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**west virginia** department of environmental protection

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

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

July 24, 2013

**WELL WORK PERMIT**

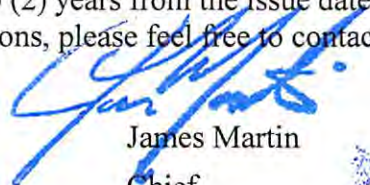
**Horizontal 6A Well**

This permit, API Well Number: 47-6101660, issued to NORTHEAST NATURAL ENERGY LLC, 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 all 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 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.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-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) 926-0499 ext. 1654.



James Martin  
Chief

Operator's Well No: STATLER 2H  
Farm Name: MOORE, R, & SAM, BEN, DAN S  
**API Well Number: 47-6101660**  
**Permit Type: Horizontal 6A Well**  
Date Issued: 07/24/2013

**Promoting a healthy environment.**

# PERMIT CONDITIONS

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

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1. 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 fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
2. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the fill material shall be within plus or minus 2% (unless soil test results show a greater range of moisture content is appropriate and 95% compaction can still be achieved) of the optimum moisture content as determined by the standard proctor density test, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort. Each lift must meet 95 % compaction of the optimum density based on results from the standard proctor density test of the actual soils used in specific engineered fill sites. 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.
3. 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.
4. 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.
5. 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.

6101660

WW - 6B  
(3/13)

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

61      3      256

1) Well Operator: Northeast Natural Energy LLC 494498281 Monongalia Clay Blacksville  
Operator ID      County      District      Quadrangle

2) Operator's Well Number: Staller 2H Well Pad Name: Staller

3 Elevation, current ground: 1,061 Elevation, proposed post-construction: Same

4) Well Type: (a) Gas  Oil  Underground Storage   
Other   
(b) If Gas: Shallow  Deep   
Horizontal

5) Existing Pad? Yes or No: Yes

6) Proposed Target Formation(s), Depth(s), Anticipated Thicknesses and Associated Pressure(s):  
Marcellus, Top 7,780' and Base 7,876', 96' Thick, 3,400 psi

7) Proposed Total Vertical Depth: 7,860'

8) Formation at Total Vertical Depth: Marcellus

9) Proposed Total Measured Depth: 15,973'

10) Approximate Fresh Water Strata Depths: 850'

11) Method to Determine Fresh Water Depth: Driller's Logs from Offset Wells

12) Approximate Saltwater Depths: 1,800'

13) Approximate Coal Seam Depths: 850'

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

15) Does proposed well location contain coal seams directly overlying or adjacent to an active mine? If so, indicate name and depth of mine: No

16) Describe proposed well work: Drill and complete a horizontal Marcellus well. Drill vertical section to a KOP of approximately 6,482'. Build angle and commence drilling the horizontal section at a vertical depth of 7,860' to a total measured depth of approximately 15,973'. The horizontal well will be drilled in a South Eastern direction at an azimuth of S38 19' 34"E (141.67).

17) Describe fracturing/stimulating methods in detail:  
NNE will be performing a high rate slick water fracturing of the lower section of the Marcellus formation. The first stage will be perforated via coiled tubing and/or a burst disc. The remaining stages will be conventionally perforated with pump down guns and isolated with composite frac plugs. Any off-set wells will be completed with the same frac crew, alternating between wells at each stage. Once half of the total stages have been completed, a bridge plug will be set so that pressure can be bled down and all surface equipment checked. Once completed, the plugs will be drilled out conventionally with a rig and snubbing unit.

18) Total area to be disturbed, including roads, stockpile area, pits, etc, (acres): Existing Pad

19) Area to be disturbed for well pad only, less access road (acres): Existing Pad

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(3/13)

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**CASING AND TUBING PROGRAM**

<b>TYPE</b>	<b>Size</b>	<b>New or Used</b>	<b>Grade</b>	<b>Weight per ft.</b>	<b>FOOTAGE: For Drilling</b>	<b>INTERVALS: Left in Well</b>	<b>CEMENT: Fill -up (Cu. Ft.)</b>
Conductor	20"	New	N/A	94	36'	36'	Grout to Surface
Fresh Water	13-3/8"	New	J-55	54.5	1,000'	1,000'	CTS
Coal							
Intermediate	9-5/8"	New	J-55	36	2,222'	2,222'	CTS
Production	5-1/2"	New	P-110	20	15,973'	15,973'	3,891
Tubing	2-3/8"	New	J-55	4.7	N/A	N/A	N/A
Liners							

<b>TYPE</b>	<b>Size</b>	<b>Wellbore Diameter</b>	<b>Wall Thickness</b>	<b>Burst Pressure</b>	<b>Cement Type</b>	<b>Cement Yield</b>
Conductor	20"	25"	0.438"	2,110	Grout	N/A
Fresh Water	13-3/8"	17.5"	0.38"	2,730	Type 1	1.23
Coal						
Intermediate	9-5/8"	12.25"	0.361"	3,510	Type 1	1.3
Production	5-1/2"	8.75"	0.361"	12,530	50:50 Poz	1.21
Tubing	2-3/8"	N/A	0.190	7,700	N/A	N/A
Liners						

**PACKERS**

Kind:				
Sizes:				Received Office of Oil & Gas
Depths Set:				

1 1 2013

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21) Describe centralizer placement for each casing string. \_\_\_\_\_

Surface string will have bow springs every third joint

Intermediate string will have bow springs every third joint

Production string will have spiral set every fourth joint

22) Describe all cement additives associated with each cement type. \_\_\_\_\_

Surface string will be a Type I Cement +

0.05% bwoc Static Free + 1% bwoc Calcium Chloride + 0.5% bwoc EC-1 + 0.75 gals/100 sack FP-6L + 0.05% bwoc BA-10A + 48.5% Fresh Water

Intermediate string will be a Type I Cement + 0.05% bwoc Static Free + 0.5% bwoc EC-1 + 0.75 gals/100 sack FP-6L + 0.5% bwoc Sodium Metasilicate + 0.5% bwoc BA-10A + 53.4% Fresh Water

Production string will have 50:50 Poz and an anti-gas migration additive

23) Proposed borehole conditioning procedures. \_\_\_\_\_

Surface string - 50.0 bbls Bentonite Pill w/Flake & Fed Seal +

50 lbs Cello Flake + 20 lbs/bbl Bentonite - Sacked + 160 lbs Fed Seal @ 8.4 ppg & 10.0 bbls Fresh Water Spacer

Intermediate string - 35.0 bbls Fresh Water + 25 lbs Cello Flake + 20 lbs/bbl Bentonite - Sacked + 80 lbs Fed Seal @ 8.4 ppg & 10.0 bbls Fresh Water Spacer

Production string - Borehole Conditioned w/ Water Based Spacer with an emulsifier

\*Note: Attach additional sheets as needed.

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WW-9  
(5/13)

Page 1 of 3  
API Number 47 - \_\_\_\_\_ - \_\_\_\_\_  
Operator's Well No. Staller 2H

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) Dunkard Quadrangle Blacksville, WV

Elevation 1,061' County Monongalia District Clay

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

Will a pit be used for drill cuttings? Yes \_\_\_\_\_ No X

If so, please describe anticipated pit waste: \_\_\_\_\_

Will a synthetic liner be used in the pit? Yes \_\_\_\_\_ No \_\_\_\_\_ If so, what ml.? \_\_\_\_\_

Proposed Disposal Method For Treated Pit Wastes:

- \_\_\_\_\_ Land Application
- \_\_\_\_\_ Underground Injection ( UIC Permit Number \_\_\_\_\_ )
- \_\_\_\_\_ Reuse (at API Number \_\_\_\_\_ )
- Off Site Disposal (Supply form WW-9 for disposal location)
- \_\_\_\_\_ Other (Explain \_\_\_\_\_)

SDW  
5/23/2013

Will closed loop system be used? Yes on both top hole and the horizontal section

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. Air - Vertical Section, Oil Based - Horizontal Section

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

Additives to be used in drilling medium? Mide fatty acid, Organophil clay, Leonardite, Lime, CaCl, Barite

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Removed Offsite

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

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

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 [Signature]

Company Official (Typed Name) John Adams

Company Official Title Vice President - Operations

Subscribed and sworn before me this 16<sup>th</sup> day of May, 20 13

[Signature] Notary Public

My commission expires February 7, 2020



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Form WW-9

Operator's Well No. Statler 2H

Northeast Natural Energy LLC

Proposed Revegetation Treatment: Acres Disturbed 12.7 Prevegetation pH 6.0

Lime 2.0 Tons/acre or to correct to pH 6.5

Fertilizer (10-20-20 or equivalent) 500 lbs/acre (500 lbs minimum)

Mulch Hay/Straw Tons/acre

Seed Mixtures

Area I		Area II	
Seed Type	lbs/acre	Seed Type	lbs/acre
Kentucky Bluegrass	20	Kentucky Bluegrass	20
Red Top	15	Red Top	15
White Clover	15	White Clover	15

Attach:  
Drawing(s) of road, location, pit and proposed area for land application.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: S. D. Warratt

Comments: Upgrade E&S as necessary. Seed & Mulch where needed

Title: Oil & Gas Inspector Date: 5/23/2013

Field Reviewed? () Yes ( ) No

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## Attachment A to WW-9

The two impoundments associated with the Statler well pad will be lined and contain fresh water only at all times. Northeast Natural Energy LLC ("NNE") plans to utilize a closed loop process for its drilling of the Statler 2H well. No waste shall be placed into an earthen impoundment or pit. Water created during the drilling and completions process will be contained within steel frac-tanks until able to be reused or properly disposed of. Cuttings will be diverted to steel half-round tank where they will then be transferred by an operator to lined steel boxes for transport.

Statler 2H Drill Cuttings will be taken to disposal at one or more of the following disposal/approved waste facilities:

- Westmoreland Landfill (Permit # 100277)
- Meadowfill Landfill (Permit # SWF 103298)
- Soil Remediation, Inc. (EPA # 0250050885P902)
- Max Environmental – Yukon, PA (PAD004835146 and 301071)
- Max Environmental – Bulger, PA (PAD059087072 and 301359)

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 all, of the following disposal/approved waste facilities:

- 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)
- Patriot Water Treatment (Ohio) (Permit # EPA 748163)
- Soil Remediation, Inc. (EPA # 0250050885P902)
- Fairmont Brine Processing (WV NPDES #0116408)

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## Water Management Plan: Primary Water Sources

WMP-01318

API/ID Number: 047-061-01660

Operator:

North East Natural Energy

Statler 2H

### Important:

For each proposed primary water source (including source intakes for purchased water sources) identified in your water management plan, and summarized herein, DEP has made an evaluation concerning water availability over the specified date range. DEP's assessment is based on the following considerations:

- Statistical analysis of historical USGS stream gauge data (transferred to un-gauged locations as necessary);
- Identification of sensitive aquatic life (endangered species, mussels, etc.);
- Quantification of known existing demands on the water supply (Large Quantity Users);
- Minimum flows required by the Army Corps of Engineers; and
- Designated stream uses.

Based on these factors, DEP has provided, for each intake location (and origination point for purchased water), a reference gauge location and discharge flow reading which must be surpassed prior to withdrawals. Additionally, DEP has established a minimum passby flow at the withdrawal location which must also be surpassed prior to withdrawals. These thresholds are considered terms of the permit and are enforceable as such.

**DEP is aware that some intake points will be used for multiple wells and well sites. In these cases, the thresholds set by the Water Management Plan are to be interpreted as total withdrawal limits for each location over the specified date range regardless of how many wells are supported by that intake.**

For all purchased water intakes, determinations of water availability are made at the original source intake location. It is the responsibility of the Oil and Gas Operator, not the seller, to cease withdrawal of water from the seller when flows are less than the minimum gauge reading at the stream gauge referenced by the Water Management Plan in order to protect stream uses.

Note that the determinations made herein are based on the best available data, but it is impossible to predict water availability in the future. While the DEP has carefully established these minimum withdrawal thresholds, it remains the operator's responsibility to protect aquatic life at all times. Approval to withdrawal is contingent upon permission from the land owner. It is the responsibility of the operator to secure and maintain permission prior to any withdrawals.

The operator is reminded that 24-48 hours prior to withdrawing (or purchasing) water, DEP must be notified by email at [DEP.water.use@wv.gov](mailto:DEP.water.use@wv.gov).

APPROVED JUN 30 2013

## Source Summary

WMP- 01318

API Number:

047-061-01660

Operator:

North East Natural Energy

Statler 2H

## Stream/River

● Source **Dunkard Creek @ Statler Withdrawal Site** Monongalia Owner: **Benjamin M. Statler**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
8/15/2013	8/15/2014	8,400,000		39.711487	-80.178871

Regulated Stream? Ref. Gauge ID: 3062500 DECKERS CREEK AT MORGANTOWN, WV

**Max. Pump rate (gpm): 1,800** **Min. Gauge Reading (cfs): 21.51** **Min. Passby (cfs) 33.56**

DEP Comments:

● Source **Monongahela River @ Morgantown Industrial Park** Monongalia Owner: **Enrout Properties LLC**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
8/15/2013	8/15/2014	8,400,000		39.604042	-79.969827

Regulated Stream? MGF @ Opekiska Dam Ref. Gauge ID: 3057000 TYGART VALLEY RIVER AT COLFAX, WV

**Max. Pump rate (gpm): 600** **Min. Gauge Reading (cfs): 508.57** **Min. Passby (cfs) 580.11**

DEP Comments:

## Source Summary

WMP-01318

API Number:

047-061-01660

Operator:

North East Natural Energy

Statler 2H

## Purchased Water

Source **Clay Battelle PSD** Monongalia Owner: **Clay Battelle PSD**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
8/15/2013	8/15/2014	8,400,000	125,000	-	-

Regulated Stream? MGF @ Opekiska Dam Ref. Gauge ID: 3057000 TYGART VALLEY RIVER AT COLFAX, WV

Max. Pump rate (gpm): Min. Gauge Reading (cfs): **505.23** Min. Passby (cfs) **555.36**

DEP Comments:

## Source Detail

WMP-01318

API/ID Number: 047-061-01660

Operator: North East Natural Energy

Statler 2H

Source ID: 20206    Source Name: Clay Battelle PSD  
Clay Battelle PSD

Source Latitude: -

Source Longitude: -

HUC-8 Code: 5020003

Drainage Area (sq. mi.): 2571.54    County: Monongalia

Anticipated withdrawal start date: 8/15/2013

Anticipated withdrawal end date: 8/15/2014

Total Volume from Source (gal): 8,400,000

Endangered Species?     Mussel Stream?

Trout Stream?     Tier 3?

Regulated Stream?    MGF @ Opekiska Dam

Proximate PSD?    Morgantown Utility Board

Gauged Stream?

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

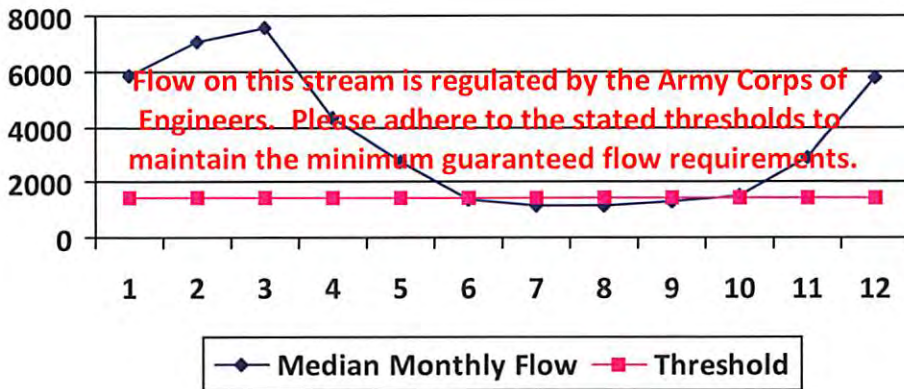
Reference Gaug: 3057000    TYGART VALLEY RIVER AT COLFAX, WV

Drainage Area (sq. mi.): 1,363.00

Gauge Threshold (cfs): 624

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	5,862.09	-	-
2	7,077.64	-	-
3	7,563.14	-	-
4	4,322.38	-	-
5	2,712.43	-	-
6	1,372.93	-	-
7	1,154.52	-	-
8	1,171.93	-	-
9	1,307.09	-	-
10	1,492.42	-	-
11	2,917.62	-	-
12	5,736.71	-	-

### Water Availability Profile



### Water Availability Assessment of Location

Base Threshold (cfs):	-
Upstream Demand (cfs):	126.43
Downstream Demand (cfs):	30.36
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	294.32

Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

## Source Detail

WMP-01318

API/ID Number: 047-061-01660

Operator: North East Natural Energy

Statler 2H

Source ID: 20204    Source Name: Dunkard Creek @ Statler Withdrawal Site  
Benjamin M. Statler

Source Latitude: 39.711487  
Source Longitude: -80.178871

HUC-8 Code: 5020005

Drainage Area (sq. mi.): 121.19    County: Monongalia

Anticipated withdrawal start date: 8/15/2013

Anticipated withdrawal end date: 8/15/2014

Endangered Species?     Mussel Stream?

Trout Stream?     Tier 3?

Total Volume from Source (gal): 8,400,000

Regulated Stream?

Max. Pump rate (gpm): 1,800

Proximate PSD?

Max. Simultaneous Trucks:

Gauged Stream?

Max. Truck pump rate (gpm) 0

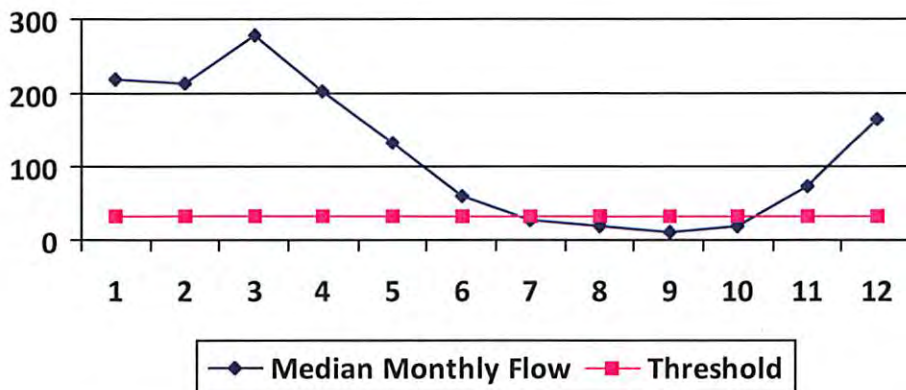
Reference Gaug: 3062500    DECKERS CREEK AT MORGANTOWN, WV

Drainage Area (sq. mi.): 63.20

Gauge Threshold (cfs): 14

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	219.96	37.57	182.50
2	214.17	37.57	176.71
3	278.79	37.57	241.33
4	201.73	37.57	164.27
5	133.30	37.57	95.84
6	60.40	37.57	22.94
7	27.71	37.57	-9.75
8	19.98	37.57	-17.48
9	11.76	37.57	-25.70
10	19.42	37.57	-18.04
11	72.93	37.57	35.47
12	164.66	37.57	127.20

### Water Availability Profile



### Water Availability Assessment of Location

Base Threshold (cfs): 26.85

Upstream Demand (cfs): 0.00

Downstream Demand (cfs): 0.00

Pump rate (cfs): 4.01

Headwater Safety (cfs): 0.00

Ungauged Stream Safety (cfs): 6.71

Min. Gauge Reading (cfs): 21.51

Passby at Location (cfs): 33.56

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

## Source Detail

WMP- 01318

API/ID Number: 047-061-01660

Operator: North East Natural Energy

Statler 2H

Source ID: 20205    Source Name: Monongahela River @ Morgantown Industrial Park  
Enrout Properties LLC

Source Latitude: 39.604042  
Source Longitude: -79.969827

HUC-8 Code: 5020003

Drainage Area (sq. mi.): 2571.2    County: Monongalia

Anticipated withdrawal start date: 8/15/2013

Anticipated withdrawal end date: 8/15/2014

Endangered Species?     Mussel Stream?

Total Volume from Source (gal): 8,400,000

Trout Stream?     Tier 3?

Max. Pump rate (gpm): 600

Regulated Stream?    MGF @ Opekiska Dam

Max. Simultaneous Trucks: 0

Proximate PSD?    Morgantown Utility Board

Max. Truck pump rate (gpm): 0

Gauged Stream?

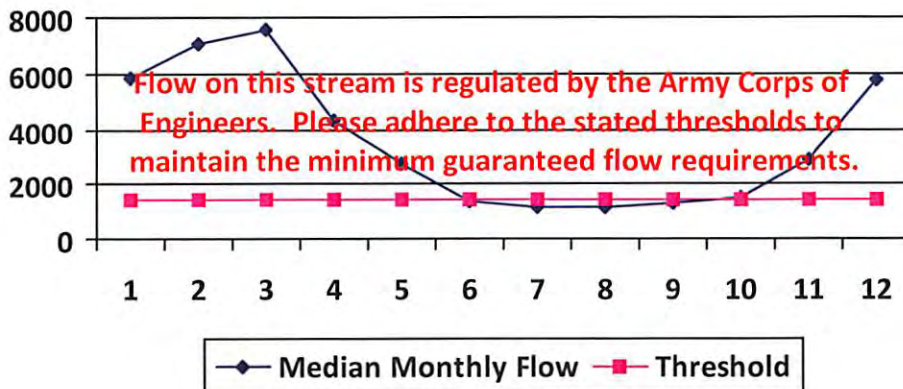
Reference Gaug: 3057000    TYGART VALLEY RIVER AT COLFAX, WV

Drainage Area (sq. mi.): 1,363.00

Gauge Threshold (cfs): 624

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	5,861.31	-	-
2	7,076.70	-	-
3	7,562.14	-	-
4	4,321.80	-	-
5	2,712.07	-	-
6	1,372.75	-	-
7	1,154.37	-	-
8	1,171.78	-	-
9	1,306.92	-	-
10	1,492.22	-	-
11	2,917.23	-	-
12	5,735.96	-	-

### Water Availability Profile



### Water Availability Assessment of Location

Base Threshold (cfs):	-
Upstream Demand (cfs):	126.43
Downstream Demand (cfs):	55.11
Pump rate (cfs):	1.34
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	294.28
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.



# Water Management Plan: Secondary Water Sources



WMP-01318

API/ID Number 047-061-01660

Operator: North East Natural Energy

Statler 2H

### Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

## Multi-site impoundment

Source ID:	20211	Source Name	MIP Freshwater Impoundment A	Source start date:	8/15/2013
				Source end date:	8/15/2014
Source Lat:	39.60021	Source Long:	-79.97578	County	Monongalia
Max. Daily Purchase (gal)		Total Volume from Source (gal):			8,400,000

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted.

Reference: WMP-1062

**Important:**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

**Other**

Source ID:	20207	Source Name	Statler Farm Pond	Source start date:	8/15/2013
				Source end date:	8/15/2014
Source Lat:	39.7128	Source Long:	-80.1821	County	Monongalia
Max. Daily Purchase (gal)		Total Volume from Source (gal):			8,400,000

DEP Comments:



**Important:**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

**Purchased Water**

Source ID:	20208	Source Name	Southwestern Pennsylvania Water Authority Public Water Provider	Source start date:	8/15/2013
				Source end date:	8/15/2014
Source Lat:	39.768776	Source Long:	-80.225171	County	
Max. Daily Purchase (gal)	100,000	Total Volume from Source (gal):	8,400,000		
DEP Comments:	Please ensure that purchases from this facility are in compliance with all applicable rules and regulations established by PADEP.				

Source ID:	20209	Source Name	My Water, LLC. Commercial Supplier	Source start date:	8/15/2013
				Source end date:	8/15/2014
Source Lat:	39.648808	Source Long:	-80.217074	County	Monongalia
Max. Daily Purchase (gal)	50,000	Total Volume from Source (gal):	8,400,000		
DEP Comments:	Water obtained from commercial groundwater well located at 39.648808, -80.217074.				

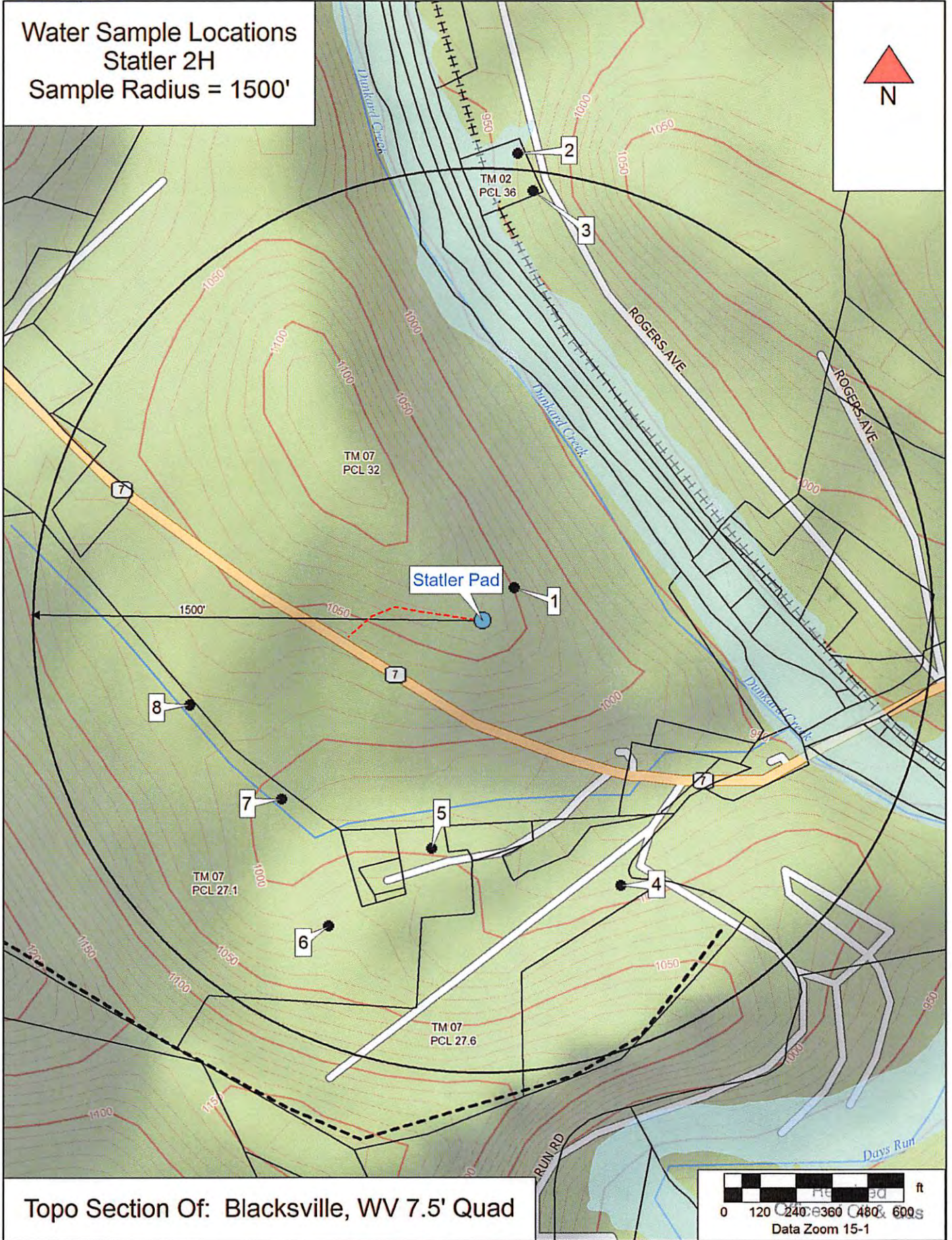
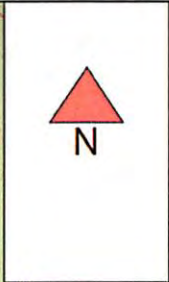
**Important:**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

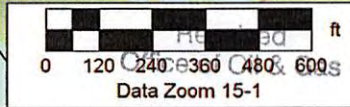
- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID:	20210	Source Name	J&E Sanitation	Source start date:	8/15/2013
			Commercial Supplier	Source end date:	8/15/2014
	Source Lat:	39.9607	Source Long:	-80.1777	County
	Max. Daily Purchase (gal)	216,000	Total Volume from Source (gal):	8,400,000	
DEP Comments:	Please ensure that purchases from this facility are in compliance with all applicable rules and regulations established by PADEP.				

Water Sample Locations  
Statler 2H  
Sample Radius = 1500'



Topo Section Of: Blacksville, WV 7.5' Quad



6101660

SURFACE HOLE DEC. LONG: 80.178420  
SURVEYED LONG: 80° 10' 42.3"

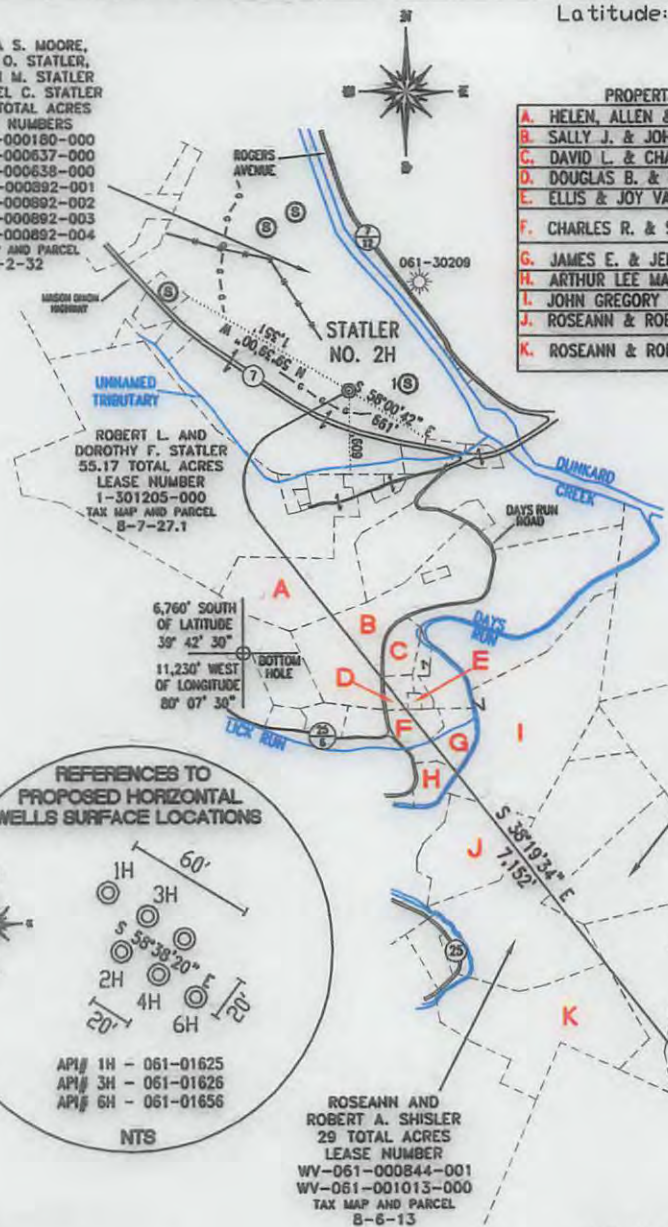
3,300'

Latitude: 39° 42' 30" (NAD27)

SURFACE HOLE

Longitude: 80° 10' 00" (NAD27)

REBECCA S. MOORE,  
SAMUEL O. STATLER,  
BENJAMIN M. STATLER  
AND DANIEL C. STATLER  
243.96 TOTAL ACRES  
LEASE NUMBERS  
WV-061-000180-000  
WV-061-000637-000  
WV-061-000638-000  
WV-061-000892-001  
WV-061-000892-002  
WV-061-000892-003  
WV-061-000892-004  
TAX MAP AND PARCEL  
8-2-32



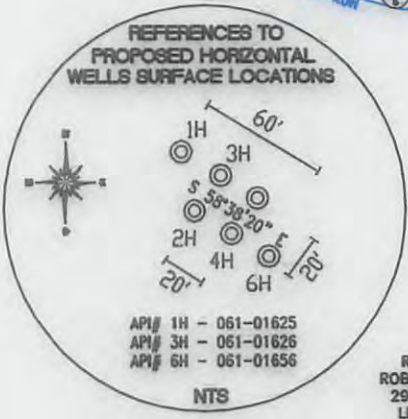
PROPERTY OWNER	ACRES	LEASE NUMBER	PARCEL ID
A. HELEN, ALLEN & SHEILA HIXENBAUGH	13.11	1-297413-000	08-07-27.6
B. SALLY J. & JOHN R. MEDLER	15.68	WV-061-000177-000	08-07-29.1
C. DAVID L. & CHARLOTTE BANE	1.94	WV-061-000675-000	08-07-70
D. DOUGLAS B. & VICKI L. VARNER	.92	WV-061-001022-000	08-07-89
E. ELLIS & JOY VARNER	.077	WV-061-001018-000	08-07-69.1
F. CHARLES R. & SHARON L. SNIDER	2.00	WV-061-001020-000 WV-061-001024-000	08-07-50
G. JAMES E. & JENNIFER L. THORNE	3.00	WV-061-001021-000	08-07-51
H. ARTHUR LEE MAIN	1.52	WV-061-001017-001	08-07-52
I. JOHN GREGORY & MELISSA ROSE	26.16	WV-061-000656-000	08-06-11
J. ROSEANN & ROBERT A. SHISLER	8.945	1-261064-000	08-06-11.1
K. ROSEANN & ROBERT A. SHISLER	19.41	WV-061-000844-001 WV-061-001013-000	08-06-17

TOP HOLE (UTM NAD 83)  
N) 4395642.6  
E) 570446.2

BOTTOM HOLE (UTM NAD 83)  
N) 4393668.9  
E) 571624.5

1 (S) SPRING  
N 83°34'54" E 433'

REFERENCES TO PROPOSED HORIZONTAL WELLS SURFACE LOCATIONS



API# 1H - 061-01625  
API# 3H - 061-01626  
API# 6H - 061-01656

NTS

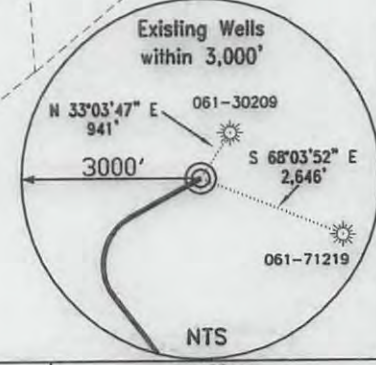
RICHARD GEMAS ET AL  
14.39 TOTAL ACRES  
LEASE NUMBER  
WV-061-000844-001  
WV-061-001013-000  
TAX MAP AND PARCEL  
8-6-14

ROSEANN AND ROBERT A. SHISLER  
18.23 TOTAL ACRES  
LEASE NUMBER  
WV-061-001023-001  
TAX MAP AND PARCEL  
8-6-16

HUGO D. CARRICO, III  
18.2375 TOTAL ACRES  
LEASE NUMBER  
1-249568-000  
TAX MAP AND PARCEL  
8-6-18

ROSEANN AND ROBERT A. SHISLER  
29 TOTAL ACRES  
LEASE NUMBER  
WV-061-000844-001  
WV-061-001013-000  
TAX MAP AND PARCEL  
8-6-13

EARL M. TENNANT AND ROXIE T. JONES  
187.64 TOTAL ACRES  
LEASE NUMBER  
1-298999-006  
TAX MAP AND PARCEL  
8-6-19



NTS

REFERENCE NOTES  
Boundaries as shown taken from deeds, tax maps and field locations. A full boundary survey is not expressed nor implied. All bearings are based on true north. Ownership taken from public records Monongalia County, West Virginia AUGUST 2012  
State Plane Coordinates & NAD 83 Lat/Long by differential submeter mapping grade GPS  
Drafted by: E.A.H.

FILE #: NNE 008

DRAWING #: 2192

SCALE: PLAT - 1" = 1400'  
TICK MARK - 1" = 2000'

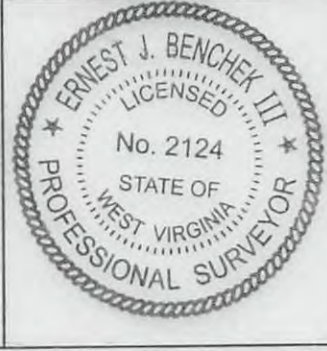
MINIMUM DEGREE OF ACCURACY: 1/200

PROVEN SOURCE OF ELEVATION: SUBMETER MAPPING GRADE GPS

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Signed: \_\_\_\_\_

L.L.S. #2124 : Ernest J. Benchek III



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS  
WVDEP  
OFFICE OF OIL & GAS  
601 57TH STREET  
CHARLESTON, WV 25304

Well Type:  Oil  Waste Diposal  Production  Deep  
 Gas  Liquid Injection  Storage  Shallow

WATERSHED: DUNKARD ELEVATION: 1,061'

COUNTY/DISTRICT: MONONGALIA / CLAY QUADRANGLE: BLACKSVILLE, WV

SURFACE OWNER: REBECCA S. MOORE, SAMUEL O. STATLER, BENJAMIN M. STATLER, DANIEL C. STATLER ACREAGE: 243.96 +/-

OIL & GAS ROYALTY OWNER: REBECCA S. MOORE, SAMUEL O. STATLER, BENJAMIN M. STATLER, DANIEL C. STATLER ACREAGE: 471.6745 +/-

LEASE NUMBERS: \_\_\_\_\_

DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE   
PLUG OFF FORMATION  PERFORATE NEW FORMATION  PLUG & ABANDON   
CLEAN OUT & REPLUG  OTHER CHANGE  (SPECIFY): \_\_\_\_\_

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 7,860' TMD: 15,973'

WELL OPERATOR: NORTHEAST NATURAL ENERGY LLC DESIGNATED AGENT: JOHN ADAMS

ADDRESS: 707 VIRGINIA STREET - SUITE 1200 ADDRESS: 707 VIRGINIA STREET - SUITE 1200

CITY: CHARLESTON STATE: WV ZIP CODE: 25301 CITY: CHARLESTON STATE: WV ZIP CODE: 25301