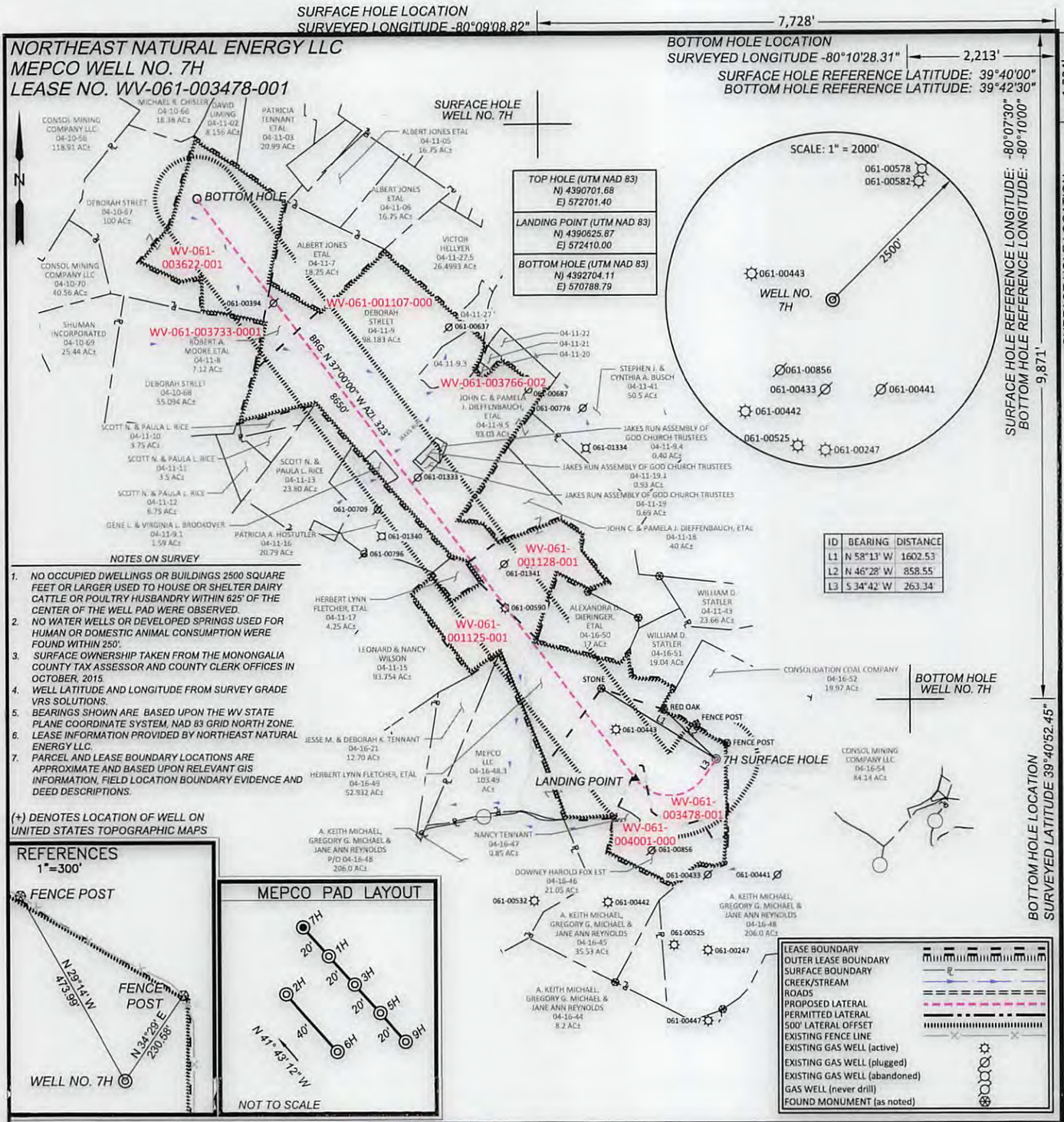
Office of Oil & Gas
JUN 06 2016



600 Marketplace Avenue, Suite 200
Bridgeport, WV 26330
Toll Free 855-488-9539
Fax 304-933-3327
Civil & Environmental Consultants, Inc.

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 rules issued and prescribed by the Division of Environmental Protection.

DENNIS E. MILLER — LICENSED — No. 991 — STATE OF WEST VIRGINIA — PROFESSIONAL SURVEYOR

DATE AUGUST 22, 2016
SCALE 1" = 1600' ACCURACY 1:2500
OPERATORS WELL No. 7H
API No. 47 - 061 - 01758H6A

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

TYPE OF WELL:

GAS:
Production X Storage — *Deep — *Shallow X

PROPOSED WORK ON LOCATION:

Drill X Drill Deeper — Redrill — Convert —
Fracture/ Stimulate X *Plug off to Formation —
Perforate New Formation — Plug and Abandon —
Clean/ Replug — Other Than Above —
If "Other" Please see Details below—
DETAILS OF PROPOSED WORK —

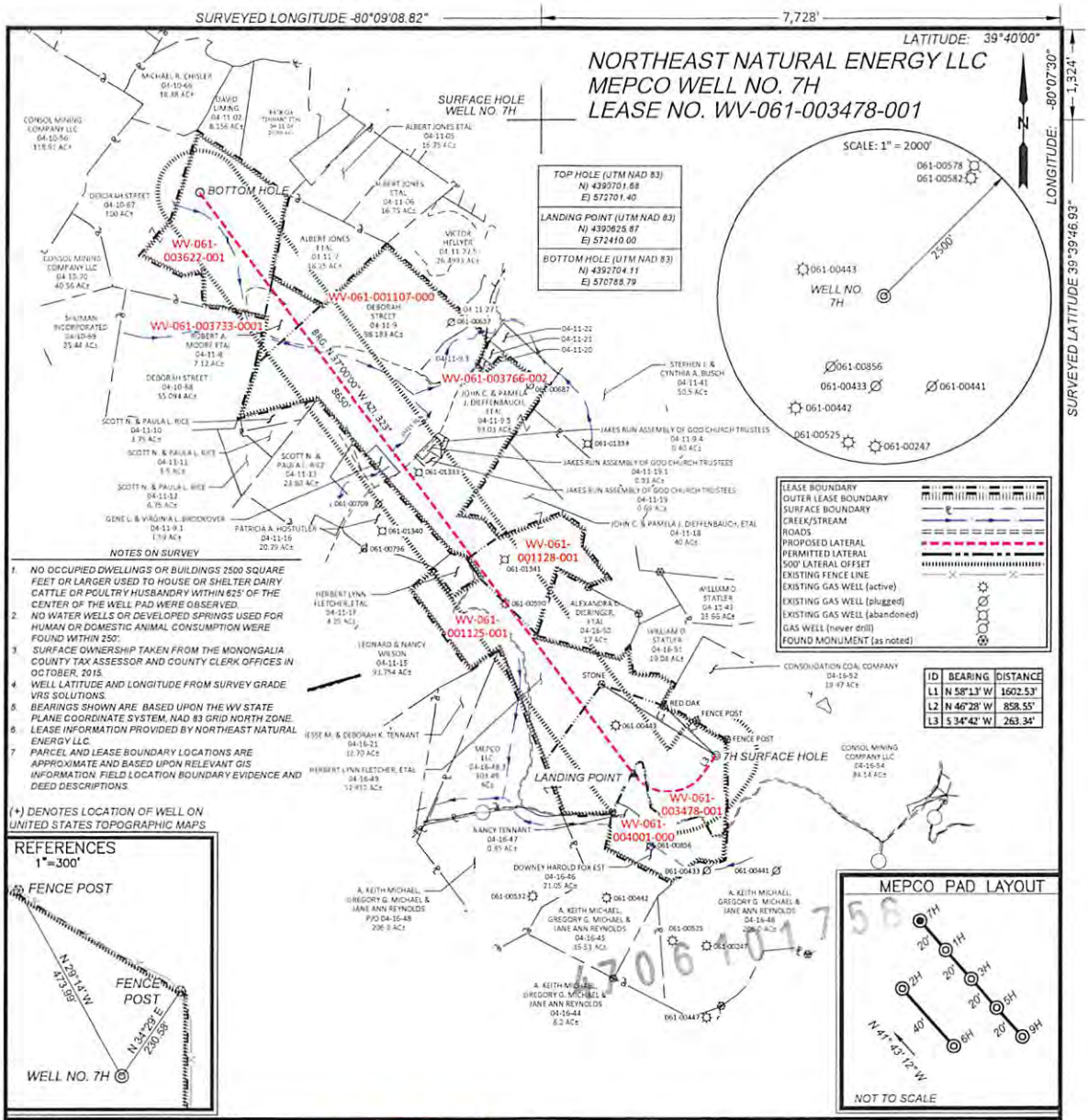
*TARGET FORMATION MARCELLUS
ESTIMATED DEPTH TVD: 8,222' TMD: 17,554.86'

WELL AREA & LOCATION INFORMATION:

ELEVATION SOURCE DGPS (OPUS)
ELEVATION 1448.16' (EXISTING), 1424.00' (PROPOSED)
WATERSHED JAKES RUN OF DUNKARD CREEK DISTRICT CLAY
COUNTY MONONGALIA TOPO QUAD BLACKSVILLE
SURFACE OWNER MEPCO LLC
ACREAGE 103.49 ±
ROYALTY OWNER NNE LLC ET AL (LEASE NO. WV-061-003478-001)
LEASE ACREAGE 361.72 ±

WELL OPERATOR NORTHEAST NATURAL ENERGY LLC
ADDRESS 707 VIRGINIA STREET EAST, SUITE 1200
CHARLESTON. WV 25301

DESIGNATED AGENT JOHN ADAMS
ADDRESS 707 VIRGINIA STREET EAST, SUITE 1200
CHARLESTON. WV 25301



600 Marketplace Avenue, Suite 200
Bridgeport, WV 26330
Toll Free 855-488-9539
Fax 304-933-3327
Civil & Environmental Consultants, Inc.

DENNIS E. MILLER LICENSED No. 991 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

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 rules issued and prescribed by the Division of Environmental Protection.

DATE MAY 9, 2016
SCALE 1" = 1600' ACCURACY 1:2500
OPERATORS WELL No. 7H
API No. 47 - 061 - 01758

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

TYPE OF WELL:

GAS:
Production X Storage — *Deep — *Shallow X

PROPOSED WORK ON LOCATION:

Drill X Drill Deeper — Redrill — Convert —
Fracture/ Stimulate X *Plug off to Formation —
Perforate New Formation — Plug and Abandon —
Clean/ Replug — Other Than Above —
If "Other" Please see Details below—
DETAILS OF PROPOSED WORK

*TARGET FORMATION MARCELLUS
ESTIMATED DEPTH TVD: 8,222' TMD: 17,554.86'

WELL AREA & LOCATION INFORMATION:

ELEVATION SOURCE DGPS (OPUS)
ELEVATION 1448.16' (EXISTING), 1424.00' (PROPOSED)
WATERSHED JAKES RUN OF DUNKARD CREEK DISTRICT CLAY
COUNTY MONONGALIA TOPO QUAD BLACKSVILLE
SURFACE OWNER MEPCO LLC
ACREAGE 103.49 ±
ROYALTY OWNER NNE LLC ET AL (LEASE NO. WV-061-003478-001)
LEASE ACREAGE 361.72 ±

WELL OPERATOR NORTHEAST NATURAL ENERGY LLC
ADDRESS 707 VIRGINIA STREET EAST, SUITE 1200
CHARLESTON, WV 25301

DESIGNATED AGENT JOHN ADAMS
ADDRESS 707 VIRGINIA STREET EAST, SUITE 1200
CHARLESTON, WV 25301

WW-6A1
(5/13)

Operator's Well No. MEPCO 7H

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

Please see attachment

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

4706101758

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 LLC
By: Hollie M. Medley
Its: Regulatory Coordinator

WW-6A1 Operator's Well No. MEPCO 7H

NNE Lease No.	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
WV-061-003622-001	KRIER, MARGARET WRIGHT AND GARY	Northeast Natural Energy LLC	DEED	1539/195
WV-061-003622-002	SUSKIND, MARY WRIGHT AND I. RUSSELL	Northeast Natural Energy LLC	DEED	1539/234
WV-061-003622-003	WRIGHT, M. DONALD	Northeast Natural Energy LLC	DEED	1539/531
WV-061-003733-001	LINDERMAN, PAUL	Northeast Natural Energy LLC	0.125 or greater	1542/26
WV-061-003733-002	MALOTT, RONALD N. AND PATRICIA S.	Northeast Natural Energy LLC	0.125 or greater	1541/844
WV-061-003733-004	LIPSCOMB, MARTHA E. AND BRUCE A.	Northeast Natural Energy LLC	0.125 or greater	1545/315
WV-061-003777-001	TENNANT, PATRICIA	Northeast Natural Energy LLC	0.125 or greater	1542/526
WV-061-003777-002	JOHNSON, WILLIAM A.	Northeast Natural Energy LLC	0.125 or greater	1545/84
WV-061-003777-003	HATFIELD, EDWIN KEITH	Northeast Natural Energy LLC	0.125 or greater	1545/80
WV-061-003824-001	ZABOROWSKI, MARY FRANCIS	Northeast Natural Energy LLC	0.125 or greater	1545/76
WV-061-003826-001	MARCELLUS MINERAL GROUP LLC	Northeast Natural Energy LLC	0.125 or greater	1545/368
WV-061-003778-001	JONES, ALBERT	Northeast Natural Energy LLC	0.125 or greater	1542/390
WV-061-003778-002	LEMLEY, JANET M. AND EARL W.	Northeast Natural Energy LLC	0.125 or greater	1541/782
WV-061-001107-000	SHUMAN, INC.	*Chesapeake Appalachia, LLC.	0.125 or greater	1429/371
WV-061-002265-001	WRIGHT, KENNETH L.	*Chesapeake Appalachia, LLC.	0.125 or greater	1508/553
WV-061-002265-002	CODY, DOROTHY C.	*Chesapeake Appalachia, LLC.	0.125 or greater	1508/568
WV-061-002265-003	MYERS, JUNE C.	*Chesapeake Appalachia, LLC.	0.125 or greater	1507/461
WV-061-002265-004	WRIGHT, WILLIS G.	*Chesapeake Appalachia, LLC.	0.125 or greater	1510/429
WV-061-003766-002	SUSKIND, MARY WRIGHT AND I. RUSSELL	Northeast Natural Energy LLC	DEED	1541/779
WV-061-001128-001	CODY, DOROTHY C.	*Chesapeake Appalachia, LLC.	0.125 or greater	1473/268
WV-061-001128-002	MYERS, JUNE C.	*Chesapeake Appalachia, LLC.	0.125 or greater	1473/269
WV-061-001128-003	LONDOT, WILMA	*Chesapeake Appalachia, LLC.	0.125 or greater	1472/589
WV-061-001128-004	WRIGHT, KENNETH L.	*Chesapeake Appalachia, LLC.	0.125 or greater	1472/590
WV-061-001128-005	WRIGHT, WILLIS G.	*Chesapeake Appalachia, LLC.	0.125 or greater	1472/591
WV-061-001128-006	WRIGHT, EMILY B.	*Chesapeake Appalachia, LLC.	0.125 or greater	1474/264
WV-061-001128-007	SMYRES, ETHEL L.	*Chesapeake Appalachia, LLC.	0.125 or greater	1474/365
WV-061-001128-008	CRYDER, MARGARET H.	*Chesapeake Appalachia, LLC.	0.125 or greater	1474/366
WV-061-001128-009	DUNLAP, DOROTHY W.	*Chesapeake Appalachia, LLC.	0.125 or greater	1474/367
WV-061-002165-001	CRYDER, CYNTHIA	*Chesapeake Appalachia, LLC.	0.125 or greater	1505/728
WV-061-002165-002	YOUNG, LAURA K.	*Chesapeake Appalachia, LLC.	0.125 or greater	1505/738
WV-061-002165-003	CRYDER, JASON R.	*Chesapeake Appalachia, LLC.	0.125 or greater	1507/258
WV-061-002928-001	THE GRANT C. HANSON REVOCABLE TRUST	*Chesapeake Appalachia, LLC.	0.125 or greater	1439/184
WV-061-001125-001	JOSHI, MARILYN DARLENE	*Chesapeake Appalachia, LLC.	0.125 or greater	1467/647
WV-061-001125-002	CHISLER, BRUCE ALLEN	Northeast Natural Energy LLC	0.125 or greater	1543/800
WV-061-002836-001	PRICE, NANCY ARLENE AND MATTHEW BROWN	*Chesapeake Appalachia, LLC.	0.125 or greater	1424/781
WV-061-003478-001	LORING, GARY G.	Northeast Natural Energy LLC	Deed	1521/99
WV-061-003600-001	LORING, GARY G.	Northeast Natural Energy LLC	DEED	1550/343
WV-061-003541-001	LORING, GARY G.	Northeast Natural Energy LLC	DEED	1548/750
WV-061-004001-000	WRIGHT, JOHN W.	*South Penn Oil Co.	0.125 or greater	39/202
WV-061-004002-000	TENNANT, NIMROD AND NANCY	*South Penn Oil Co.	0.125 or greater	39/361
WV-061-004001-000	WRIGHT, JOHN W.	*South Penn Oil Co.	0.125 or greater	39/202

*See Attachment

4706101750

Received
Office of Oil & Gas
JUN 06 2016

Chesapeake Appalachia, LLC.

|

Northeast Natural Energy
Assignment
BK 120/769

4706101758

South Penn Oil Company
Assignment
DR 32/240
South Penn Oil Company
|
South Penn Natural Gas Company
Assingment
DR 304/547
South Penn Natural Gas Company
|
South Penn Oil Company
Assignment
DR 580/311
South Penn Oil Company merged with
Pennzoil Company and United Gas
|
Pennzoil United Inc.
Assignment
DR 672/665
Pennzoil United Inc.

|
W. H. Allen
Assignment
DR 695/557
W. H. Allen
|
Union Trust & Deposit Company
Assignment
DR 695/556
W.H. Allen and James A. Allen
|

Edwin Associates, Inc.
Assignment
DR 754/594

Union Trust National Bank, as successor by conversion of Union Trust & Deposit Company
|
Edwin Associates, Inc.
Edwin Associates, Inc.
|
J. T. Carson
Assignment
DR 754/600
J. T. Carson
|
Thompson/Texas Associates Partnership
Assignment
DR 754/606
Thompson/Texas Associates Partnership, Thompson Pipe and Supply Company, Jack O. Thompson, Harold J. Arnsteen, Equidyne Investment Associates, Inc., individually and as partners and/or joint venturers in that entity known as Thompson/Texas Associates Partnership
|
Mark Eddy
Assignment
AR 21/22
|
Beth Eddy, Debbie Eddy and Melissa Eddy
Assignment
AR 21/582
Beth Stewart, Debbie Morris and Melissa Matheny
|
Mark V. Eddy
Assignment
AR 102/275
Mark V. Eddy & Betty Eddy (h&w) & Eddy Brothers
|
Northeast Natural Energy LLC
Assignment
AB 123/363

4706101755

Received
Office of Oil & Gas
JUN 06 2016

WW-60
(7-01)

DATE: June 1, 20 16
OPERATOR'S
WELL NO. MEPCO 1H, 3H, 5H, 7H, 8H and 9H

API NO: 47-
State County Permit No.

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

A F F I D A V I T

State of West Virginia

County of Monongalia

I, Britney Crookshanks (the designated owner or operator, or authorized representative thereof), after being duly sworn, do declare that the undersigned is authorized by the owner of the working interest in the well permit application to which this affidavit is attached to state that (he, she, or it) shall tender to the owner of the oil and gas in place not less than one-eighth of the total amount paid to or received by or allowed to the owner of the working interest at the wellhead for the oil or gas so extracted, produced, or marketed before deducting the amount to be paid or set aside for the owner of the oil or gas in place, or all such oil or gas to be extracted, produced, or marketed from the well. West Virginia Code 22-6-8(e).

Signed: [signature] 4706101758

Taken, subscribed and sworn to before me this 1 day of June, 20 16.

Received
Office of Oil & Gas
JUN 06 2016

[signature]
Notary Public

My Commission expires: September 25, 2020

OFFICIAL SEAL
STATE OF WEST VIRGINIA
NOTARY PUBLIC
Michael Eisenhauer
156 Meadowridge Townhomes
Morgantown, WV 26505
My Commission Expires Sep. 25, 2020

northeast
NATURAL ENERGY

February 12, 2016

WV Department of Environmental Protection
Office of Oil and Gas Management
601 57th Street, SE
Charleston, West Virginia 25304

RE: MEPCO 1H, 3H, 5H, 7H, and 9H

Dear Permit Reviewer:

Please be advised that Northeast Natural Energy LLC has the right to drill, extract and produce the minerals beneath the roads identified as Wright Bridge Road (State Route 29/5), Jakes Run Road (State Route 29), Mt. Hermon (State Route 29/4); Louge Tennant Road (State Route 20/1) on the enclosed survey plat.

Sincerely,

Jeannie Morgan Johnson, CPL
Vice President – Land Operations

Enclosure

Received
Office of Oil & Gas
JUN 06 2016
4706101758

WW-6AC
(1/12)

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE CERTIFICATION

Date of Notice Certification: 05/26/2016

API No. 47- _____ - _____
Operator's Well No. MEPCO 7H
Well Pad Name: MEPCO

Notice has been given:
Pursuant to the provisions in West Virginia Code § 22-6A, the Operator has provided the required parties with the Notice Forms listed below for the tract of land as follows:

State:	West Virginia	UTM NAD 83	Easting:	572701.40
County:	Monongalia		Northing:	4390701.68
District:	Clay	Public Road Access:		County Route 29/4
Quadrangle:	Blacksville	Generally used farm name:		MEPCO
Watershed:	Jakes Run of Dunkard Creek			

Pursuant to West Virginia Code § 22-6A-7(b), every permit application filed under this section shall be on a form as may be prescribed by the secretary, shall be verified and shall contain the following information: (14) A certification from the operator that (i) it has provided the owners of the surface described in subdivisions (1), (2) and (4), subsection (b), section ten of this article, the information required by subsections (b) and (c), section sixteen of this article; (ii) that the requirement was deemed satisfied as a result of giving the surface owner notice of entry to survey pursuant to subsection (a), section ten of this article six-a; or (iii) the notice requirements of subsection (b), section sixteen of this article were waived in writing by the surface owner; and Pursuant to West Virginia Code § 22-6A-11(b), the applicant shall tender proof of and certify to the secretary that the notice requirements of section ten of this article have been completed by the applicant.

Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following: *PLEASE CHECK ALL THAT APPLY	OOG OFFICE USE ONLY
☐ 1. NOTICE OF SEISMIC ACTIVITY or ☐ NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED	☐ RECEIVED/ NOT REQUIRED
☑ 2. NOTICE OF ENTRY FOR PLAT SURVEY or ☐ NO PLAT SURVEY WAS CONDUCTED	☐ RECEIVED
☑ 3. NOTICE OF INTENT TO DRILL or ☐ NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or ☐ WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)	☐ RECEIVED/ NOT REQUIRED
☑ 4. NOTICE OF PLANNED OPERATION	☐ RECEIVED
☑ 5. PUBLIC NOTICE	☐ RECEIVED
☑ 6. NOTICE OF APPLICATION	☐ RECEIVED

4706101750

Received
Office of Oil & Gas
JUN 06 2016

Required Attachments:
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

WW-6AC
(1/12)

Certification of Notice is hereby given:

THEREFORE, I Hollie M. Medley, have read and understand the notice requirements within West Virginia Code § 22-6A. I certify that as required under West Virginia Code § 22-6A, I have served the attached copies of the Notice Forms, identified above, to the required parties through personal service, by registered mail or by any method of delivery that requires a receipt or signature confirmation. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Notice Certification and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator:	Northeast Natural Energy LLC	Address:	707 Virginia Street East, Suite 1200
By:	Hollie M. Medley		Charleston, WV 25301
Its:	Regulatory Coordinator	Facsimile:	304.241.5972
Telephone:	304.212.0422	Email:	hmedley@nne-llc.com

Hollie M Medley

NOTARY SEAL
OFFICIAL SEAL
STATE OF WEST VIRGINIA
NOTARY PUBLIC
Michael Eisenhauer
156 Meadowridge Townhomes
Morgantown, WV 26505
My Commission Expires Sep. 25, 2020

Subscribed and sworn before me this 26 day of May, 2016.

Michael Eisenhauer Notary Public

My Commission Expires September 25, 2020

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

Received
Office of Oil & Gas
JUN 06 2016

4706101755

WW-6A
(9-13)

API NO. 47-_____-_____
OPERATOR WELL NO. MEPCO 7H
Well Pad Name: MEPCO

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF APPLICATION

Notice Time Requirement: notice shall be provided no later than the **filing date of permit application.**

Date of Notice: 5/9/2016 **Date Permit Application Filed:** 5/31/2016

Notice of:

☑ PERMIT FOR ANY WELL WORK ☐ CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT

Delivery method pursuant to West Virginia Code § 22-6A-10(b)

☐ PERSONAL SERVICE ☑ REGISTERED MAIL ☐ METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to W. Va. Code § 22-6A-10(b) no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner. W. Va. Code R. § 35-8-5.7.a requires, in part, that the operator shall also provide the Well Site Safety Plan ("WSSP") to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

☑ Application Notice ☑ WSSP Notice ☑ E&S Plan Notice ☑ Well Plat Notice is hereby provided to:

☑ SURFACE OWNER(s)
Name: Please See Attachment
Address: _____
Name: _____
Address: _____

☑ SURFACE OWNER(s) (Road and/or Other Disturbance)
Name: Please See Attachment
Address: _____
Name: _____
Address: _____

☐ SURFACE OWNER(s) (Impoundments or Pits)
Name: _____
Address: _____

☑ COAL OWNER OR LESSEE
Name: Please See Attachment
Address: _____

☐ COAL OPERATOR
Name: _____
Address: _____

☑ SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)
Name: Please See Attachment
Address: _____

☐ OPERATOR OF ANY NATURAL GAS STORAGE FIELD
Name: _____
Address: _____

*Please attach additional forms if necessary

4706101758

WW-6A
(8-13)

API NO. 47-_____-_____
OPERATOR WELL NO. MEPCO 7H
Well Pad Name: MEPCO

Notice is hereby given:
Pursuant to West Virginia Code § 22-6A-10(b), notice is hereby given that the undersigned well operator has applied for a permit for well work or for a certificate of approval for the construction of an impoundment or pit.

This Notice Shall Include:
Pursuant to W. Va. Code § 22-6A-10(b), this notice shall include: (1) copies of the application; (2) the erosion and sediment control plan required by section seven of this article; and (3) the well plat.

Pursuant to W. Va. Code § 22-6A-10(f), this notice shall include: (1) a statement of the time limits for filing written comments; (2) who may file written comments; (3) the name and address of the secretary for the purpose of filing the comments and obtaining additional information; and (4) a statement that the persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

Pursuant to W. Va. Code R. § 35-8-5.7.a, the operator shall provide the Well Site Safety Plan to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Pursuant to W. Va. Code R. § 35-8-15.2.c, this notice shall: (1) contain a statement of the surface owner's and water purveyor's right to request sampling and analysis; (2) advise the surface owner and water purveyor of the rebuttable presumption for contamination or deprivation of a fresh water source or supply; advise the surface owner and water purveyor that refusal to allow the operator to conduct a pre-drilling water well test constitutes a method to rebut the presumption of liability; (3) advise the surface owner and water purveyor of his or her independent right to sample and analyze any water supply at his or her own expense; advise the surface owner and water purveyor whether or not the operator will utilize an independent laboratory to analyze any sample; and (4) advise the surface owner and or water purveyor that he or she can obtain from the Chief a list of water testing laboratories in the subject area capable of and qualified to test water supplies in accordance with standard acceptable methods.

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Location Restrictions
Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2012, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items

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examined in the study required by this subsection, the secretary shall have the authority to propose for promulgation legislative rules establishing guidelines and procedures regarding reasonable levels of noise, light, dust and volatile organic compounds relating to drilling horizontal wells, including reasonable means of mitigating such factors, if necessary.

Water Well Testing:
Pursuant to West Virginia Code § 22-6A-10(d), notification shall be made, with respect to surface landowners identified in subsection (b) or water purveyors identified in subdivision (5), subsection (b) of this section, of the opportunity for testing their water well. The operator shall provide an analysis to such surface landowner or water purveyor at their request.

Water Testing Laboratories:
Pursuant to West Virginia Code § 22-6A-10(i), persons entitled to notice pursuant to subsection (b) of this section may contact the department to ascertain the names and locations of water testing laboratories in the subject area capable and qualified to test water supplies in accordance with standard accepted methods. In compiling that list of names the department shall consult with the state Bureau for Public Health and local health departments. A surface owner and water purveyor has an independent right to sample and analyze any water supply at his or her own expense. The laboratory utilized by the operator shall be approved by the agency as being certified and capable of performing sample analyses in accordance with this section.

Rebuttable Presumption for Contamination or Deprivation of a Fresh Water Source or Supply:

W. Va. Code § 22-6A-18 requires that (b) unless rebutted by one of the defenses established in subsection (c) of this section, in any action for contamination or deprivation of a fresh water source or supply within one thousand five hundred feet of the center of the well pad for horizontal well, there is a rebuttable presumption that the drilling and the oil or gas well or either was the proximate cause of the contamination or deprivation of the fresh water source or supply. (c) In order to rebut the presumption of liability established in subsection (b) of this section, the operator must prove by a preponderance of the evidence one of the following defenses: (1) The pollution existed prior to the drilling or alteration activity as determined by a predrilling or prealteration water well test. (2) The landowner or water purveyor refused to allow the operator access to the property to conduct a predrilling or prealteration water well test. (3) The water supply is not within one thousand five hundred feet of the well. (4) The pollution occurred more than six months after completion of drilling or alteration activities. (5) The pollution occurred as the result of some cause other than the drilling or alteration activity. (d) Any operator electing to preserve its defenses under subdivision (1), subsection (c) of this section shall retain the services of an independent certified laboratory to conduct the predrilling or prealteration water well test. A copy of the results of the test shall be submitted to the department and the surface owner or water purveyor in a manner prescribed by the secretary. (e) Any operator shall replace the water supply of an owner of interest in real property who obtains all or part of that owner's supply of water for domestic, agricultural, industrial or other legitimate use from an underground or surface source with a comparable water supply where the secretary determines that the water supply has been affected by contamination, diminution or interruption proximately caused by the oil or gas operation, unless waived in writing by that owner. (f) The secretary may order the operator conducting the oil or gas operation to: (1) Provide an emergency drinking water supply within twenty-four hours; (2) Provide temporary water supply within seventy-two hours; (3) Within thirty days begin activities to establish a permanent water supply or submit a proposal to the secretary outlining the measures and timetables to be used in establishing a permanent supply. The total time in providing a permanent water supply may not exceed two years. If the operator demonstrates that providing a permanent replacement water supply cannot be completed within two years, the secretary may extend the time frame on case-by-case basis; and (4) Pay all reasonable costs incurred by the real property owner in securing a water supply. (g) A person as described in subsection (b) of this section aggrieved under the provisions of subsections (b), (e) or (f) of this section may seek relief in court... (i) Notwithstanding the denial of the operator of responsibility for the damage to the real property owner's water supply or the status of any appeal on determination of liability for the damage to the real property owner's water supply, the operator may not discontinue providing the required water service until authorized to do so by the secretary or a court of competent jurisdiction.

Written Comment:
Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary. All persons described in West Virginia Code § 22-6A-10(b) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

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Chief, Office of Oil and Gas
Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
(304) 926-0450

Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water. **NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.**

WW-6A
(8-13)

API NO. 47- ____ - ____
OPERATOR WELL NO. MEPCO 7H
Well Pad Name: MEPCO

Time Limits and Methods for Filing Comments.

The law requires these materials to be served on or before the date the operator files its Application. You have **THIRTY (30) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Pursuant to West Virginia Code § 22-6A-11(c)(2), Any objections of the affected coal operators and coal seam owners and lessees shall be addressed through the processes and procedures that exist under sections fifteen, seventeen and forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article. The written comments filed by the parties entitled to notice under subdivisions (1), (2), (4), (5) and (6), subsection (b), section ten of this article shall be considered by the secretary in the permit issuance process, but the parties are not entitled to participate in the processes and proceedings that exist under sections fifteen, seventeen or forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article.

Comment Requirements

Your comments must be in writing and include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

Disclaimer: All comments received will be placed on our web site http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx and the applicant will automatically be forwarded an email notice that such comments have been submitted. The applicant will be expected to provide a response to comments submitted by any surface owner, water purveyor or natural gas storage operator noticed within the application.

Permit Denial or Condition

The Chief has the power to deny or condition a well work permit. Pursuant to West Virginia Code § 22-6A-8(d), the permit may not be issued or be conditioned, including conditions with respect to the location of the well and access roads prior to issuance if the director determines that:

(1) The proposed well work will constitute a hazard to the safety of persons;
(2) The plan for soil erosion and sediment control is not adequate or effective;
(3) Damage would occur to publicly owned lands or resources; or
(4) The proposed well work fails to protect fresh water sources or supplies.

A permit may also be denied under West Virginia Code § 22-6A-7(k), the secretary shall deny the issuance of a permit if the secretary determines that the applicant has committed a substantial violation of a previously issued permit for a horizontal well, including the applicable erosion and sediment control plan associated with the previously issued permit, or a substantial violation of one or more of the rules promulgated under this article, and in each instance has failed to abate or seek review of the violation within the time prescribed by the secretary pursuant to the provisions of subdivisions (1) and (2), subsection (a), section five of this article and the rules promulgated hereunder, which time may not be unreasonable.

Pursuant to West Virginia Code § 22-6A-10(g), any person entitled to submit written comments to the secretary pursuant to subsection (a), section eleven of this article, shall also be entitled to receive from the secretary a copy of the permit as issued or a copy of the order modifying or denying the permit if the person requests receipt of them as a part of the written comments submitted concerning the permit application. Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

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WW-6A
(8-13)

API NO. 47- ____ - ____
OPERATOR WELL NO. MEPCO 7H
Well Pad Name: MEPCO

Notice is hereby given by:

Well Operator: Northeast Natural Energy LLC
Address: 707 Virginia Street E., Suite 1200
Charleston, WV 25301
Telephone: 304-212-0422
Email: hmedley@nne-llc.com
Facsimile: 304-241-5972

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

Hallie Medley

OFFICIAL SEAL
STATE OF WEST VIRGINIA
NOTARY PUBLIC
Michael Eisenhauer
156 Meadowridge Townhomes
Morgantown, WV 26505
My Commission Expires Sep. 25, 2020

Subscribed and sworn before me this 31 day of May 2016.

Notary Public

My Commission Expires Sep. 25, 2020

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Surface Owner(s)
Consolidation Coal Company
Attn: Melissa Wilson
Land Agent Dipositions – Rentals
CNX Center
1000 Consol Energy Drive
Canonsburg, PA 15317

MEPCO, LLC
Attn: Will Oliver
308 Dents Run
Morgantown, WV 26501

Surface Owner(s) (Road and/or Other Disturbance)
Consolidation Coal Company
Attn: Melissa Wilson
Land Agent Dipositions – Rentals
CNX Center
1000 Consol Energy Drive
Canonsburg, PA 15317

Coal Owner or Lessee
Consol Mining Company, LLC
Attn: Analyst, Engineering and Operations Support – Coal
CNX Center
1000 Consol Energy Drive
Canonsburg, PA 15317

Murray Energy Corp.
Attn: Alex P. O'Neill
Coal – Oil and Gas Relations Manager
46226 National Road
St. Clairsville, OH 43950

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Gary G. Loring
139 Thistledown Lane
Morgantown, WV 26508

A. Keith Michael
241 Jefferson St.
Bridgeport, WV 26330

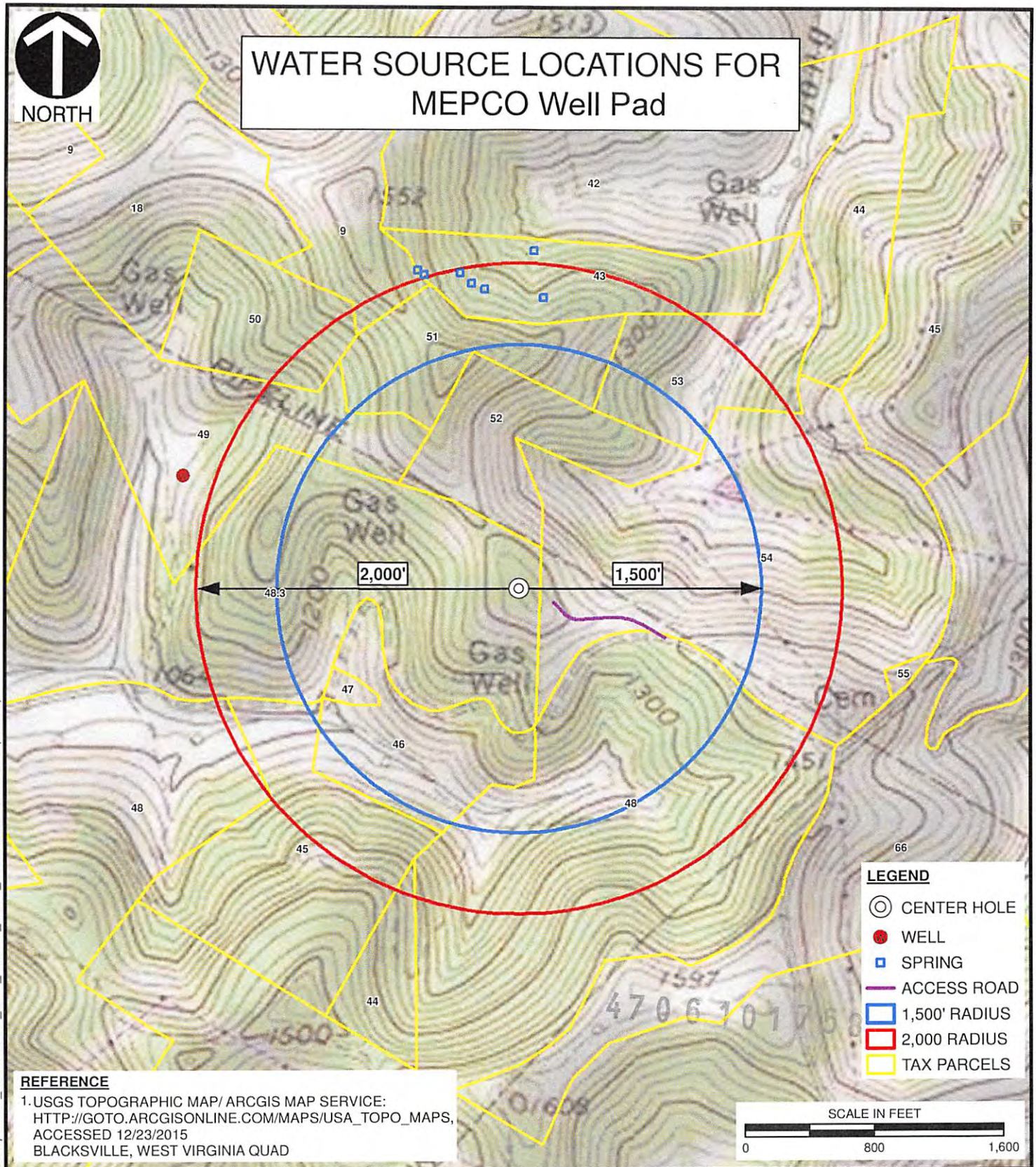
Gregory G. Michael
1176 Sands Drive
Fairmont, WV 26554

Jane Ann Reynolds
2 West Hill Drive
Fairmont, WV 26554

Surface Owner of Water Well and/or Water Purveyor(s)
Diane K. Braun, co-executrix of James E. Fletcher Estate
44 Luther Park Road
Fairview, WV 26570

William D. Statler
578 Long Drain Road
Core, WV 26541

WATER SOURCE LOCATIONS FOR MEPCO Well Pad



REFERENCE

1. USGS TOPOGRAPHIC MAP/ ARCGIS MAP SERVICE: HTTP://GOTO.ARCGISONLINE.COM/MAPS/USA_TOPO_MAPS, ACCESSED 12/23/2015 BLACKSVILLE, WEST VIRGINIA QUAD

Civil & Environmental Consultants, Inc.
600 Marketplace Suite 200 - Bridgeport, WV 26330-2820
Ph: 304-933-3119 Toll: 855-488-9539 Fax: 304-933-3327
www.cecinc.com

NORTHEAST NATURAL ENERGY LLC
MEPCO PAD
MONONGALIA COUNTY, WEST VIRGINIA

WATER SOURCES FOR MEPCO PAD

DRAWN BY:	MAF	CHECKED BY:	JDR	APPROVED BY:	*Hand signature on file SAC*	FIGURE NO:	WT
DATE:	12/21/2015	SCALE:	1 " = 800 '	PROJECT NO:	150-445.0021		

\\Svr-bridgeport\P:\2015\150-445\-GIS\Maps\Task_0021\150445_0021_WATER_WELL_TOPO.mxd 12/21/2015 (mfrank)

MEPCO

Surface Owner of Water Well and/or Water Purveyor(s)

TMP 16-49
Diane K. Braun, co-executrix of James E. Fletcher Estate
44 Luther Park Road
Fairview, WV 26570

TMP 16-43
William D. Statler
578 Long Drain Road, Core, WV 26541

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WW-6A3
(1/12)

Operator Well No. MEPCO (aka Pad 824)

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF ENTRY FOR PLAT SURVEY

Notice Time Requirement: Notice shall be provided at least **SEVEN (7)** days but no more than **FORTY-FIVE (45)** days prior to entry

Date of Notice: 10/5/2015 **Date of Planned Entry:** 10/13/2015

Delivery method pursuant to West Virginia Code § 22-6A-10a

☐ PERSONAL SERVICE ☒ REGISTERED MAIL ☐ METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to West Virginia Code § 22-6A-10(a), Prior to filing a permit application, the operator shall provide notice of planned entry on to the surface tract to conduct any plat surveys required pursuant to this article. Such notice shall be provided at least seven days but no more than forty-five days prior to such entry to: (1) The surface owner of such tract; (2) to any owner or lessee of coal seams beneath such tract that has filed a declaration pursuant to section thirty-six, article six, chapter twenty-two of this code; and (3) any owner of minerals underlying such tract in the county tax records. The notice shall include a statement that copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, which statement shall include contact information, including the address for a web page on the Secretary's web site, to enable the surface owner to obtain copies from the secretary.

Notice is hereby provided to:

☒ SURFACE OWNER(s)
Name: Please See Attachment
Address:

Name:
Address:

Name:
Address:

☒ COAL OWNER OR LESSEE
Name: Please See Attachment
Address:

☒ MINERAL OWNER(s)
Name: Please See Attachment
Address:

*please attach additional forms if necessary

Notice is hereby given:
Pursuant to West Virginia Code § 22-6A-10(a), notice is hereby given that the undersigned well operator is planning entry to conduct a plat survey on the tract of land as follows:

State:	West Virginia	Approx. Latitude & Longitude:	4390701.68, 572701.40 (UTM NAD 83)
County:	Monongalia	Public Road Access:	State Route 29/4
District:	Clay	Watershed:	Dunkard Creek
Quadrangle:	Blackvsille	Generally used farm name:	MEPCO

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

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Notice is hereby given by:

Well Operator:	Northeast Natural Energy LLC	Address:	707 Virginia Street E., Suite 1200
Telephone:	304.212.0422		Charleston, WV 25301
Email:	hmedley@nne-llc.com	Facsimile:	304-241-5972

Received
Office of Oil & Gas
JUN 05 2016

Oil and Gas Privacy Notice:
The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

MEPCO - Entry for Plat Survey

TMP	Surface Owner - Drill Site	Address
16-48.3	MEPCO, LLC, Attn: Will Oliver	308 Dents Run, Morgantown, WV 26501
16-54,52	Consolidation Coal Company, Attn: Melissa Wilson	CNX Center, 1000 Consol Energy Drive, Canonsburg, PA 15317

TMP	Surface Owner - Access Road	Address
16-48.3	MEPCO, LLC, Attn: Will Oliver	308 Dents Run, Morgantown, WV 26501
16-54,52	Consolidation Coal Company, Attn: Analyst	CNX Center, 1000 Consol Energy Drive, Canonsburg, PA 15317

TMP	Mineral Owner	Address
16-48.3	Telluric Company, Attn: Joseph Swiger	143 Distributer Drive, Morgantown, WV 26508
16-48.3	Greg Michael	1176 Sands Drive, Fairmont, WV 26554
16-48.3	Jane Reynolds	2 West Hill Drive, Fairmont, WV 26554
16-48.3	A. Keith Michael	241 Jefferson St., Bridgeport, WV 26330

TMP	Coal Owner	Address
	Consolidated Coal Company, Attn: Analyst	CNX Center, 1000 Consol Energy Drive, Canonsburg, PA 15317
	Murray Energy Corporation, Attn: Alex P. O'Neill, Coal, Oil & Gas Relations Manager	46226 National Road, St. Clairsville, OH 43950

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Office of Oil & Gas
JUN 06 2016

WW-6A4
(1/12)

Operator Well No. MEPCO 7H

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF INTENT TO DRILL

Pursuant to W. Va. Code § 22-6A-16(b), the Notice of Intent to Drill is only required if the notice requirements of W. Va. Code § 22-6A-10(a) have NOT been met or if the Notice of Intent to Drill requirement has NOT been waived in writing by the surface owner.

Notice Time Requirement: Notice shall be provided at least **TEN (10)** days prior to filing a permit application.
Date of Notice: 05/09/2016 **Date Permit Application Filed:** 05/31/2016

Delivery method pursuant to West Virginia Code § 22-6A-16(b)

☐ HAND DELIVERY ☒ CERTIFIED MAIL RETURN RECEIPT REQUESTED

Pursuant to W. Va. Code § 22-6A-16(b), at least ten days prior to filing a permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner notice of its intent to enter upon the surface owner's land for the purpose of drilling a horizontal well: *Provided,* That notice given pursuant to subsection (a), section ten of this article satisfies the requirements of this subsection as of the date the notice was provided to the surface owner: *Provided, however,* That the notice requirements of this subsection may be waived in writing by the surface owner. The notice, if required, shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative.

Notice is hereby provided to the SURFACE OWNER(s):

Name: MEPCO, LLC, Attn: Will Oliver
Address: 308 Dents Run Road
Morgantown, WV 26501

Name:
Address:

Notice is hereby given:
Pursuant to West Virginia Code § 22-6A-16(b), notice is hereby given that the undersigned well operator has an intent to enter upon the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State: West Virginia
County: Monongalia
District: Clay
Quadrangle: Blacksville
Watershed: Jakes Run of Dunkard Creek

UTM NAD 83 Easting: 572701.40
Northing: 4390701.68
Public Road Access: County Route 29/4
Generally used farm name: MEPCO

This Notice Shall Include:
Pursuant to West Virginia Code § 22-6A-16(b), this notice shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

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Notice is hereby given by:

Well Operator: Northeast Natural Energy LLC
Address: 707 Virginia Street East, Suite 1200
Charleston, WV 25301
Telephone: 304-414-7060
Email: hmedley@nne-llc.com
Facsimile: 304-414-7061

Authorized Representative: Hollie Medley, Regulatory Coordinator
Address: 48 Donley Street, Suite 601
Morgantown, WV 26501
Telephone: 304-212-0422
Email: hmedley@nne.ll.com
Facsimile: 304-241-5972

Oil and Gas Privacy Notice:
The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

Received
Office of Oil & Gas
JUN 06 2016
WV Dept. of Environmental Protection

WW-6A5
(1/12)

Operator Well No. MEPCO 7H

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF PLANNED OPERATION

Notice Time Requirement: notice shall be provided no later than the **filing date of permit application.**
Date of Notice: 05/09/2016 **Date Permit Application Filed:** 05/31/2016

Delivery method pursuant to West Virginia Code § 22-6A-16(c)

☒ CERTIFIED MAIL RETURN RECEIPT REQUESTED ☐ HAND DELIVERY

Pursuant to W. Va. Code § 22-6A-16(c), no later than the date for filing the permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner whose land will be used for the drilling of a horizontal well notice of the planned operation. The notice required by this subsection shall include: (1) A copy of this code section; (2) The information required to be provided by subsection (b), section ten of this article to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. (d) The notices required by this section shall be given to the surface owner at the address listed in the records of the sheriff at the time of notice.

Notice is hereby provided to the SURFACE OWNER(s)
(at the address listed in the records of the sheriff at the time of notice):

Name: Consolidation Coal Company, Attn: Melissa Wilson
Address: CNX Center, 1000 Consol Energy Drive
Canonsburg, PA 15317

Name: MEPCO, LLC, Attn: Will Oliver
Address: 308 Dents Run Road
Morgantown, WV 26501

Notice is hereby given:
Pursuant to West Virginia Code § 22-6A-16(c), notice is hereby given that the undersigned well operator has developed a planned operation on the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State: West Virginia
County: Monongalia
District: Clay
Quadrangle: Blacksville
Watershed: Jakes Run of Dunkard Creek

UTM NAD 83 Easting: 572701.40
Northing: 4390701.68
Public Road Access: County Route 29/4
Generally used farm name: MEPCO

This Notice Shall Include:
Pursuant to West Virginia Code § 22-6A-16(c), this notice shall include: (1)A copy of this code section; (2) The information required to be provided by **W. Va. Code § 22-6A-10(b)** to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Operator: Northeast Natural Energy LLC
Telephone: 304-212-0422
Email: hmedley@nne-llc.com

Address: 707 Virginia Street East, Suite 1200
Charleston, WV 25301
Facsimile: 304-241-5972

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Oil and Gas Privacy Notice:
The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

WW-6AW
(1-12)

API NO. 47-_____-_____
OPERATOR WELL NO. MEPCO 7H
Well Pad Name: MEPCO

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

VOLUNTARY STATEMENT OF NO OBJECTION

Instructions to Persons Named on Page WW-6A
The well operator named on page WW-6A is applying for a permit from the State of West Virginia to conduct oil or gas well work. Well work permits are valid for twenty-four (24) months. Please contact the listed well operator and the Office of Oil and Gas if you do not own any interest in the listed surface tract.

Comment and Waiver Provisions
Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary.

Pursuant to West Virginia Code § 22-6A-8(b) No permit may be issued less than thirty days after the filing date of the application for any well work except plugging or replugging; and no permit for plugging or replugging may be issued less than five days after the filing date of the application except a permit for plugging or replugging a dry hole: *Provided,* That if the applicant certifies that all persons entitled to notice of the application under the provisions of subsection (b), section ten of this article have been served in person or by certified mail, return receipt requested, with a copy of the well work application, including the erosion and sediment control plan, if required, and the well plat, and further files written statements of no objection by all such persons, the secretary may issue the well work permit at any time.

VOLUNTARY STATEMENT OF NO OBJECTION

I, GARY G. LORING, hereby state that I have read the Instructions to Persons Named on Page WW-6A and the associated provisions listed above, and that I have received copies of a Notice of Application, an Application for a Well Work Permit on Form WW-6A and attachments consisting of pages one (1) through 8, including the erosion and sediment control plan, if required, and the well plat, all for proposed well work on the tract of land as follows:

State:	West Virginia	UTM NAD 83 Easting:	572701.40
County:	Monongalia	Northing:	4390701.68
District:	Clay	Public Road Access:	County Route 29/4
Quadrangle:	Blacksville	Generally used farm name:	MEPCO
Watershed:	Jakes Run of Dunkard Creek		

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials.

*Please check the box that applies	FOR EXECUTION BY A NATURAL PERSON
☐ SURFACE OWNER	Signature: Gary G. Loring
☐ SURFACE OWNER (Road and/or Other Disturbance)	Print Name: Gary G. Loring
☐ SURFACE OWNER (Impoundments/Pits)	Date:
☒ COAL OWNER OR LESSEE	**FOR EXECUTION BY A CORPORATION, ETC.**
☐ COAL OPERATOR	Company:
☐ WATER PURVEYOR	By:
☐ OPERATOR OF ANY NATURAL GAS STORAGE FIELD	Its:
	Signature:
	Date:

7 0 6 1 0 1 7 5 8

Oil and Gas Privacy Notice:
The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

WW-6AW
(1-12)

API NO. 47- _____ - _____
OPERATOR WELL NO. MEPCO 7H
Well Pad Name: MEPCO

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

VOLUNTARY STATEMENT OF NO OBJECTION

Instructions to Persons Named on Page WW-6A
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VOLUNTARY STATEMENT OF NO OBJECTION

I, William Oliver, hereby state that I have read the Instructions to Persons Named on Page WW-6A and the associated provisions listed above, and that I have received copies of a Notice of Application, an Application for a Well Work Permit on Form WW-6A and attachments consisting of pages one (1) through 8, including the erosion and sediment control plan, if required, and the well plat, all for proposed well work on the tract of land as follows:

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Quadrangle:	Blacksville	Generally used farm name:	MEPCO
Watershed:	Jakes Run of Dunkard Creek		

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials.

4706101758

*Please check the box that applies

- ☒ SURFACE OWNER
- ☐ SURFACE OWNER (Road and/or Other Disturbance)
- ☐ SURFACE OWNER (Impoundments/Pits)
- ☐ COAL OWNER OR LESSEE
- ☐ COAL OPERATOR
- ☐ WATER PURVEYOR
- ☐ OPERATOR OF ANY NATURAL GAS STORAGE FIELD

FOR EXECUTION BY A NATURAL PERSON
Signature: _____
Print Name: _____
Date: _____

FOR EXECUTION BY A CORPORATION, ETC.
Company: MEPCO, LLC
By: William Oliver
Its: LAND MANAGER
Signature: _____
Date: 5/20/16

Oil and Gas Privacy Notice:
The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
Division of Highways
1900 Kanawha Boulevard East • Building Five • Room 110
Charleston, West Virginia 25305-0430 • (304) 558-3505

Earl Ray Tomblin
Governor

Paul A. Mattox, Jr., P. E.
Secretary of Transportation/
Commissioner of Highways

January 6, 2016

James A. Martin, Chief
Office of Oil and Gas
Department of Environmental Protection
601 57th Street, SE
Charleston, WV 25304

Subject: DOH Permit for the Mepco Pad, Monongalia County
Mepco 7H

Dear Mr. Martin,

This well site will be accessed from a permit #04-2015-1144 issued to Northeast Natural Energy Corporation for access to the State Road for a well site located off of Monongalia County Route 29/4 SLS.

The operator has signed a DISTRICT WIDE OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated January 3, 2012.

Very Truly Yours,

4706101758

Gary K. Clayton

Gary K. Clayton, P.E.
Regional Maintenance Engineer
Central Office O&G Coordinator

Cc: Hollie Medley
Northeast Natural Energy Corporation
CH, OM, D-4
File

Planned Additives to be used in Fracturing Stimulations

Trade Name	Purpose	Ingredients	Cemical Abstract Service Numner (CAS#)
Water	Carrier	Water	7732-18-5
HCl, 10.1-15%	Acidizing	Hydrochloric Acid	7647-01-0
		Water	7732-18-5
Alpha 1427	Biocide	Alkyl Dimethyl Benzyl Ammonium Chloride (C12-16)	68424-85-1
		Ethanol	64-17-5
		Glutaraldehyde	111-30-8
		Quaternary Ammonium Chloride	7173-51-5
		Water	7732-18-5
Enzyme G-NE	Breaker	Hemicellulase Enzyme Concentrate	9025-56-3
		Water	7732-18-5
Cl-14	Corrosion Inhibitor	Fatty Acids	NA
		Methanol	67-56-1
		Olefin	NA
		Polyozyalkylenes	NA
		Propargyl Alcohol	107-19-7
FRW-18	Friction Reducer	Hydrotreated Light Distillate	64742-47-8
Ferrotrol 300L	Iron Crontrol	Citric Acid	77-92-9
Sand, White, 40/70	Proppant	Cystalline Silica (Quartz)	14808-50-7
Sand, White, 100 mesh	Proppant	Cystalline Silica (Quartz)	14808-50-7
Scaletrol 720	Scale Inhibitor	Siethylene Glycol	111-46-6

4706101759

MEPCO LLC PAD
FINAL SITE DESIGN, CONSTRUCTION PLANS, & EROSION & SEDIMENT CONTROL PLANS
NORTHEAST NATURAL ENERGY LLC

LAT./LONG: N 39° 39' 46.85" W 80° 9' 8.64"
(APPROXIMATE CENTER OF PROJECT)

WEST VIRGINIA 811 CALL BEFORE YOU DIG!

WEST VIRGINIA 811 ONE CALL WAS PERFORMED IN OCTOBER, 2015

THE FOLLOWING UTILITY COMPANIES MAY BE PRESENT IN THE PROJECT AREA

- FRONTIER COMMUNICATIONS (FORMERLY VERIZON)
- BLACKSVILLE OIL AND GAS COMPANY
- DOMINION HOPE
- FIRSTENERGY CORP
- WEST SIDE TELECOMMUNICATIONS

PROJECT OWNER/APPLICANT

NORTHEAST NATURAL ENERGY LLC
707 VIRGINIA STREET SUITE 1200
CHARLESTON, WV 25301
PH (304) 241-5752
CONTACT: DAVE MCDOUGAL

CIVIL ENGINEER

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
500 MARKETPLACE AVENUE SUITE 200
BRIDGEPORT, WV 26330
PH (304) 933-3119
CONTACT: JOSEPH D. ROBINSON, P.E.

WVDOH
DISTRICT FOUR
PH: (304) 842-1550
CONTACT: DISTRICT MANAGER
RAY URIE

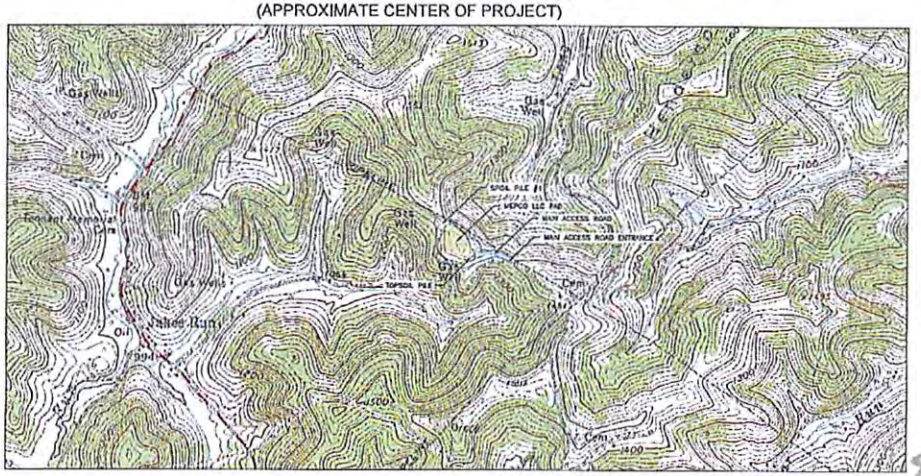
SPILL HOTLINE
WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP)
PH: (800) 642-3074

NATIONAL RESPONSE CENTER
PH: (800) 424-8802

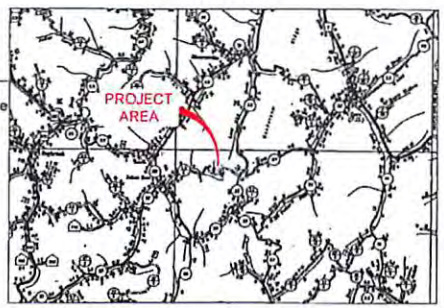
LIMITS OF DISTURBANCE PARCEL BREAKUPS			
NAME	MEPCO LLC		
TAX/MAP	16	PARCEL	48.3
DEED BOOK	1102	PAGE	73
ACREAGE	103.49		
AFFECTED AREA FROM MAIN ACCESS ROAD		0.00	AC
AFFECTED AREA FROM WELL PAD		8.48	AC
AFFECTED AREA FROM TOTAL		8.48	AC
NAME	CONSOLIDATION COAL COMPANY		
TAX/MAP	16	PARCEL	54
DEED BOOK	656	PAGE	138
ACREAGE	84.14		
AFFECTED AREA FROM MAIN ACCESS ROAD		1.81	AC
AFFECTED AREA FROM WELL PAD		2.51	AC
AFFECTED AREA FROM TOTAL		4.32	AC

L.O.D. AREAS	
DESCRIPTION	ACRES
MAIN ACCESS ROAD	1.81
WELL PAD	10.99
TOTAL	12.80
WOODED	11.94

LOCAL EMERGENCY SERVICES		
	NAME	TELEPHONE NO.
AMBULANCE		911
HOSPITAL EMERGENCY ROOM	RUBY MEMORIAL HOSPITAL	(304) 598-1000
FIRE DEPARTMENT		911
POLICE DEPARTMENT		911
POISON CONTROL CENTER	WEST VIRGINIA POISON CENTER	(800) 222-1222



LOCATION MAP
BLACKSVILLE USGS 7.5' QUAD
SCALE IN FEET
0 1500 3000
1 INCH = 1000 FEET
NORTH



VICINITY MAP
MONONGALIA COUNTY ROAD MAP
SCALE IN FEET
0 1 MILE 2 MILES
1 INCH = 1 MILE
NORTH

SITE LOCATIONS WV83-NF (WEST VIRGINIA NORTH ZONE)		
	LATITUDE	LONGITUDE
CENTROID OF PAD	39.662915	-80.153419
MAIN ACCESS ROAD ENTRANCE	39.414510	-80.223700

SITE LOCATIONS UTM83-17 (WEST VIRGINIA NORTH ZONE)		
	NORTHING	EASTING
CENTROID OF PAD	4390668.4634	572755.6057
MAIN ACCESS ROAD ENTRANCE	4360664.5047	556668.8353

FLOOD PLAIN CONDITIONS	
DO SITE CONSTRUCTION ACTIVITIES TAKE PLACE IN FLOODPLAIN:	NO
PERMIT NEEDED FROM COUNTY FLOODPLAIN COORDINATOR	NO
HEC-RAS STUDY COMPLETED	N/A
FLOODPLAIN SHOWN ON DRAWINGS	NO
FIRM MAP NUMBER(S) FOR SITE:	54061C0075E
ACREAGE OF CONSTRUCTION IN FLOODPLAIN:	N/A

SHEET INDEX	
SHEET 1 OF 20	COVER SHEET
SHEETS 2-3 OF 20	WELL SAFETY PLAN MAPS
SHEET 4 OF 20	EXISTING CONDITIONS PLAN
SHEET 5 OF 20	CONSTRUCTION NOTES
SHEET 6 OF 20	SUMMARY OF QUANTITIES
SHEET 7 OF 20	OVERALL SITE DESIGN
SHEET 8 OF 20	FINAL DESIGN PLAN
SHEETS 9-13 OF 20	WELL PAD PROFILE & CROSS SECTIONS
SHEET 13 OF 20	MAIN ACCESS ROAD PROFILE & CROSS SECTIONS
SHEETS 14-19 OF 20	CONSTRUCTION DETAILS
SHEETS 20 OF 20	RECLAMATION PLAN

4706101359

APPROVED
WVDEP OOG
1/28/2016

PLAN REPRODUCTION WARNING

THE PLANS HAVE BEEN CREATED ON ANSI D (22" X 34") SHEETS. FOR REDUCTIONS, REFER TO GRAPHIC SCALE.

THE PLANS HAVE BEEN CREATED FOR FULL COLOR PLOTTING. ANY SET OF THE PLANS THAT IS NOT PLOTTED IN FULL COLOR SHALL NOT BE CONSIDERED ADEQUATE FOR CONSTRUCTION PURPOSES.

WARNING: INFORMATION MAY BE LOST IN COPYING AND/OR GRAY SCALE PLOTTING.

REVISION RECORD		
NO.	DATE	DESCRIPTION
1	1-28-16	REVISED PER DEP

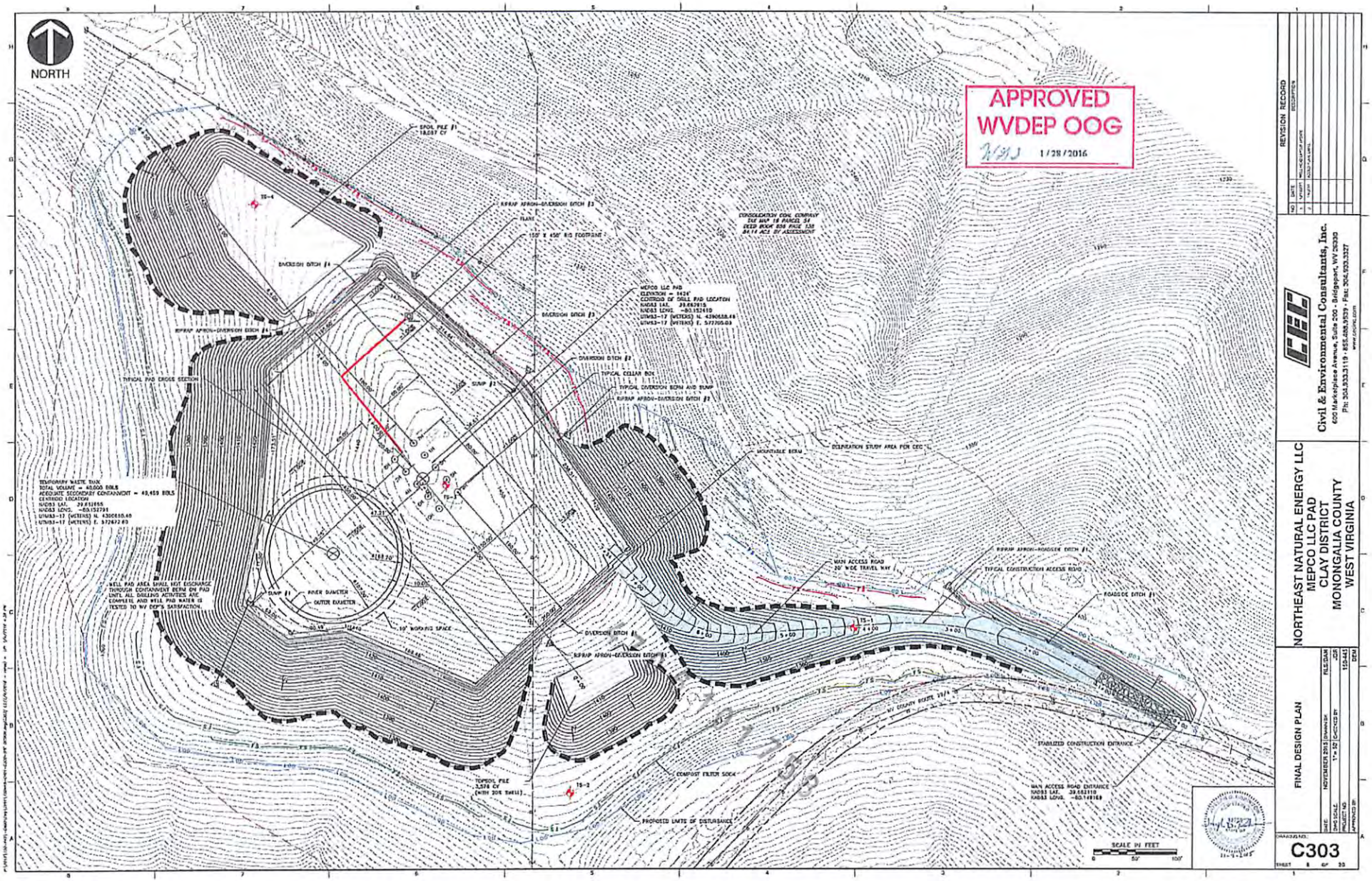
Civil & Environmental Consultants, Inc.
500 Marketplace Avenue, Suite 200 - Bridgeport, WV 26330
Ph: 304.933.3119 - 855.488.3529 - Fax: 304.933.3327
www.cecinc.com

NORTHEAST NATURAL ENERGY LLC
MEPCO LLC PAD
CLAY DISTRICT
MONONGALIA COUNTY
WEST VIRGINIA

COVER SHEET

DATE	NOVEMBER 2015
DRAWN BY	RLS
CHECKED BY	JDR
PROJECT NO.	15S-445
APPROVED BY	DDM

DRAWING NO.
C000
SHEET 1 OF 20


NORTH
APPROVED
WVDEP OOG
1/28/2016
EXCESS SPOIL FILL #1
18,087 CY
EXCESS SPOIL FILL #2
3,578 CY
(WITH 30% SWELL)
TOPSOIL PILE
RIPRAP APRON-DIVERSION DITCH #3
RIPRAP APRON-DIVERSION DITCH #4
RIPRAP APRON-DIVERSION DITCH #2
RIPRAP APRON-ROADSIDE DITCH #1
DIVERSION DITCH #4
DIVERSION DITCH #3
DIVERSION DITCH #2
DIVERSION DITCH #1
ROADSIDE DITCH #1
TYPICAL CELLAR BOX
TYPICAL DIVERSION BERM AND SUMP
TYPICAL PAD CROSS SECTION
TYPICAL CONSTRUCTION ACCESS ROAD
MOUNTABLE BERM
EXCAVATION STUDY AREA FOR CEC
MAIN ACCESS ROAD
20' WIDE TRAVEL WAY
MAIN ACCESS ROAD ENTRANCE
NAD83 LAT. 39.682110
NAD83 LONG. -80.149169
STABILIZED CONSTRUCTION ENTRANCE
COMPOST FILTER SOCK
PROPOSED LIMITS OF DISTURBANCE
RIVER DIAMETER
OUTER DIAMETER
10' WORKING SPACE
SUMP #1
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SCALE IN FEET
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REVISION RECORD
NO. DATE DESCRIPTION
1. 1/14/2015 WELL PAD LAYOUT UPDATE
2. 1/28/2016 ROAD PLAN & PROFILE UPDATES
CEC
Civil & Environmental Consultants, Inc.
600 Market Place Avenue, Suite 200 - Bridgeport, WV 26330
Ph: 304.933.3119 - 855.488.9539 - Fax: 304.933.3327
www.cecinc.com
NORTHEAST NATURAL ENERGY LLC
MEPCO LLC PAD
CLAY DISTRICT
MONONGALIA COUNTY
WEST VIRGINIA
FINAL DESIGN PLAN
DATE: NOVEMBER 2015
DRAWN BY: JDR
CHECKED BY: DEM
FILE: D&M
SCALE: 1" = 50'
PROJECT NO: 155445
APPROVED BY:
DRAWING NO.: C303
SHEET 8 OF 30

Northeast Natural Energy LLC Mine Contingency Plan

On all wells drilled, Northeast Natural Energy LLC ("NNE") has contingency strategies in place should an unanticipated void or mine be encountered while drilling the surface section of the well. If encountered, any accumulated gases will be diverted a safe distance away from the drilling operations through the blooey line and/or flare.

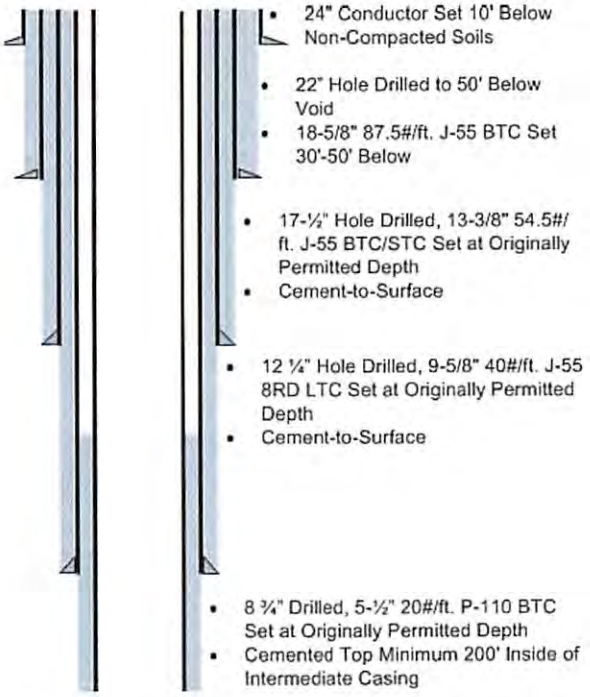
All casings programs submitted to the state incorporate the use of a 24" conductor over the previously used 20" that has long been the industry standard for a typical Marcellus design. The use of 24" conductor casing allows the use of a 22" bit to ream the surface hole, and drill 50' below the void to run a string of 18-5/8" 87.50#/ft J-55 through the section when needed.

The 18-5/8" would be set 30-50' below the void with cement baskets placed directly above and below. The section of pipe below the void would be cemented using the balance method with 100% excess. The section above the void would be cemented separately by using remedial top fill techniques and 30% excess.

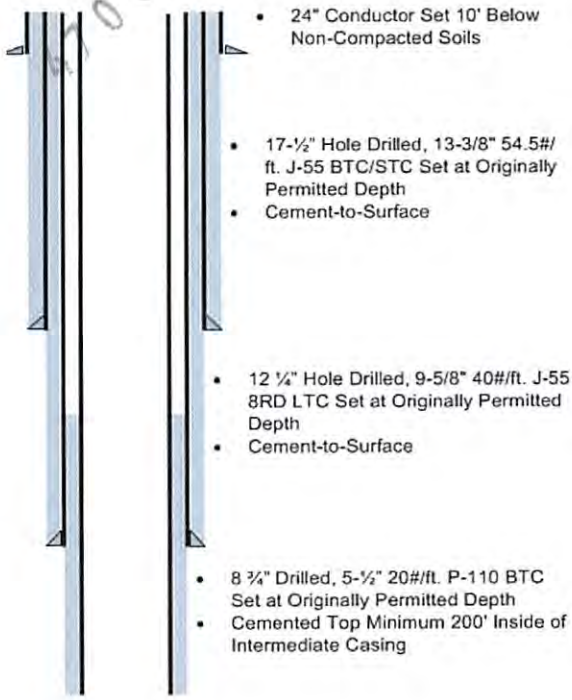
With the use of these string sizes and techniques, the surface and intermediate strings do not need to be altered. After a proper WOC time, the surface section of the well would continue to be drilled with a 17-1/2" bit and the 13-3/8" 54.50#/ft freshwater casing would be set at the originally permitted depth.

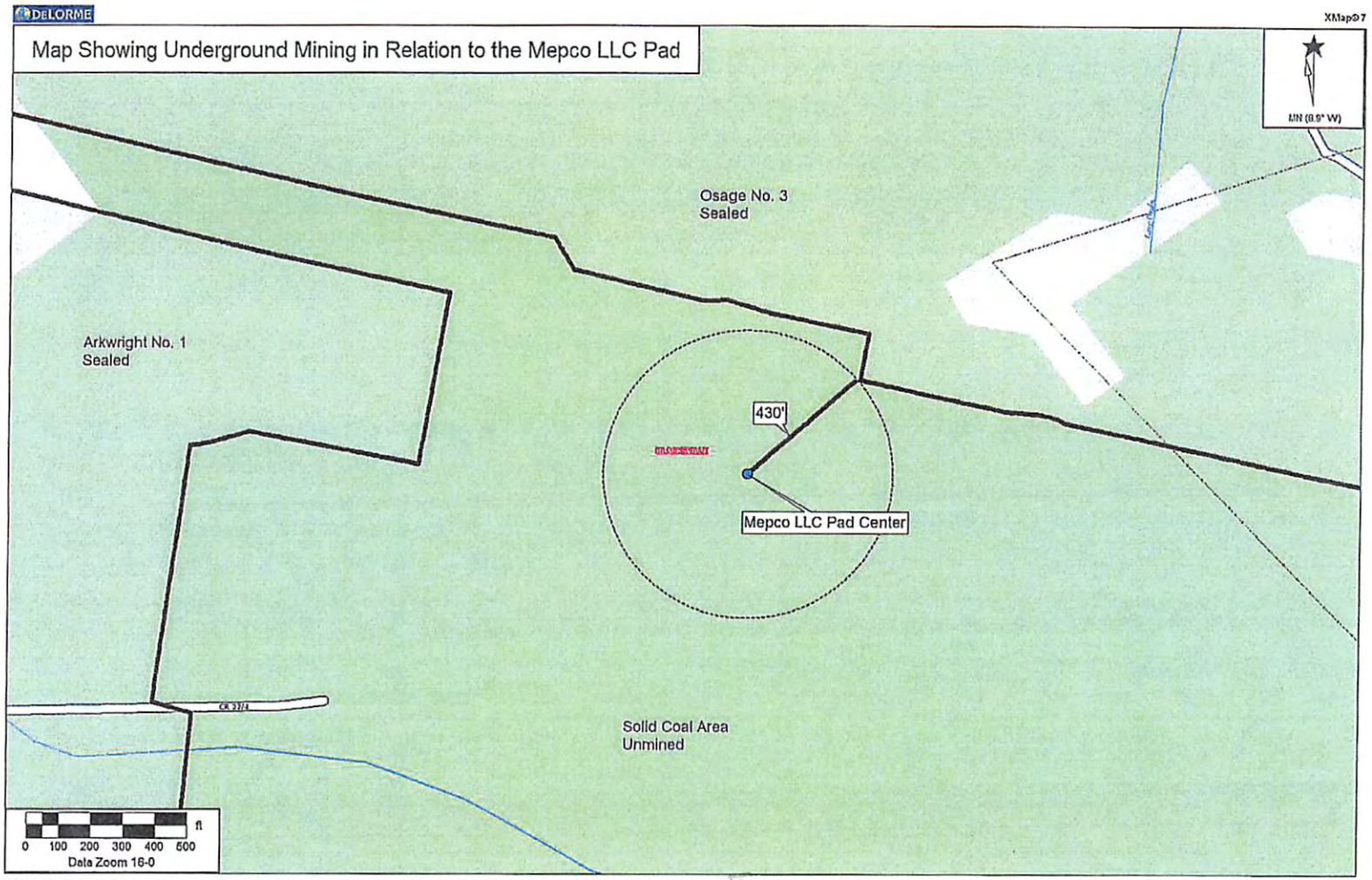
The diagram below visually shows the alternative casing plan should an unanticipated void be encountered.

Casing Schematic w/ Mine String



Casing Schematic w/o Mine String




DeLORME
XMap® 7
Map Showing Underground Mining in Relation to the Mepco LLC Pad
MN (8.9° W)
Osage No. 3
Sealed
Arkwright No. 1
Sealed
430'
Mepco LLC Pad Center
CR 2214
Solid Coal Area
Unmined
ft
0 100 200 300 400 500
Data Zoom 16-0
Data use subject to license.
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www.delorme.com

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