

Mountaineer Keystone



January 30, 2017

West Virginia – Dept. of Environmental Protection
Division of Air Quality
Beverly McKeone, NSR Manager
601 57th Street, SE
Charleston, WV 25304

**Reference: G70-D General Permit Registration Application
Tonys Bridge wellpad
Mt. Claire, Harrison County, West Virginia**

Dear Ms. McKeone:

Mountaineer Keystone, LLC is submitting this General Permit G-70D Registration application (1 paper copy and 2 PDF copies on a CD) for their proposed Tonys Bridge wellpad located at 4000 County Route 25, Mt. Claire, Harrison County, West Virginia. It is anticipated that the produced natural gas will be dry; therefore, if any condensate is produced it will be very minimal. Based on these expectations the wellpad will consist of four inline 1mmBTU/hr heaters, four 400 bbl produced liquid tanks, one 210 bbl sand/water tank, and one 700 BTU/Hr thermoelectric generator.

Based upon our understanding, since the wells will be installed after September 18, 2015 and the wellpad will consist of more than a well, the wellpad will be subject to a substantive requirement (i.e. fugitive emission monitoring) and therefore a G70-D permit is required prior to the installation of permanent emission units.

Please note the receipt and affidavit of the required public notice is not included with this application, but will be sent as soon as it is received.

Please feel free to contact me at 724-940-1112, if the WVDEP-DAQ has any questions regarding the information in this General Permit Registration.

Sincerely,
Mountaineer Keystone LLC



Meghan M.B. Yingling
Environmental Compliance Manager

cc: Stacey Lucas, Mountaineer Keystone LLC
William Veigel, Mountaineer Keystone LLC
Thomas S. Seguljic, PE, HRP Associates, Inc.



west virginia department of environmental protection

Division of Air Quality
601 57th Street SE
Charleston, WV 254
Phone (304) 926-0475
Fax (304) 926-0479
www.dep.wv.gov

G70-D GENERAL PERMIT REGISTRATION APPLICATION

PREVENTION AND CONTROL OF AIR POLLUTION IN REGARD TO THE CONSTRUCTION, MODIFICATION,
RELOCATION, ADMINISTRATIVE UPDATE AND OPERATION OF
NATURAL GAS PRODUCTION FACILITIES LOCATED AT THE WELL SITE

- CONSTRUCTION
- MODIFICATION
- RELOCATION
- CLASS I ADMINISTRATIVE UPDATE
- CLASS II ADMINISTRATIVE UPDATE

SECTION I. GENERAL INFORMATION

Name of Applicant (as registered with the WV Secretary of State's Office):

Mountaineer Keystone LLC

Federal Employer ID No. (FEIN): 47-1919654

Applicant's Mailing Address: 65 PROFESSIONAL PLACE SUITE 200

City: Bridgeport

State: WV

ZIP Code: 26330

Facility Name: Tonys Bridge

Operating Site Physical Address:

If none available, list road, city or town and zip of facility. 4000 County Route 25

City: Mt. Claire

Zip Code: 26405

County: Harrison

Latitude & Longitude Coordinates (NAD83, Decimal Degrees to 5 digits):

Latitude: 39.38585

Longitude: -80.35668

SIC Code: 1311

DAQ Facility ID No. (For existing facilities)

NAICS Code:

CERTIFICATION OF INFORMATION

This G70-D General Permit Registration Application shall be signed below by a Responsible Official. A Responsible Official is a President, Vice President, Secretary, Treasurer, General Partner, General Manager, a member of the Board of Directors, or Owner, depending on business structure. A business may certify an Authorized Representative who shall have authority to bind the Corporation, Partnership, Limited Liability Company, Association, Joint Venture or Sole Proprietorship. Required records of daily throughput, hours of operation and maintenance, general correspondence, compliance certifications and all required notifications must be signed by a Responsible Official or an Authorized Representative. If a business wishes to certify an Authorized Representative, the official agreement below shall be checked off and the appropriate names and signatures entered. **Any administratively incomplete or improperly signed or unsigned G70-D Registration Application will be returned to the applicant. Furthermore, if the G70-D forms are not utilized, the application will be returned to the applicant. No substitution of forms is allowed.**

I hereby certify that _____ is an Authorized Representative and in that capacity shall represent the interest of the business (e.g., Corporation, Partnership, Limited Liability Company, Association Joint Venture or Sole Proprietorship) and may obligate and legally bind the business. If the business changes its Authorized Representative, a Responsible Official shall notify the Director of the Division of Air Quality immediately.

I hereby certify that all information contained in this G70-D General Permit Registration Application and any supporting documents appended hereto is, to the best of my knowledge, true, accurate and complete, and that all reasonable efforts have been made to provide the most comprehensive information possible.

Responsible Official Signature: 

Name and Title: Stacey Lucas, Vice President, Health Safety and Environment

Phone: 724-940-1118

Fax:

Email: slucas@mkeystone.com

Date: 1/30/17

If applicable:

Authorized Representative Signature: _____

Name and Title:

Phone:

Fax:

Email:

Date:

If applicable:

Environmental Contact 

Name and Title: Meghan M.B. Yingling, Environmental Compliance Manager

Phone: 724-940-1112

Fax:

Email: myingling@mkeystone.com

Date: 1-30-17

OPERATING SITE INFORMATION	
Briefly describe the proposed new operation and/or any change(s) to the facility: New operation for production of Natural Gas including four well heads, four in-line heaters, four (400 BBL) produced liquid tanks and one (210 BBL) sand/produced liquid tank.	
Directions to the facility: From 79 South, Take exit 115 for WV-20 toward Stonewood/Nutterfort 0.3 mi, Turn Right onto WV-20 0.1 mi; Turn Left onto Suds Run Rd. 1.4 mi; Turn Right onto Chub Run Rd/Mt. Clare Rd 2.3 mi; Turn Right onto County Rt 25 1.7 mi; Turn Left onto 2 Licks Rd. Access Rd. is at intersection	
ATTACHMENTS AND SUPPORTING DOCUMENTS	
I have enclosed the following required documents:	
Check payable to WVDEP – Division of Air Quality with the appropriate application fee (per 45CSR13 and 45CSR22).	
<input type="checkbox"/> Check attached to front of application. <input type="checkbox"/> I wish to pay by electronic transfer. Contact for payment (incl. name and email address): <input checked="" type="checkbox"/> I wish to pay by credit card Contact for payment (incl. name and email address): Thomas Seguljic, tom.seguljic@hrpassociates.com	
<input checked="" type="checkbox"/> \$500 (Construction, Modification, and Relocation) <input type="checkbox"/> \$300 (Class II Administrative Update) <input type="checkbox"/> \$1,000 NSPS fee for 40 CFR60, Subpart IIII, JJJJ, OOOO and/or OOOOa ¹ <input type="checkbox"/> \$2,500 NESHAP fee for 40 CFR63, Subpart ZZZZ and/or HH ²	
¹ Only one NSPS fee will apply. ² Only one NESHAP fee will apply. The Subpart ZZZZ NESHAP fee will be waived for new engines that satisfy requirements by complying with NSPS, Subparts IIII and/or JJJJ. <i>NSPS and NESHAP fees apply to new construction or if the source is being modified.</i>	
<input checked="" type="checkbox"/> Responsible Official or Authorized Representative Signature (if applicable)	
<input checked="" type="checkbox"/> Single Source Determination Form (must be completed)– Attachment A	
<input type="checkbox"/> Siting Criteria Waiver (if applicable) – Attachment B	<input checked="" type="checkbox"/> Current Business Certificate – Attachment C
<input checked="" type="checkbox"/> Process Flow Diagram – Attachment D	<input checked="" type="checkbox"/> Process Description – Attachment E
<input checked="" type="checkbox"/> Plot Plan – Attachment F	<input checked="" type="checkbox"/> Area Map – Attachment G
<input checked="" type="checkbox"/> G70-D Section Applicability Form – Attachment H	<input checked="" type="checkbox"/> Emission Units/ERD Table – Attachment I
<input checked="" type="checkbox"/> Fugitive Emissions Summary Sheet – Attachment J	
<input checked="" type="checkbox"/> Gas Well Affected Facility Data Sheet (if applicable) – Attachment K	
<input checked="" type="checkbox"/> Storage Vessel(s) Data Sheet (include gas sample data, USEPA Tanks, simulation software (e.g. ProMax, E&P Tanks, HYSYS, etc.), etc. where applicable) – Attachment L	
<input checked="" type="checkbox"/> Natural Gas Fired Fuel Burning Unit(s) Data Sheet (GPUs, Heater Treaters, In-Line Heaters if applicable) – Attachment M	
<input type="checkbox"/> Internal Combustion Engine Data Sheet(s) (include manufacturer performance data sheet(s) if applicable) – Attachment N	
<input checked="" type="checkbox"/> Tanker Truck/Rail Car Loading Data Sheet (if applicable) – Attachment O	
<input type="checkbox"/> Glycol Dehydration Unit Data Sheet(s) (include wet gas analysis, GRI- GLYCalc™ input and output reports and information on reboiler if applicable) – Attachment P	
<input checked="" type="checkbox"/> Pneumatic Controllers Data Sheet – Attachment Q	
<input checked="" type="checkbox"/> Pneumatic Pump Data Sheet – Attachment R	
<input type="checkbox"/> Air Pollution Control Device/Emission Reduction Device(s) Sheet(s) (include manufacturer performance data sheet(s) if applicable) – Attachment S	
<input checked="" type="checkbox"/> Emission Calculations (please be specific and include all calculation methodologies used) – Attachment T	
<input checked="" type="checkbox"/> Facility-wide Emission Summary Sheet(s) – Attachment U	
<input checked="" type="checkbox"/> Class I Legal Advertisement – Attachment V	
<input checked="" type="checkbox"/> One (1) paper copy and two (2) copies of CD or DVD with pdf copy of application and attachments	

All attachments must be identified by name, divided into sections, and submitted in order.

ATTACHMENT A - SINGLE SOURCE DETERMINATION FORM

Classifying multiple facilities as one “stationary source” under 45CSR13, 45CSR14, and 45CSR19 is based on the definition of Building, structure, facility, or installation as given in §45-14-2.13 and §45-19-2.12. The definition states:

“Building, Structure, Facility, or Installation” means all of the pollutant-emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control). Pollutant-emitting activities are a part of the same industrial grouping if they belong to the same “Major Group” (i.e., which have the same two (2)-digit code) as described in the Standard Industrial Classification Manual, 1987 (United States Government Printing Office stock number GPO 1987 0-185-718:QL 3).

The Source Determination Rule for the oil and gas industry was published in the Federal Register on June 3, 2016 and will become effective on August 2, 2016. EPA defined the term “adjacent” and stated that equipment and activities in the oil and gas sector that are under common control will be considered part of the same source if they are located on the same site or on sites that share equipment and are within ¼ mile of each other.

Is there equipment and activities in the same industrial grouping (defined by SIC code)?

Yes No

Is there equipment and activities under the control of the same person/people?

Yes No

Is there equipment and activities located on the same site or on sites that share equipment and are within ¼ mile of each other?

Yes No

ATTACHMENT C–CURRENT BUSINESS CERTIFICATE

If the applicant is a resident of West Virginia, the applicant should provide a copy of the current Business Registration Certificate issued to them from the West Virginia Secretary of State's Office. If the applicant is not a resident of the State of West Virginia, the registrant should provide a copy of the Certificate of Authority/Authority of LLC/Registration. This information is required for all sources to operate a business in West Virginia regardless of whether it is a construction, modification, or administrative update.

If you are a new business to West Virginia and have applied to the West Virginia Secretary of State's Office for a business license, please include a copy of your application.

Please note: Under the West Virginia Bureau of Employment Programs, 96CSR1, the DAQ may not grant, issue, or renew approval of any permit, general permit registration, or Certificate to Operate to any employing unit whose account is in default with the Bureau of Employment Programs Unemployment Compensation Division.

**WEST VIRGINIA
STATE TAX DEPARTMENT
BUSINESS REGISTRATION
CERTIFICATE**

ISSUED TO:
**MOUNTAINEER KEYSTONE LLC
6031 WALLACE ROAD EXT 300
WEXFORD, PA 15090-3430**

BUSINESS REGISTRATION ACCOUNT NUMBER: 2247-4512

This certificate is issued on: 01/13/2017

*This certificate is issued by
the West Virginia State Tax Commissioner
in accordance with Chapter 11, Article 12, of the West Virginia Code*

*The person or organization identified on this certificate is registered
to conduct business in the State of West Virginia at the location above.*

This certificate is not transferrable and must be displayed at the location for which issued

This certificate shall be permanent until cessation of the business for which the certificate of registration was granted or until it is suspended, revoked or cancelled by the Tax Commissioner.

Change in name or change of location shall be considered a cessation of the business and a new certificate shall be required.

TRAVELING/STREET VENDORS: Must carry a copy of this certificate in every vehicle operated by them.
CONTRACTORS, DRILLING OPERATORS, TIMBER/LOGGING OPERATIONS: Must have a copy of this certificate displayed at every job site within West Virginia.

ATTACHMENT D – PROCESS FLOW DIAGRAM

Provide a diagram or schematic that supplements the process description of the operation. The process flow diagram must show all sources, components or facets of the operation in an understandable line sequence of operation. The process flow diagram should include the emission unit ID numbers, the pollution control device ID numbers, and the emission point ID numbers consistent with references in other attachments of the application. For a proposed modification, clearly identify the process areas, emission units, emission points, and/or control devices that will be modified, and specify the nature and extent of the modification.

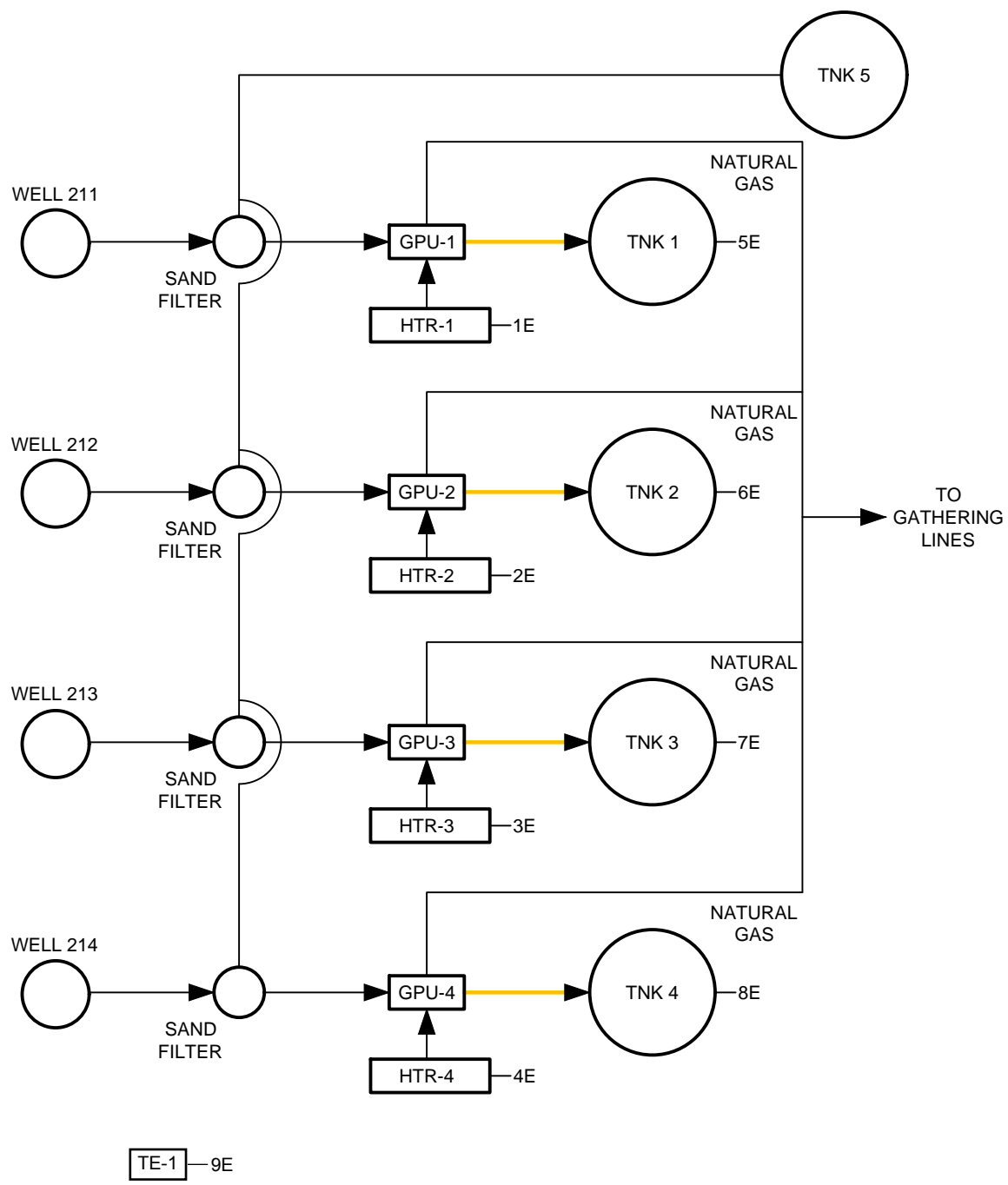
Use the following guidelines to ensure a complete process flow diagram:

- The process flow diagram shall logically follow the entire process from beginning to end.
- Identify each emission source and air pollution control device with proper and consistent emission unit identification numbers, emission point identification numbers, and control device identification numbers.
- The process flow lines may appear different for clarity. For example, dotted lines may be used for vapor flow and solid lines used for liquid flow and arrows for direction of flow.
- The process flow lines may be color coded. For example: new or modified equipment may be red; old or existing equipment may be blue; different stages of preparation such as raw material may be green; and, finished product or refuse, another color.

DRAWING NAME: S:\Data\AMMOURE - MOUNTAINEER KEYSTONE\6031 WALLACE RD EXT. WEXFORD, PA\Mountaineer Keystone\Well Pad Permit App\Tony's Bridge\ATTACHMENT D - PROCESS FLOW DIAGRAM.dwg LAYOUT: 8.5 x 11 P. - SSM. PLOT DATE: Jan 18, 2017 - 6:40pm OPERATOR: BOB

LEGEND

- -PRODUCED LIQUID
- 6E -EMISSION POINT



PROCESS FLOW DIAGRAM

TONYS BRIDGE WELLPAD
MOUNTAINEER KEYSTONE LLC
 COUNTY ROUTE 25, MT. CLARE, WEST VIRGINIA

NOT TO SCALE

SCALE:

01/11/2017

ISSUE DATE:

MOU7000.AC

PROJECT NUMBER:

ATTACHMENT
D
 SHEET NO.

ATTACHMENT E – PROCESS DESCRIPTION

Provide a detailed written description of the operation for which the applicant is seeking a permit. The process description is used in conjunction with the process flow diagram to provide the reviewing engineer a complete understanding of the activity at the operation. Describe in detail and order the complete process operation.

Use the following guidelines to ensure a complete Process Description:

- The process flow diagram should be prepared first and used as a guide when preparing the process description. The written description shall follow the logical order of the process flow diagram.
- All emission sources, emission points, and air pollution control devices must be included in the process description.
- When modifications are proposed, describe the modifications and the effect the changes will have on the emission sources, emission points, control devices and the potential emissions.
- Proper emission source ID numbers must be used consistently in the process description, the process flow diagram, the emissions calculations, and the emissions summary information provided.
- Include any additional information that may facilitate the reviewers understanding of the process operation.

The process description is required for all sources regardless of whether it is a construction, modification, or administrative update.

Tonys Bridge is a wellpad that will consist of 4 natural gas (dry) production wells and the following equipment:

- 4 - 1 MMBTU/Hr Heater (HTR-1 [1E], HTR-2 [2E], HTR-3 [3E] and HTR-4 [4E])
- 4 - 400 BBL Produced Liquid (water) Tanks (TNK-1 [5E], TNK-2 [6E], TNK-3 [7E], TNK-4 [8E]); and
- 1 - 210 BBL sand/water Tank (TNK-5)
- 1 – 0.0007 MMBTU/Hr Thermoelectric Generator (TE-1 [9E])

ATTACHMENT F – PLOT PLAN

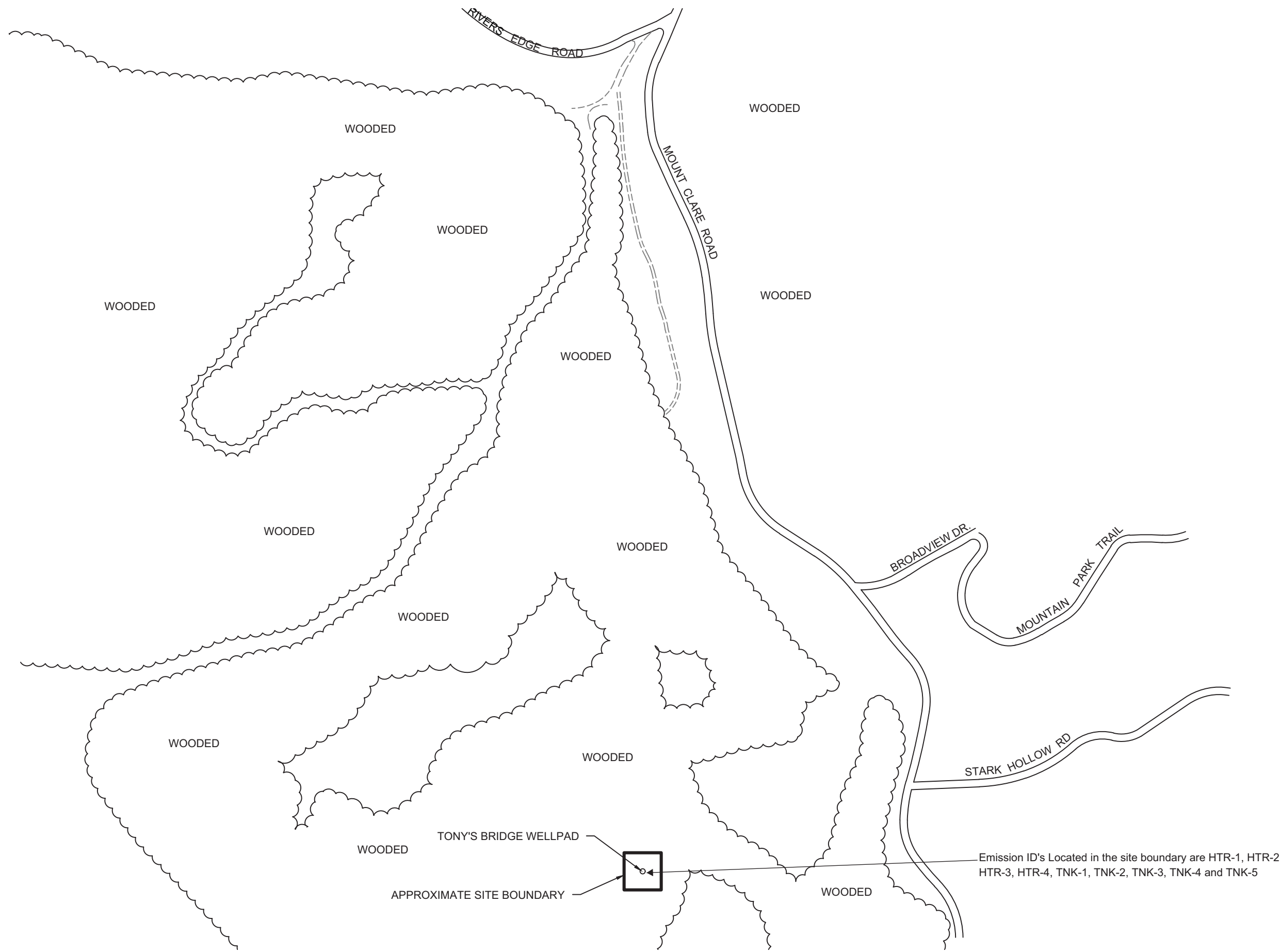
Provide an accurately scaled and detailed Plot Plan showing the locations of all emission units, emission points, and air pollution control devices. Show all emission units, affected facilities, enclosures, buildings and plant entrances and exits from the nearest public road(s) as appropriate. Note height, width and length of proposed or existing buildings and structures.

A scale between 1"=10' and 1"=200' should be used with the determining factor being the level of detail necessary to show operation or plant areas, affected facilities, emission unit sources, transfer points, etc. An overall small scale plot plan (e.g., 1"=300') should be submitted in addition to larger scale plot plans for process or activity areas (e.g., 1"=50') if the plant is too large to allow adequate detail on a single plot plan. Process or activity areas may be grouped for the enlargements as long as sufficient detail is shown.

Use the following guidelines to ensure a complete Plot Plan:

- Facility name
- Company name
- Company facility ID number (for existing facilities)
- Plot scale, north arrow, date drawn, and submittal date.
- Facility boundary lines
- Base elevation
- Lat/Long reference coordinates from the area map and corresponding reference point elevation
- Location of all point sources labeled with proper and consistent source identification numbers

This information is required for all sources regardless of whether it is a construction, modification, or administrative update.



197 SCOTT SWAMP ROAD
 FARMINGTON, CT 06032
 (860) 674-9570
 HRPASSOCIATES.COM



REVISIONS	
NO.	DATE

DESIGNED BY:	MEW
DRAWN BY:	BOB
REVIEWED BY:	TSS

ISSUE DATE:	1/13/2017
PROJECT NUMBER:	MOU7000.AC
SHEET SIZE:	11"x17"

PLOT PLAN
 TONY'S BRIDGE WELLPAD
 COUNTY ROUTE 25
 MT. CLARE, WEST VIRGINIA

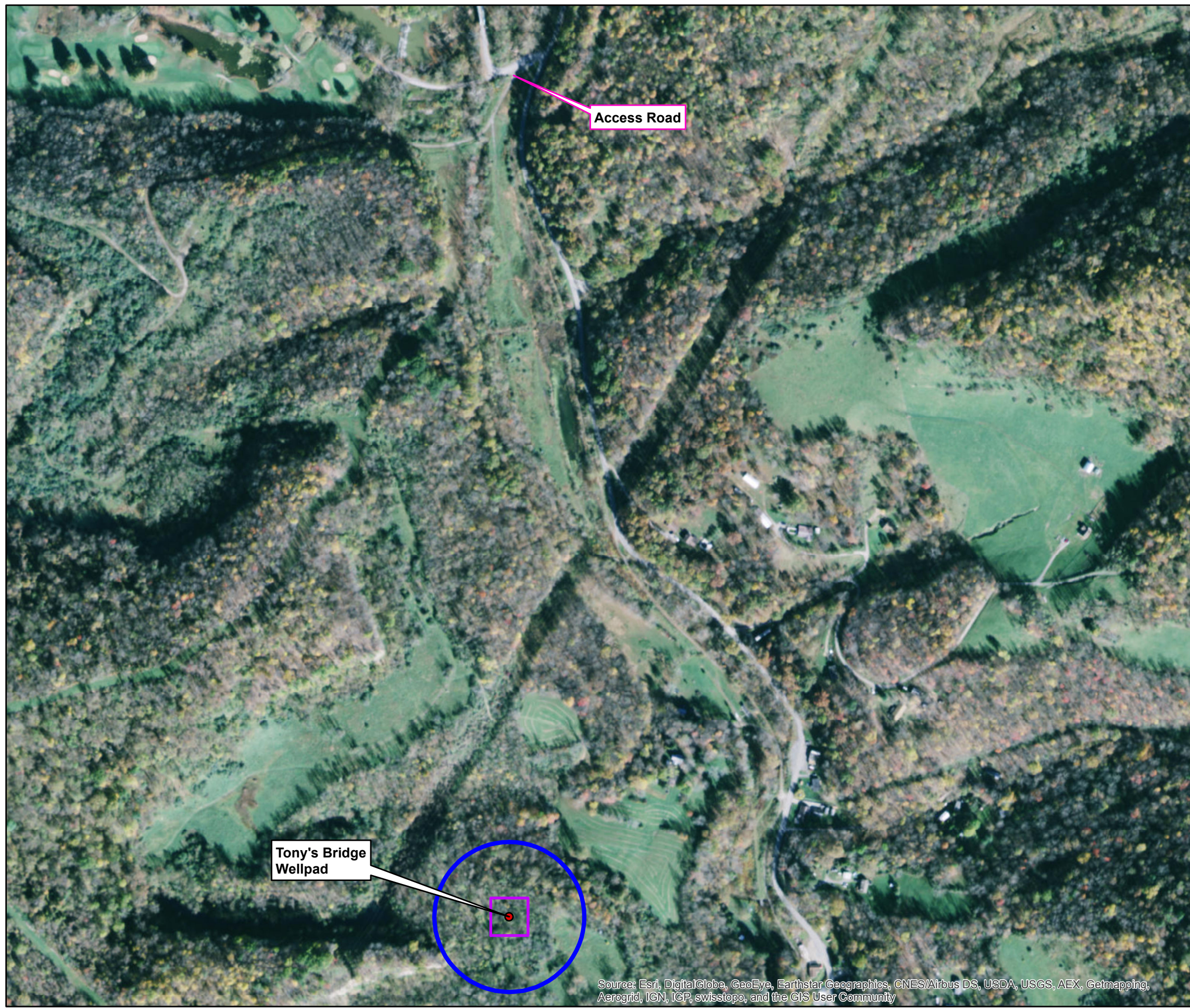
ATTACHMENT
F

ATTACHMENT G – AREA MAP

Provide an Area Map showing the current or proposed location of the operation. On this map, identify plant or operation property lines, access roads and any adjacent dwelling, business, public building, school, church, cemetery, community or institutional building or public park within a 300' boundary circle of the collective emission units.

Please provide a 300' boundary circle on the map surrounding the proposed emission units collectively.

This information is required for all sources regardless of whether it is a construction, modification, or administrative update.



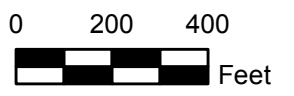
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Legend

- Well Pad
- 300 foot Buffer
- Approx. Site Boundary



197 SCOTT SWAMP ROAD
FARMINGTON, CT 06032
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Revisions	
No.	Date

Designed By:	MEW
Drawn By:	BOB
Reviewed By:	TSS

Issue Date:	01/12/2017
Project No:	MOU7000.AC
Sheet Size:	11X17

Area Map
Tonys Bridge Wellpad
Mountaineer Keystone LLC
County Route 25
Mt. Clare, West Virginia

ATTACHMENT
G

ATTACHMENT H-G70-D SECTION APPLICABILITY FORM

**General Permit G70-D Registration
Section Applicability Form**

General Permit G70-D was developed to allow qualified applicants to seek registration for a variety of sources. These sources include gas well affected facilities, storage vessels, gas production units, in-line heaters, heater treaters, glycol dehydration units and associated reboilers, pneumatic controllers, pneumatic pumps, reciprocating internal combustion engines (RICEs), tank truck/rail car loading, fugitive emissions, completion combustion devices, flares, enclosed combustion devices, and vapor recovery systems. All registered facilities will be subject to Sections 1.0, 2.0, 3.0, and 4.0.

General Permit G70-D allows the registrant to choose which sections of the permit they are seeking registration under. Therefore, please mark which additional sections that you are applying for registration under. If the applicant is seeking registration under multiple sections, please select all that apply. Please keep in mind, that if this registration is approved, the issued registration will state which sections will apply to your affected facility.

GENERAL PERMIT G70-D APPLICABLE SECTIONS	
X Section 5.0	Gas and Oil Well Affected Facility (NSPS, Subpart OOOO/OOOOa)
X Section 6.0	Storage Vessels Containing Condensate and/or Produced Water ¹
<input type="checkbox"/> Section 7.0	Storage Vessel Affected Facility (NSPS, Subpart OOOO/OOOOa)
<input type="checkbox"/> Section 8.0	Control Devices and Emission Reduction Devices not subject to NSPS Subpart OOOO/OOOOa and/or NESHAP Subpart HH
X Section 9.0	Small Heaters and Reboilers not subject to 40CFR60 Subpart Dc
<input type="checkbox"/> Section 10.0	Pneumatic Controllers Affected Facility (NSPS, Subpart OOOO/OOOOa)
<input type="checkbox"/> Section 11.0	Pneumatic Pump Affected Facility (NSPS, Subpart OOOOa)
X Section 12.0	Fugitive Emissions GHG and VOC Standards (NSPS, Subpart OOOOa)
<input type="checkbox"/> Section 13.0	Reciprocating Internal Combustion Engines, Generator Engines
X Section 14.0	Tanker Truck/Rail Car Loading ²
<input type="checkbox"/> Section 15.0	Glycol Dehydration Units ³

- 1 Applicants that are subject to Section 6 may also be subject to Section 7 if the applicant is subject to the NSPS, Subparts OOOO or OOOOa control requirements or the applicable control device requirements of Section 8.
- 2 Applicants that are subject to Section 14 may also be subject to control device and emission reduction device requirements of Section 8.
- 3 Applicants that are subject to Section 15 may also be subject to the requirements of Section 9 (reboilers). Applicants that are subject to Section 15 may also be subject to control device and emission reduction device requirements of Section 8.

ATTACHMENT J – FUGITIVE EMISSIONS SUMMARY SHEET

Sources of fugitive emissions may include loading operations, equipment leaks, blowdown emissions, etc.
Use extra pages for each associated source or equipment if necessary.

Source/Equipment: Facility Wide

Leak Detection Method Used		<input type="checkbox"/> Audible, visual, and olfactory (AVO) inspections	<input type="checkbox"/> Infrared (FLIR) cameras	<input checked="" type="checkbox"/> Other (please describe): Will Comply with Subpart OOOOa	<input type="checkbox"/> None required		
Component Type	Closed Vent System	Count	Source of Leak Factors (EPA, other (specify))	Stream type (gas, liquid, etc.)	Estimated Emissions (tpy)		
					VOC	HAP	GHG (methane, CO ₂ e)
Pumps	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	0		<input type="checkbox"/> Gas <input type="checkbox"/> Liquid <input type="checkbox"/> Both	0	0	0
Valves	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	249	0.027 scf/hr/component (Subpart W: Table W-1A)	<input checked="" type="checkbox"/> Gas <input type="checkbox"/> Liquid <input type="checkbox"/> Both	0.4302	<0.001	27.98
Safety Relief Valves	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	21	0.040 scf/hr/component (Subpart W: Table W-1A)	<input checked="" type="checkbox"/> Gas <input type="checkbox"/> Liquid <input type="checkbox"/> Both	0.0537	<0.001	3.50
Open Ended Lines	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5	0.061 scf/hr/component (Subpart W: Table W-1A)	<input checked="" type="checkbox"/> Gas <input type="checkbox"/> Liquid <input type="checkbox"/> Both	0.00195	<0.001	1.27
Sampling Connections	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4	0.003 scf/hr/component (Subpart W: Table W-1A)	<input checked="" type="checkbox"/> Gas <input type="checkbox"/> Liquid <input type="checkbox"/> Both	0.0008	<0.001	0.0499
Connections(Not sampling)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1226	0.003 scf/hr/component (Subpart W: Table W-1A)	<input checked="" type="checkbox"/> Gas <input type="checkbox"/> Liquid <input type="checkbox"/> Both	0.2353	<0.001	15.31
Compressors	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	0		<input type="checkbox"/> Gas <input type="checkbox"/> Liquid <input type="checkbox"/> Both	0	0	0
Flanges	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	241	0.003 scf/hr/component, Assumed to be equal to connection emission rate from Subpart W: Table W-1A	<input checked="" type="checkbox"/> Gas <input type="checkbox"/> Liquid <input type="checkbox"/> Both	0.0463	<0.001	3.01
Other ¹	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	62	0.003 scf/hr/component, Assumed to be equal to connection emission rate from Subpart W: Table W-1A	<input checked="" type="checkbox"/> Gas <input type="checkbox"/> Liquid <input type="checkbox"/> Both	0.0119	<0.001	0.7700

¹ Other equipment types may include compressor seals, relief valves, diaphragms, drains, meters, etc.

Please provide an explanation of the sources of fugitive emissions (e.g. pigging operations, equipment blowdowns, pneumatic controllers, etc.):
Assumed each component is constantly leaking at a specified rate based on Subpart W

Please indicate if there are any closed vent bypasses (include component):

NA

Specify all equipment used in the closed vent system (e.g. VRU, ERD, thief hatches, tanker truck/rail car loading, etc.)

NA

ATTACHMENT K – GAS WELL AFFECTED FACILITY DATA SHEET

Complete this data sheet if you are the owner or operator of a gas well affected facility for which construction, modification or reconstruction commenced after August 23, 2011. This form must be completed for natural gas well affected facilities regardless of when flowback operations occur (or have occurred).

API Number	Date of Flowback	Date of Well Completion	Green Completion and/or Combustion Device	Subject to OOOO or OOOOa?
4703305896	Expected 3/17	Expected 3/17	REC	Yes
4703305870	Expected 3/17	Expected 3/17	REC	Yes
4703305871	Expected 3/17	Expected 3/17	REC	Yes
4703305884	Expected 3/17	Expected 3/17	REC	Yes

Note: If future wells are planned and no API number is available please list as PLANNED. If there are existing wells that commenced construction prior to August 23, 2011, please acknowledge as existing.

This is the same API (American Petroleum Institute) well number(s) provided in the well completion notification and as provided to the WVDEP, Office of Oil and Gas for the well permit. The API number may be provided on the application without the state code (047).

Every oil and gas well permitted in West Virginia since 1929 has been issued an API number. This API is used by agencies to identify and track oil and gas wells.

The API number has the following format: 047-001-00001

Where,

- 047 = State code. The state code for WV is 047.*
- 001 = County Code. County codes are odd numbers, beginning with 001 (Barbour) and continuing to 109 (Wyoming).*
- 00001= Well number. Each well will have a unique well number.*

ATTACHMENT L – STORAGE VESSEL DATA SHEET

Complete this data sheet if you are the owner or operator of a storage vessel that contains condensate and/or produced water. This form must be completed for *each* new or modified bulk liquid storage vessel(s) that contains condensate and/or produced water. (If you have more than one (1) identical tank (i.e. 4-400 bbl condensate tanks), then you can list all on one (1) data sheet). **Include gas sample analysis, flashing emissions, working and breathing losses, USEPA Tanks, simulation software (ProMax, E&P Tanks, HYSYS, etc.), and any other supporting documents where applicable.**

The following information is REQUIRED:

- Composition of the representative sample used for the simulation
- For each stream that contributes to flashing emissions:
 - Temperature and pressure (inlet and outlet from separator(s))
 - Simulation-predicted composition
- Molecular weight
- Flow rate
- Resulting flash emission factor or flashing emissions from simulation
- Working/breathing loss emissions from tanks and/or loading emissions if simulation is used to quantify those emissions

Additional information may be requested if necessary.

GENERAL INFORMATION (REQUIRED)

1. Bulk Storage Area Name Tonys Bridge	2. Tank Name Tank -1
3. Emission Unit ID number: TNK-1	4. Emission Point ID number 5E
5. Date Installed , Modified or Relocated (<i>for existing tanks</i>) March 2017 (expected) Was the tank manufactured after August 23, 2011 and on or before September 18, 2015? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Was the tank manufactured after September 18, 2015? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	6. Type of change: <input checked="" type="checkbox"/> New construction <input type="checkbox"/> New stored material <input type="checkbox"/> Other <input type="checkbox"/> Relocation
7A. Description of Tank Modification (<i>if applicable</i>)	
7B. Will more than one material be stored in this tank? <i>If so, a separate form must be completed for each material.</i> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
7C. Was USEPA Tanks simulation software utilized? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If Yes, please provide the appropriate documentation and items 8-42 below are not required.</i>	

TANK INFORMATION

8. Design Capacity (<i>specify barrels or gallons</i>). Use the internal cross-sectional area multiplied by internal height. 400 BBL	
9A. Tank Internal Diameter (ft.) 12	9B. Tank Internal Height (ft.) 20
10A. Maximum Liquid Height (ft.) 17	10B. Average Liquid Height (ft.) 10
11A. Maximum Vapor Space Height (ft.) 17	11B. Average Vapor Space Height (ft.) 10
12. Nominal Capacity (<i>specify barrels or gallons</i>). This is also known as “working volume”.	

22. Shell Condition (if metal and unlined): X No Rust <input type="checkbox"/> Light Rust <input type="checkbox"/> Dense Rust <input type="checkbox"/> Not applicable			
22A. Is the tank heated? <input type="checkbox"/> Yes X No	22B. If yes, operating temperature:	22C. If yes, how is heat provided to tank?	
23. Operating Pressure Range (psig): Ambient Must be listed for tanks using VRUs with closed vent system.			
24. Is the tank a Vertical Fixed Roof Tank ? X Yes <input type="checkbox"/> No	24A. If yes, for dome roof provide radius (ft): 6	24B. If yes, for cone roof, provide slop (ft/ft):	
25. Complete item 25 for Floating Roof Tanks <input type="checkbox"/> Does not apply X			
25A. Year Internal Floaters Installed:			
25B. Primary Seal Type (<i>check one</i>): <input type="checkbox"/> Metallic (mechanical) shoe seal <input type="checkbox"/> Liquid mounted resilient seal <input type="checkbox"/> Vapor mounted resilient seal <input type="checkbox"/> Other (describe):			
25C. Is the Floating Roof equipped with a secondary seal? <input type="checkbox"/> Yes <input type="checkbox"/> No			
25D. If yes, how is the secondary seal mounted? (<i>check one</i>) <input type="checkbox"/> Shoe <input type="checkbox"/> Rim <input type="checkbox"/> Other (describe):			
25E. Is the floating roof equipped with a weather shield? <input type="checkbox"/> Yes <input type="checkbox"/> No			
25F. Describe deck fittings:			
26. Complete the following section for Internal Floating Roof Tanks X Does not apply			
26A. Deck Type: <input type="checkbox"/> Bolted <input type="checkbox"/> Welded		26B. For bolted decks, provide deck construction:	
26C. Deck seam. Continuous sheet construction: <input type="checkbox"/> 5 ft. wide <input type="checkbox"/> 6 ft. wide <input type="checkbox"/> 7 ft. wide <input type="checkbox"/> 5 x 7.5 ft. wide <input type="checkbox"/> 5 x 12 ft. wide <input type="checkbox"/> other (describe)			
26D. Deck seam length (ft.):	26E. Area of deck (ft ²):	26F. For column supported tanks, # of columns:	26G. For column supported tanks, diameter of column:
27. Closed Vent System with VRU? <input type="checkbox"/> Yes X No			
28. Closed Vent System with Enclosed Combustor? <input type="checkbox"/> Yes X No			
SITE INFORMATION			
29. Provide the city and state on which the data in this section are based: Charleston, WV			
30. Daily Avg. Ambient Temperature (°F): 54.75		31. Annual Avg. Maximum Temperature (°F): 65.5	
32. Annual Avg. Minimum Temperature (°F): 44		33. Avg. Wind Speed (mph): 6.3	
34. Annual Avg. Solar Insulation Factor (BTU/ft ² -day): 1123		35. Atmospheric Pressure (psia): 14.617	
LIQUID INFORMATION			
36. Avg. daily temperature range of bulk liquid (°F): 13.3	36A. Minimum (°F): 52.2	36B. Maximum (°F): 65.5	
37. Avg. operating pressure range of tank (psig): 0.425	37A. Minimum (psig): 0.2191	37B. Maximum (psig): 0.9075	
38A. Minimum liquid surface temperature (°F): 52.2		38B. Corresponding vapor pressure (psia): 0.2191	
39A. Avg. liquid surface temperature (°F): 56.3		39B. Corresponding vapor pressure (psia): 0.4525	
40A. Maximum liquid surface temperature (°F): 66.7		40B. Corresponding vapor pressure (psia): 0.9075	
41. Provide the following for each liquid or gas to be stored in the tank. Add additional pages if necessary.			
41A. Material name and composition:	Produced Liquid		
41B. CAS number:	-		
41C. Liquid density (lb/gal):	8.33		
41D. Liquid molecular weight (lb/lb-mole):	18.02		
41E. Vapor molecular weight (lb/lb-mole):	18.02		
41F. Maximum true vapor pressure (psia):	1.0		
41G. Maximum Reid vapor pressure (psia):	0.46		
41H. Months Storage per year. From: To:	12		
42. Final maximum gauge pressure and temperature prior to transfer into tank used as inputs into flashing emission calculations.	O/Ambient		

ATTACHMENT L – STORAGE VESSEL DATA SHEET

Complete this data sheet if you are the owner or operator of a storage vessel that contains condensate and/or produced water. This form must be completed for *each* new or modified bulk liquid storage vessel(s) that contains condensate and/or produced water. (If you have more than one (1) identical tank (i.e. 4-400 bbl condensate tanks), then you can list all on one (1) data sheet). **Include gas sample analysis, flashing emissions, working and breathing losses, USEPA Tanks, simulation software (ProMax, E&P Tanks, HYSYS, etc.), and any other supporting documents where applicable.**

The following information is REQUIRED:

- Composition of the representative sample used for the simulation
- For each stream that contributes to flashing emissions:
 - Temperature and pressure (inlet and outlet from separator(s))
 - Simulation-predicted composition
- Molecular weight
- Flow rate
- Resulting flash emission factor or flashing emissions from simulation
- Working/breathing loss emissions from tanks and/or loading emissions if simulation is used to quantify those emissions

Additional information may be requested if necessary.

GENERAL INFORMATION (REQUIRED)

1. Bulk Storage Area Name Tonys Bridge	2. Tank Name Tank -2
3. Emission Unit ID number: TNK-2	4. Emission Point ID number 6E
5. Date Installed , Modified or Relocated (<i>for existing tanks</i>) (Expected March 2017) Was the tank manufactured after August 23, 2011 and on or before September 18, 2015? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Was the tank manufactured after September 18, 2015? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	6. Type of change: <input checked="" type="checkbox"/> New construction <input type="checkbox"/> New stored material <input type="checkbox"/> Other <input type="checkbox"/> Relocation
7A. Description of Tank Modification (<i>if applicable</i>)	
7B. Will more than one material be stored in this tank? <i>If so, a separate form must be completed for each material.</i> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
7C. Was USEPA Tanks simulation software utilized? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
<i>If Yes, please provide the appropriate documentation and items 8-42 below are not required.</i>	

TANK INFORMATION

8. Design Capacity (<i>specify barrels or gallons</i>). Use the internal cross-sectional area multiplied by internal height. 400 BBL	
9A. Tank Internal Diameter (ft.) 12	9B. Tank Internal Height (ft.) 20
10A. Maximum Liquid Height (ft.) 17	10B. Average Liquid Height (ft.) 10
11A. Maximum Vapor Space Height (ft.) 17	11B. Average Vapor Space Height (ft.) 10

<input checked="" type="checkbox"/> Riveted <input type="checkbox"/> Gunit lined <input type="checkbox"/> Epoxy-coated rivets <input type="checkbox"/> Other (describe)			
21A. Shell Color: Tan		21B. Roof Color: Tan	
21C. Year Last Painted:2017			
22. Shell Condition (if metal and unlined): <input checked="" type="checkbox"/> No Rust <input type="checkbox"/> Light Rust <input type="checkbox"/> Dense Rust <input type="checkbox"/> Not applicable			
22A. Is the tank heated? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		22B. If yes, operating temperature:	
22C. If yes, how is heat provided to tank?			
23. Operating Pressure Range (psig):Ambient Must be listed for tanks using VRUs with closed vent system.			
24. Is the tank a Vertical Fixed Roof Tank ?		24A. If yes, for dome roof provide radius (ft):	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		6	
24B. If yes, for cone roof, provide slop (ft/ft):			
25. Complete item 25 for Floating Roof Tanks <input type="checkbox"/> Does not apply <input checked="" type="checkbox"/>			
25A. Year Internal Floaters Installed:			
25B. Primary Seal Type (<i>check one</i>): <input type="checkbox"/> Metallic (mechanical) shoe seal <input type="checkbox"/> Liquid mounted resilient seal <input type="checkbox"/> Vapor mounted resilient seal <input type="checkbox"/> Other (describe):			
25C. Is the Floating Roof equipped with a secondary seal? <input type="checkbox"/> Yes <input type="checkbox"/> No			
25D. If yes, how is the secondary seal mounted? (<i>check one</i>) <input type="checkbox"/> Shoe <input type="checkbox"/> Rim <input type="checkbox"/> Other (describe):			
25E. Is the floating roof equipped with a weather shield? <input type="checkbox"/> Yes <input type="checkbox"/> No			
25F. Describe deck fittings:			
26. Complete the following section for Internal Floating Roof Tanks <input checked="" type="checkbox"/> Does not apply			
26A. Deck Type: <input type="checkbox"/> Bolted <input type="checkbox"/> Welded		26B. For bolted decks, provide deck construction:	
26C. Deck seam. Continuous sheet construction: <input type="checkbox"/> 5 ft. wide <input type="checkbox"/> 6 ft. wide <input type="checkbox"/> 7 ft. wide <input type="checkbox"/> 5 x 7.5 ft. wide <input type="checkbox"/> 5 x 12 ft. wide <input type="checkbox"/> other (describe)			
26D. Deck seam length (ft.):		26E. Area of deck (ft ²):	
		26F. For column supported tanks, # of columns:	
		26G. For column supported tanks, diameter of column:	
27. Closed Vent System with VRU? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
28. Closed Vent System with Enclosed Combustor? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
SITE INFORMATION			
29. Provide the city and state on which the data in this section are based: Charleston, WV			
30. Daily Avg. Ambient Temperature (°F): 54.75		31. Annual Avg. Maximum Temperature (°F):65.5	
32. Annual Avg. Minimum Temperature (°F): 44		33. Avg. Wind Speed (mph): 6.3	
34. Annual Avg. Solar Insulation Factor (BTU/ft ² -day):1123		35. Atmospheric Pressure (psia):14.617	
LIQUID INFORMATION			
36. Avg. daily temperature range of bulk liquid (°F): 13.3		36A. Minimum (°F): 52.2	
		36B. Maximum (°F): 65.5	
37. Avg. operating pressure range of tank (psig): 0.425		37A. Minimum (psig):0.2191	
		37B. Maximum (psig): 0.9075	
38A. Minimum liquid surface temperature (°F):52.2		38B. Corresponding vapor pressure (psia):0.2191	
39A. Avg. liquid surface temperature (°F): 56.3		39B. Corresponding vapor pressure (psia):0.4525	
40A. Maximum liquid surface temperature (°F):66.7		40B. Corresponding vapor pressure (psia):0.9075	
41. Provide the following for each liquid or gas to be stored in the tank. Add additional pages if necessary.			
41A. Material name and composition:		Produced Liquid	
41B. CAS number:		-	
41C. Liquid density (lb/gal):		8.33	
41D. Liquid molecular weight (lb/lb-mole):		18.02	
41E. Vapor molecular weight (lb/lb-mole):		18.02	
41F. Maximum true vapor pressure (psia):		1.0	
41G. Maximum Reid vapor pressure (psia):		0.46	
41H. Months Storage per year. From: To:		12	
42. Final maximum gauge pressure and temperature prior to transfer into tank used as inputs into flashing emission calculations.		O/Ambient	

ATTACHMENT L – STORAGE VESSEL DATA SHEET

Complete this data sheet if you are the owner or operator of a storage vessel that contains condensate and/or produced water. This form must be completed for *each* new or modified bulk liquid storage vessel(s) that contains condensate and/or produced water. (If you have more than one (1) identical tank (i.e. 4-400 bbl condensate tanks), then you can list all on one (1) data sheet). **Include gas sample analysis, flashing emissions, working and breathing losses, USEPA Tanks, simulation software (ProMax, E&P Tanks, HYSYS, etc.), and any other supporting documents where applicable.**

The following information is REQUIRED:

- Composition of the representative sample used for the simulation
- For each stream that contributes to flashing emissions:
 - Temperature and pressure (inlet and outlet from separator(s))
 - Simulation-predicted composition
- Molecular weight
- Flow rate
- Resulting flash emission factor or flashing emissions from simulation
- Working/breathing loss emissions from tanks and/or loading emissions if simulation is used to quantify those emissions

Additional information may be requested if necessary.

GENERAL INFORMATION (REQUIRED)

1. Bulk Storage Area Name Tonys Bridge	2. Tank Name Tank -3
3. Emission Unit ID number: TNK-3	4. Emission Point ID number 7E
5. Date Installed , Modified or Relocated (<i>for existing tanks</i>) (Expected March 2017) Was the tank manufactured after August 23, 2011 and on or before September 18, 2015? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Was the tank manufactured after September 18, 2015? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	6. Type of change: <input checked="" type="checkbox"/> New construction <input type="checkbox"/> New stored material <input type="checkbox"/> Other <input type="checkbox"/> Relocation
7A. Description of Tank Modification (<i>if applicable</i>)	
7B. Will more than one material be stored in this tank? <i>If so, a separate form must be completed for each material.</i> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
7C. Was USEPA Tanks simulation software utilized? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If Yes, please provide the appropriate documentation and items 8-42 below are not required.</i>	

TANK INFORMATION

8. Design Capacity (<i>specify barrels or gallons</i>). Use the internal cross-sectional area multiplied by internal height. 400 BBL	
9A. Tank Internal Diameter (ft.) 12	9B. Tank Internal Height (ft.) 20
10A. Maximum Liquid Height (ft.) 17	10B. Average Liquid Height (ft.) 10
11A. Maximum Vapor Space Height (ft.) 17	11B. Average Vapor Space Height (ft.) 10
12. Nominal Capacity (<i>specify barrels or gallons</i>). This is also known as “working volume”.	

22. Shell Condition (if metal and unlined): X No Rust <input type="checkbox"/> Light Rust <input type="checkbox"/> Dense Rust <input type="checkbox"/> Not applicable			
22A. Is the tank heated? <input type="checkbox"/> Yes X No		22B. If yes, operating temperature:	22C. If yes, how is heat provided to tank?
23. Operating Pressure Range (psig): Ambient Must be listed for tanks using VRUs with closed vent system.			
24. Is the tank a Vertical Fixed Roof Tank ? X Yes <input type="checkbox"/> No		24A. If yes, for dome roof provide radius (ft): 6	24B. If yes, for cone roof, provide slop (ft/ft):
25. Complete item 25 for Floating Roof Tanks <input type="checkbox"/> Does not apply X			
25A. Year Internal Floaters Installed:			
25B. Primary Seal Type (<i>check one</i>): <input type="checkbox"/> Metallic (mechanical) shoe seal <input type="checkbox"/> Liquid mounted resilient seal <input type="checkbox"/> Vapor mounted resilient seal <input type="checkbox"/> Other (describe):			
25C. Is the Floating Roof equipped with a secondary seal? <input type="checkbox"/> Yes <input type="checkbox"/> No			
25D. If yes, how is the secondary seal mounted? (<i>check one</i>) <input type="checkbox"/> Shoe <input type="checkbox"/> Rim <input type="checkbox"/> Other (describe):			
25E. Is the floating roof equipped with a weather shield? <input type="checkbox"/> Yes <input type="checkbox"/> No			
25F. Describe deck fittings:			
26. Complete the following section for Internal Floating Roof Tanks X Does not apply			
26A. Deck Type: <input type="checkbox"/> Bolted <input type="checkbox"/> Welded		26B. For bolted decks, provide deck construction:	
26C. Deck seam. Continuous sheet construction: <input type="checkbox"/> 5 ft. wide <input type="checkbox"/> 6 ft. wide <input type="checkbox"/> 7 ft. wide <input type="checkbox"/> 5 x 7.5 ft. wide <input type="checkbox"/> 5 x 12 ft. wide <input type="checkbox"/> other (describe)			
26D. Deck seam length (ft.):	26E. Area of deck (ft ²):	26F. For column supported tanks, # of columns:	26G. For column supported tanks, diameter of column:
27. Closed Vent System with VRU? <input type="checkbox"/> Yes X No			
28. Closed Vent System with Enclosed Combustor? <input type="checkbox"/> Yes X No			
SITE INFORMATION			
29. Provide the city and state on which the data in this section are based: Charleston, WV			
30. Daily Avg. Ambient Temperature (°F): 54.75		31. Annual Avg. Maximum Temperature (°F): 65.5	
32. Annual Avg. Minimum Temperature (°F): 44		33. Avg. Wind Speed (mph): 6.3	
34. Annual Avg. Solar Insulation Factor (BTU/ft ² -day): 1123		35. Atmospheric Pressure (psia): 14.617	
LIQUID INFORMATION			
36. Avg. daily temperature range of bulk liquid (°F): 13.3	36A. Minimum (°F): 52.2	36B. Maximum (°F): 65.5	
37. Avg. operating pressure range of tank (psig): 0.425	37A. Minimum (psig): 0.2191	37B. Maximum (psig): 0.9075	
38A. Minimum liquid surface temperature (°F): 52.2		38B. Corresponding vapor pressure (psia): 0.2191	
39A. Avg. liquid surface temperature (°F): 56.3		39B. Corresponding vapor pressure (psia): 0.4525	
40A. Maximum liquid surface temperature (°F): 66.7		40B. Corresponding vapor pressure (psia): 0.9075	
41. Provide the following for each liquid or gas to be stored in the tank. Add additional pages if necessary.			
41A. Material name and composition:	Produced Liquid		
41B. CAS number:	-		
41C. Liquid density (lb/gal):	8.33		
41D. Liquid molecular weight (lb/lb-mole):	18.02		
41E. Vapor molecular weight (lb/lb-mole):	18.02		
41F. Maximum true vapor pressure (psia):	1.0		
41G. Maximum Reid vapor pressure (psia):	0.46		
41H. Months Storage per year. From: To:	12		
42. Final maximum gauge pressure and temperature prior to transfer into tank used as inputs into flashing emission calculations.	O/Ambient		

ATTACHMENT L – STORAGE VESSEL DATA SHEET

Complete this data sheet if you are the owner or operator of a storage vessel that contains condensate and/or produced water. This form must be completed for *each* new or modified bulk liquid storage vessel(s) that contains condensate and/or produced water. (If you have more than one (1) identical tank (i.e. 4-400 bbl condensate tanks), then you can list all on one (1) data sheet). **Include gas sample analysis, flashing emissions, working and breathing losses, USEPA Tanks, simulation software (ProMax, E&P Tanks, HYSYS, etc.), and any other supporting documents where applicable.**

The following information is REQUIRED:

- Composition of the representative sample used for the simulation
- For each stream that contributes to flashing emissions:
 - Temperature and pressure (inlet and outlet from separator(s))
 - Simulation-predicted composition
- Molecular weight
- Flow rate
- Resulting flash emission factor or flashing emissions from simulation
- Working/breathing loss emissions from tanks and/or loading emissions if simulation is used to quantify those emissions

Additional information may be requested if necessary.

GENERAL INFORMATION (REQUIRED)

1. Bulk Storage Area Name Tonys Bridge	2. Tank Name Tank -4
3. Emission Unit ID number: TNK-4	4. Emission Point ID number 8E
5. Date Installed , Modified or Relocated (<i>for existing tanks</i>) (Expected March 2017) Was the tank manufactured after August 23, 2011 and on or before September 18, 2015? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Was the tank manufactured after September 18, 2015? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	6. Type of change: <input checked="" type="checkbox"/> New construction <input type="checkbox"/> New stored material <input type="checkbox"/> Other <input type="checkbox"/> Relocation
7A. Description of Tank Modification (<i>if applicable</i>)	
7B. Will more than one material be stored in this tank? <i>If so, a separate form must be completed for each material.</i> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
7C. Was USEPA Tanks simulation software utilized? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
<i>If Yes, please provide the appropriate documentation and items 8-42 below are not required.</i>	

TANK INFORMATION

8. Design Capacity (<i>specify barrels or gallons</i>). Use the internal cross-sectional area multiplied by internal height. 400 BBL	
9A. Tank Internal Diameter (ft.) 12	9B. Tank Internal Height (ft.) 20
10A. Maximum Liquid Height (ft.) 17	10B. Average Liquid Height (ft.) 10

<input checked="" type="checkbox"/> Riveted <input type="checkbox"/> Gunitite lined <input type="checkbox"/> Epoxy-coated rivets <input type="checkbox"/> Other (describe)			
21A. Shell Color: Tan		21B. Roof Color: Tan	
21C. Year Last Painted:2017			
22. Shell Condition (if metal and unlined): <input checked="" type="checkbox"/> No Rust <input type="checkbox"/> Light Rust <input type="checkbox"/> Dense Rust <input type="checkbox"/> Not applicable			
22A. Is the tank heated? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		22B. If yes, operating temperature:	
22C. If yes, how is heat provided to tank?			
23. Operating Pressure Range (psig):Ambient Must be listed for tanks using VRUs with closed vent system.			
24. Is the tank a Vertical Fixed Roof Tank ?		24A. If yes, for dome roof provide radius (ft):	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		6	
24B. If yes, for cone roof, provide slop (ft/ft):			
25. Complete item 25 for Floating Roof Tanks <input type="checkbox"/> Does not apply <input checked="" type="checkbox"/>			
25A. Year Internal Floaters Installed:			
25B. Primary Seal Type (<i>check one</i>): <input type="checkbox"/> Metallic (mechanical) shoe seal <input type="checkbox"/> Liquid mounted resilient seal <input type="checkbox"/> Vapor mounted resilient seal <input type="checkbox"/> Other (describe):			
25C. Is the Floating Roof equipped with a secondary seal? <input type="checkbox"/> Yes <input type="checkbox"/> No			
25D. If yes, how is the secondary seal mounted? (<i>check one</i>) <input type="checkbox"/> Shoe <input type="checkbox"/> Rim <input type="checkbox"/> Other (describe):			
25E. Is the floating roof equipped with a weather shield? <input type="checkbox"/> Yes <input type="checkbox"/> No			
25F. Describe deck fittings:			
26. Complete the following section for Internal Floating Roof Tanks <input checked="" type="checkbox"/> Does not apply			
26A. Deck Type: <input type="checkbox"/> Bolted <input type="checkbox"/> Welded		26B. For bolted decks, provide deck construction:	
26C. Deck seam. Continuous sheet construction: <input type="checkbox"/> 5 ft. wide <input type="checkbox"/> 6 ft. wide <input type="checkbox"/> 7 ft. wide <input type="checkbox"/> 5 x 7.5 ft. wide <input type="checkbox"/> 5 x 12 ft. wide <input type="checkbox"/> other (describe)			
26D. Deck seam length (ft.):		26E. Area of deck (ft ²):	
		26F. For column supported tanks, # of columns:	
		26G. For column supported tanks, diameter of column:	
27. Closed Vent System with VRU? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
28. Closed Vent System with Enclosed Combustor? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
SITE INFORMATION			
29. Provide the city and state on which the data in this section are based: Charleston, WV			
30. Daily Avg. Ambient Temperature (°F): 54.75		31. Annual Avg. Maximum Temperature (°F):65.5	
32. Annual Avg. Minimum Temperature (°F): 44		33. Avg. Wind Speed (mph): 6.3	
34. Annual Avg. Solar Insulation Factor (BTU/ft ² -day):1123		35. Atmospheric Pressure (psia):14.617	
LIQUID INFORMATION			
36. Avg. daily temperature range of bulk liquid (°F): 13.3		36A. Minimum (°F): 52.2	
		36B. Maximum (°F): 65.5	
37. Avg. operating pressure range of tank (psig): 0.425		37A. Minimum (psig):0.2191	
		37B. Maximum (psig): 0.9075	
38A. Minimum liquid surface temperature (°F):52.2		38B. Corresponding vapor pressure (psia):0.2191	
39A. Avg. liquid surface temperature (°F): 56.3		39B. Corresponding vapor pressure (psia):0.4525	
40A. Maximum liquid surface temperature (°F):66.7		40B. Corresponding vapor pressure (psia):0.9075	
41. Provide the following for each liquid or gas to be stored in the tank. Add additional pages if necessary.			
41A. Material name and composition:		Produced Liquid	
41B. CAS number:		-	
41C. Liquid density (lb/gal):		8.33	
41D. Liquid molecular weight (lb/lb-mole):		18.02	
41E. Vapor molecular weight (lb/lb-mole):		18.02	
41F. Maximum true vapor pressure (psia):		1.0	
41G. Maximum Reid vapor pressure (psia):		0.46	
41H. Months Storage per year. From: To:		12	
42. Final maximum gauge pressure and temperature prior to transfer into tank used as inputs into flashing emission calculations.		O/Ambient	

ATTACHMENT O – TANKER TRUCK/RAIL CAR LOADING DATA SHEET

Complete this data sheet for each new or modified bulk liquid transfer area or loading rack at the facility. This is to be used for bulk liquid transfer operations to tanker trucks/rail cars. Use extra pages if necessary.

Truck/Rail Car Loadout Collection Efficiencies

The following applicable capture efficiencies of a truck/rail car loadout are allowed:

- For tanker trucks/rail cars passing the MACT level annual leak test – 99.2%
- For tanker trucks/rail cars passing the NSPS level annual leak test – 98.7%
- For tanker trucks/rail cars not passing one of the annual leak tests listed above – 70%

Compliance with this requirement shall be demonstrated by keeping records of the applicable MACT or NSPS Annual Leak Test certification for *every* truck and railcar loaded/unloaded. This requirement can be satisfied if the trucking/rail car company provided certification that its entire fleet was compliant. This certification must be submitted in writing to the Director of the DAQ. These additional requirements must be noted in the Registration Application.

Emission Unit ID#: LO-1	Emission Point ID#: NA	Year Installed/Modified: 2017		
Emission Unit Description: TNK-1, TNK-2, TNK-3, TNK-4				
Loading Area Data				
Number of Pumps: NA	Number of Liquids Loaded:	Max number of trucks/rail cars loading at one (1) time: 1		
Are tanker trucks/rail cars pressure tested for leaks at this or any other location? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required				
If Yes, Please describe:				
Provide description of closed vent system and any bypasses. NA				
Are any of the following truck/rail car loadout systems utilized?				
<input type="checkbox"/> Closed System to tanker truck/rail car passing a MACT level annual leak test?				
<input type="checkbox"/> Closed System to tanker truck/rail car passing a NSPS level annual leak test?				
<input type="checkbox"/> Closed System to tanker truck/rail car not passing an annual leak test and has vapor return?				
Projected Maximum Operating Schedule (for rack or transfer point as a whole)				
Time	Jan – Mar	Apr - Jun	Jul – Sept	Oct - Dec
Hours/day	2	2	2	2
Days/week	1	1	1	1
Bulk Liquid Data (use extra pages as necessary)				
Liquid Name	Production Liquid			
Max. Daily Throughput (1000 gal/day)	21.4			
Max. Annual Throughput (1000 gal/yr)	151.2			
Loading Method ¹	BF			
Max. Fill Rate (gal/min)	60			
Average Fill Time (min/loading)	30			
Max. Bulk Liquid Temperature (°F)	80			
True Vapor Pressure ²	10.2			
Cargo Vessel Condition ³	C			
Control Equipment or Method ⁴	NA			
Max. Collection Efficiency (%)	NA			

Max. Control Efficiency (%)		NA		
Max.VOC Emission Rate	Loading (lb/hr)	<0.5929		
	Annual (ton/yr)	<0.0617		
Max.HAP Emission Rate	Loading (lb/hr)	De minimis		
	Annual (ton/yr)	De minimis		
Estimation Method ⁵		MB		

- 1 BF Bottom Fill SP Splash Fill SUB Submerged Fill
- 2 At maximum bulk liquid temperature
- 3 B Ballasted Vessel C Cleaned U Uncleaned (dedicated service)
O Other (describe)
- 4 List as many as apply (complete and submit appropriate Air Pollution Control Device Sheets)
CA Carbon Adsorption VB Dedicated Vapor Balance (closed system)
ECD Enclosed Combustion Device F Flare
TO Thermal Oxidization or Incineration
- 5 EPA EPA Emission Factor in AP-42 MB Material Balance
TM Test Measurement based upon test data submittal O Other (describe)

**ATTACHMENT Q – PNEUMATIC CONTROLLERS
DATA SHEET**

Are there any continuous bleed natural gas driven pneumatic controllers at this facility that commenced construction, modification or reconstruction after August 23, 2011, and on or before September 18, 2015?

Yes No

Please list approximate number.

Are there any continuous bleed natural gas driven pneumatic controllers at this facility that commenced construction, modification or reconstruction after September 18, 2015?

Yes No

Please list approximate number.

Are there any continuous bleed natural gas driven pneumatic controllers at this facility with a bleed rate greater than 6 standard cubic feet per hour that are required based on functional needs, including but not limited to response time, safety and positive actuation that commenced construction, modification or reconstruction after August 23, 2011, and on or before September 18, 2015?

Yes No

Please list approximate number.

Are there any continuous bleed natural gas driven pneumatic controllers at this facility with a bleed rate greater than 6 standard cubic feet per hour that are required based on functional needs, including but not limited to response time, safety and positive actuation that commenced construction, modification or reconstruction after September 18, 2015?

Yes No

Please list approximate number.

**ATTACHMENT R – PNEUMATIC PUMP
DATA SHEET**

Are there any natural gas-driven diaphragm pumps located at a well site that commenced construction, modification or reconstruction after September 18, 2015?

Yes No

Please list.

Source ID #	Date	Pump Make/Model	Pump Size

ATTACHMENT T–EMISSIONS CALCULATIONS

Provide detailed potential to emit (PTE) emission calculations for criteria and hazardous air pollutants (HAPs) for each emission point identified in the application. For hazardous air pollutants and volatile organic compounds (VOCs), the speciated emission calculations must be included.

Use the following guidelines to ensure complete emission calculations:

- All emission sources and fugitive emissions are included in the emission calculations, as well as all methods used to calculate the emissions.
- Proper emission point identification numbers and APCD and ERD identification numbers are used consistently in the emission calculations that are used throughout the application.
- A printout of the emission summary sheets is attached to the registration application.
- Printouts of any modeling must be included with the emission calculations. The modeling printout must show all inputs/outputs or assumptions that the modeled emissions are based upon.
- If emissions are provided from the manufacturer, the manufacturer's documentation and/or certified emissions must also be included.
- The emission calculations results must match the emissions provided on the emissions summary sheet.
- If calculations are based on a compositional analysis of the gas, attach the laboratory analysis. Include the following information: the location that the sample was taken (and whether the sample was taken from the actual site or a representative site); the date the sample was taken; and, if the sample is considered representative, the reasons that it is considered representative (same gas field, same formation and depth, distance from actual site, etc.).
- Provide any additional clarification as necessary. Additional clarification or information is especially helpful when reviewing modeling calculations to assist the engineer in understanding the basis of assumptions and/or inputs.

Please follow specific guidance provided on the emissions summary sheet when providing the calculations.

Fugitive Emission Calculations

Mountaineer Keystone - Tonys Bridge Fugitive Emission Calculations (See Attachment J)

Density		
Pollutant	Density (kg/m ³)	Density (lb/scf)
VOC	3.35	0.2087
CH4	0.656	0.0409

Emission Factors ¹		
Component Type	Count	(scf /hr/ component)
Pumps	0	13.30
Valves	249	0.027
Safety Relief Valves	21	0.04
Open Ended Lines	5	0.061
Sampling Connections	4	0.003
Connections	1226	0.003
Compressors	0	7.00
Flanges	241	0.003
Other ⁵	62	0.003

Emissions			
Component Type	VOC Emissions (tons/yr) ^{2,3}	Methane (tons/yr) ⁴	CO2 eq (tons/yr)
Pumps	0	0	0
Valves	0.4302	1.1192	27.98
Safety Relief Valves	0.0537	0.1398	3.50
Open Ended Lines	0.0195	0.0508	1.27
Sampling Connections	0.0008	0.0020	0.0499
Connections	0.2353	0.6123	15.31
Compressors	0	0	0
Flanges	0.0463	0.1204	3.01
Other	0.0119	0.0310	0.77
Total	0.80	2.08	51.88

Emissions are calculated as follows:

Emissions = Emission Factor (scf/hr/component) * Component Count * Density (lb/scf) * 8,760 (hrs/yr) * Constituent

CO2e Emissions = Methane Emissions (tons/yr) * 25 (GWP)

¹ Emission Factors for Pumps, Valves, Safety Relief Valves, and Open Ended Lines taken from 40 CFR 98 Table W-1A. Flanges emission factor assumed to be equal to Connections emission factor

Notes:

² VOC calculated using gas analysis average of VOCs

³ VOC weight % approximated to be 7% of fugitive emissions based on gas analysis

⁴ Methane weight % assumed to be about 93% of fugitive emissions

⁵ Other components include meters, regulators and Diaphragms

Tank Emission Calculations

**Mountaineer Keystone - Tony's Bridge Wellpad
TK-1, TK-2, TK-3, TK-4 Combined Emission Calculation
(See Attachment L)**

TK-1, TK-2, TK-3, TK-4 - 400 bbl Capacity

Annual Throughput ²	bbl/yr	gal/yr	L/yr
	416,000	17,472,000	66,131,520

Compound	Concentration ¹ (ug/L)	Emissions (g/yr)	Emissions (lbs/yr)	Emissions (lbs/hr)	Emissions (tons/yr)
Methane	24000	1,587,156	3,499	6.73	1.75
Ethane	2100	138,876	306.17	0.5888	0.1531
Propane	5	330.66	0.7290	0.0014	0.0004
iso-Butane	1.6	105.81	0.2333	0.0004	0.0001
n-Butane	7.9	522.44	1.15	0.0022	0.0006

Methane Total ³	-	3,174,313	6,998	13.46	3.50
CO2e Total ³	-	158,715,648	349,908	672.90	174.95
VOC Total ³	-	279,670	616.57	1.19	0.3083

Emissions are calculated as follows:

Emissions (lb/yr) = Throughput (L/yr) * Concentration (ug/L) * (lb/ 4.54E8 ug)

Emissions (lb/hr) = Emissions (lb/yr) * (yr/ 1040 unloads) * (Unload /1 hr)

CO2e Emissions = Methane Emissions (tons/yr) * 25 (GWP)

¹ Concentrations of Produced Liquid is based on analytical results dated November 11, 2016

² Each tank is fully unloaded 5 times per week (52 weeks/yr * 400 bbl/tank * 4 tanks * 5 unloads = 416,000 bbl/yr)

Assumptions:

- All VOC and GHG present in the Produced Liquid is emitted

- Produced liquid is mostly water with minimal amounts of VOC and GHG

³ VOC and GHG totals from the above calculation is doubled for each tank in the facility total to overestimate any other potential VOCs not detected in the analytical results

- Each tank unloading takes one half hour and each tank is unloaded 5 times per week



Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

November 11, 2016

Michael Michalski
Ryan Environmental
5793 W Memorial Veteran's Hwy
Bridgeport, WV 26330

RE: **161028_MKM_COMET&GOLFF**

Pace Workorder: 20814

Dear Michael Michalski:

Enclosed are the analytical results for sample(s) received by the laboratory on Monday, October 31, 2016. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 11/11/2016
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

Total Number of Pages 18

Report ID: 20814 - 861768

Page 1 of 15



CERTIFICATE OF ANALYSIS

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Pace Analytical Energy Services LLC
 220 William Pitt Way
 Pittsburgh, PA 15238
 Phone: (412) 826-5245
 Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20814 161028_MKM_COMET&GOLFF

Lab ID: **208140001** Date Received: 10/31/2016 08:30 Matrix: Water
 Sample ID: **161028_MKM_COMET_TANKS386&387** Date Collected: 10/28/2016 10:45

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
------------	---------	-------	-----	-----	----	----------	----	------------

RISK - PAES

Analysis Desc: EPA RSK175		Analytical Method: EPA RSK175						
Methane	24000	ug/l	50	1.9	100	11/4/2016 11:07	AK	d,B
Ethane	2100	ug/l	20	0.50	100	11/4/2016 11:07	AK	d
Ethene	0.20	U ug/l	0.20	0.0070	1	11/3/2016 10:43	AK	
Propane	58	ug/l	0.20	0.0080	1	11/3/2016 10:43	AK	
iso-Butane	1.6	ug/l	0.40	0.018	1	11/3/2016 10:43	AK	
n-Butane	7.9	ug/l	0.40	0.017	1	11/3/2016 10:43	AK	

Subcontracted Work - SCPG

Analysis Desc: SW-846 8260B		Analytical Method: SW-846 8260B						
Benzene	620	U ug/kg	620	170	1	11/9/2016 19:13	PAS	s
Toluene	620	U ug/kg	620	190	1	11/9/2016 19:13	PAS	s
Ethylbenzene	620	U ug/kg	620	130	1	11/9/2016 19:13	PAS	s
m,p-Xylene	1200	U ug/kg	1200	230	1	11/9/2016 19:13	PAS	s
o-Xylene	620	U ug/kg	620	120	1	11/9/2016 19:13	PAS	s



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Heater Emission Calculations

**Mountaineer Keystone - Tony's Bridge Wellpad
Heater Emission Summary (HTR-1, HTR-2, HTR-3, HTR-4 Combined)
Criteria Pollutants (See Attachment M)**

Fuel Usage		
Fuel	Units	Total
Natural Gas	ft ³	34,019,417

Emission Factors ¹	
	Heaters
Pollutant	Natural Gas (lbs/ 10 ⁶ ft ³)
Particulates	7.60
Sulfur Dioxide	0.6000
Oxides of Nitrogen	100.00
PM-10	7.60
VOC	5.50
Carbon Monoxide	84.00
Lead	0.0005
CO2 Equiv	120,000

Emissions			
	Heaters ²		
Pollutant	Natural Gas (lbs/yr)	Natural Gas (lbs/hr)	Natural Gas (tons/yr)
Particulates	258.55	0.0295	0.1293
Sulfur Dioxide	20.41	0.0023	0.0102
Oxides of Nitrogen	3,402	0.3883	1.70
PM-10	258.55	0.0295	0.1293
VOC	187.11	0.0214	0.0936
Carbon Monoxide	2,858	0.3262	1.43
Lead	0.0170	1.94E-06	8.50E-06
CO2 Equiv	4,082,330	466.02	2,041

Emissions are calculated as follows:

$$\text{Natural Gas Usage (ft}^3\text{)} = (1 \text{ MMBtu/hr} * 4 * 8760 \text{ hrs/yr} * 10^6 \text{ Btu/MMBtu}) / (1030 \text{ Btu/ft}^3)$$

$$\text{Emissions (lbs/yr)} = \text{Volume of Gas (ft}^3\text{)} * \text{Emission Factor (lbs/10}^6 \text{ ft}^3\text{)}$$

¹ Natural Gas Emission Factors were taken from AP-42 Tables 1.4-1 and 1.4-2

Notes:

² The wellpad operates 4 GPUs, which each have a heater with a rating of 1 MMBtu/hr. The emissions shown in the table are the sum of the four Heaters
- Heating value of Natural Gas assumed to be 1,030 Btu/ft³

Mountaineer Keystone - Tony's Bridge Wellpad

Heater Emission Summary (HTR-1, HTR-2, HTR-3, HTR-4 Combined)

HAPS (See Attachment M)

Emissions are calculated as follows:

$$\text{Emissions} = \text{Volume of Gas (ft}^3\text{)} * \text{Emission Factor (lbs/10}^6\text{ ft}^3\text{)}$$

¹ Emission Factors from AP-42 Tables 1.4-3 and 1.4-4

Natural Gas Heaters HAP
ft³
34,019,417

HAP Emissions			Natural Gas		
HAP	CAS No.	Natural Gas ¹ (lb/10 ⁶ ft ³)	(lbs/yr)	Heaters (lbs/hr)	(tons/yr)
2-Methylnaphthalene	91-57-6	2.40E-05	0.0008	9.32E-08	4.08E-07
3-Methylchloranthrene	56-49-5	1.80E-06	6.12E-05	6.99E-09	3.06E-08
7,12-Dimethylbenz(a)anthracene	-	1.60E-05	0.0005	6.21E-08	2.72E-07
Acenaphthene	83-32-9	1.80E-06	6.12E-05	6.99E-09	3.06E-08
Acenaphthylene	203-96-8	1.80E-06	6.12E-05	6.99E-09	3.06E-08
Anthracene	120-12-7	2.40E-06	8.16E-05	9.32E-09	4.08E-08
Benzo(a)anthracene	56-55-3	1.80E-06	6.12E-05	6.99E-09	3.06E-08
Benzene	71-43-2	2.10E-03	0.0714	8.16E-06	3.57E-05
Benzo(a)pyrene	50-32-8	1.20E-06	4.08E-05	4.66E-09	2.04E-08
Benzo(b)fluoranthene	205-99-2	1.80E-06	6.12E-05	6.99E-09	3.06E-08
Benzo(g,h,i)perylene	191-24-2	1.20E-06	4.08E-05	4.66E-09	2.04E-08
Benzo(k)fluoranthene	207-08-9	1.80E-06	6.12E-05	6.99E-09	3.06E-08
Chrysene	218-01-9	1.80E-06	6.12E-05	6.99E-09	3.06E-08
Dibenzo(a,h)anthracene	53-70-3	1.20E-06	4.08E-05	4.66E-09	2.04E-08
Dichlorobenzene	25321-22-6	1.20E-03	0.0408	4.66E-06	2.04E-05
Fluoranthene	206-44-0	3.00E-06	0.0001	1.17E-08	5.10E-08
Fluorene	86-73-7	2.80E-06	9.53E-05	1.09E-08	4.76E-08
Formaldehyde	50-00-0	7.50E-02	2.55	0.0003	0.0013
Hexane	110-54-3	1.80E+00	61.23	0.0070	0.0306
Indeno(1,2,3-cd)pyrene	193-39-5	1.80E-06	6.12E-05	6.99E-09	3.06E-08
Naphthalene	91-20-3	6.10E-04	0.0208	2.37E-06	1.04E-05
Phenanthrene	85-01-8	1.70E-05	0.0006	6.60E-08	2.89E-07
Pyrene	129-00-0	5.00E-06	0.0002	1.94E-08	8.50E-08
Toluene	108-88-3	3.40E-03	0.1157	1.32E-05	5.78E-05
Arsenic	7440-38-2	2.00E-04	0.0068	7.77E-07	3.40E-06
Beryllium	7440-41-7	1.20E-05	0.0004	4.66E-08	2.04E-07
Cadmium	7440-43-9	1.10E-03	0.0374	4.27E-06	1.87E-05
Chromium	7440-47-3	1.40E-03	0.0476	5.44E-06	2.38E-05
Cobalt	7440-48-4	8.40E-05	0.0029	3.26E-07	1.43E-06
Manganese	7439-96-5	3.80E-04	0.0129	1.48E-06	6.46E-06
Mercury	7439-97-6	2.60E-04	0.0088	1.01E-06	4.42E-06
Nickel	7440-02-0	2.10E-03	0.0714	8.16E-06	3.57E-05
Selenium	7782-49-2	2.40E-05	0.0008	9.32E-08	4.08E-07
Total:			64.23	0.0073	0.0321

**Mountaineer Keystone - Tony's Bridge Wellpad
Heater Emission Summary (TE-1)
Criteria Pollutants (See Attachment M)**

Fuel Usage		
Fuel	Units	Total
Natural Gas	ft ³	255,500

Emission Factors ¹	
	Thermoelectric Generator ²
Pollutant	Natural Gas (lbs/ 10 ⁶ ft ³)
Particulates	7.60
Sulfur Dioxide	0.6000
Oxides of Nitrogen	100.00
PM-10	7.60
VOC	5.50
Carbon Monoxide	84.00
Lead	0.0005
CO2 Equiv	120,000

Emissions			
	Thermoelectric Generator ²		
Pollutant	Natural Gas (lbs/yr)	Natural Gas (lbs/hr)	Natural Gas (tons/yr)
Particulates	1.94	0.0002	0.0010
Sulfur Dioxide	0.1533	1.75E-05	7.67E-05
Oxides of Nitrogen	25.55	0.0029	0.0128
PM-10	1.94	0.0002	0.0010
VOC	1.41	0.0002	0.0007
Carbon Monoxide	21.46	0.0025	0.0107
Lead	0.0001	1.46E-08	6.39E-08
CO2 Equiv	30,660	3.50	15.33

Emissions are calculated as follows:

Natural Gas Usage (ft³) = 700 (scfd) * 365 (days/yr)

Emissions (lbs/yr) = Volume of Gas (ft³) * Emission Factor (lbs/10⁶ ft³)

¹ Natural Gas Emission Factors were taken from AP-42 Tables 1.4-1 and 1.4-2

Notes:

² The wellpad operates 1 thermoelectric generator, which has a maximum natural gas throughput of 700 scfd. It is assumed boiler emission factors accurately estimate emissions

Mountaineer Keystone - Tony's Bridge Wellpad Heater Emission Summary (TE-1) HAPS (See Attachment M)

Emissions are calculated as follows:

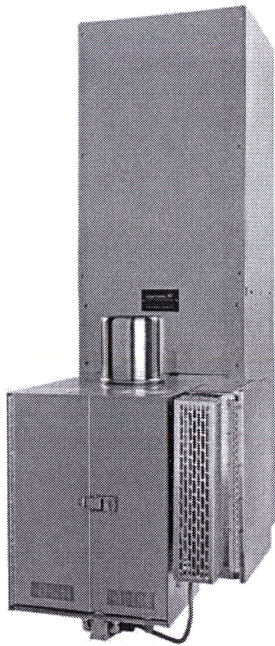
$$\text{Emissions} = \text{Volume of Gas (ft}^3\text{)} * \text{Emission Factor (lbs/10}^6\text{ ft}^3\text{)}$$

¹ Emission Factors from AP-42 Tables 1.4-3 and 1.4-4

Natural Gas Heaters HAP
ft³
255,500

HAP Emissions			Natural Gas		
			(lbs/yr)	Heaters (lbs/hr)	(tons/yr)
HAP	CAS No.	Natural Gas ¹ (lb/10 ⁶ ft ³)			
2-Methylnaphthalene	91-57-6	2.40E-05	6.13E-06	7.00E-10	3.07E-09
3-Methylchloranthrene	56-49-5	1.80E-06	4.60E-07	5.25E-11	2.30E-10
7,12-Dimethylbenz(a)anthracene	-	1.60E-05	4.09E-06	4.67E-10	2.04E-09
Acenaphthene	83-32-9	1.80E-06	4.60E-07	5.25E-11	2.30E-10
Acenaphthylene	203-96-8	1.80E-06	4.60E-07	5.25E-11	2.30E-10
Anthracene	120-12-7	2.40E-06	6.13E-07	7.00E-11	3.07E-10
Benzo(a)anthracene	56-55-3	1.80E-06	4.60E-07	5.25E-11	2.30E-10
Benzene	71-43-2	2.10E-03	0.0005	6.13E-08	2.68E-07
Benzo(a)pyrene	50-32-8	1.20E-06	3.07E-07	3.50E-11	1.53E-10
Benzo(b)fluoranthene	205-99-2	1.80E-06	4.60E-07	5.25E-11	2.30E-10
Benzo(g,h,i)perylene	191-24-2	1.20E-06	3.07E-07	3.50E-11	1.53E-10
Benzo(k)fluoranthene	207-08-9	1.80E-06	4.60E-07	5.25E-11	2.30E-10
Chrysene	218-01-9	1.80E-06	4.60E-07	5.25E-11	2.30E-10
Dibenzo(a,h)anthracene	53-70-3	1.20E-06	3.07E-07	3.50E-11	1.53E-10
Dichlorobenzene	25321-22-6	1.20E-03	0.0003	3.50E-08	1.53E-07
Fluoranthene	206-44-0	3.00E-06	7.67E-07	8.75E-11	3.83E-10
Fluorene	86-73-7	2.80E-06	7.15E-07	8.17E-11	3.58E-10
Formaldehyde	50-00-0	7.50E-02	0.0192	2.19E-06	9.58E-06
Hexane	110-54-3	1.80E+00	0.4599	5.25E-05	0.0002
Indeno(1,2,3-cd)pyrene	193-39-5	1.80E-06	4.60E-07	5.25E-11	2.30E-10
Naphthalene	91-20-3	6.10E-04	0.0002	1.78E-08	7.79E-08
Phenanathrene	85-01-8	1.70E-05	4.34E-06	4.96E-10	2.17E-09
Pyrene	129-00-0	5.00E-06	1.28E-06	1.46E-10	6.39E-10
Toluene	108-88-3	3.40E-03	0.0009	9.92E-08	4.34E-07
Arsenic	7440-38-2	2.00E-04	5.11E-05	5.83E-09	2.56E-08
Beryllium	7440-41-7	1.20E-05	3.07E-06	3.50E-10	1.53E-09
Cadmium	7440-43-9	1.10E-03	0.0003	3.21E-08	1.41E-07
Chromium	7440-47-3	1.40E-03	0.0004	4.08E-08	1.79E-07
Cobalt	7440-48-4	8.40E-05	2.15E-05	2.45E-09	1.07E-08
Manganese	7439-96-5	3.80E-04	9.71E-05	1.11E-08	4.85E-08
Mercury	7439-97-6	2.60E-04	6.64E-05	7.58E-09	3.32E-08
Nickel	7440-02-0	2.10E-03	0.0005	6.13E-08	2.68E-07
Selenium	7782-49-2	2.40E-05	6.13E-06	7.00E-10	3.07E-09
Total:			0.4824	5.51E-05	0.0002

Model 5220 Thermoelectric Generators



Standard Features

- Automatic Spark Ignition (SI)
- Automatic Fuel Shut-off (SO)
- Fuel Filter
- Low Voltage Alarm Contacts (VSR)
- Volt & Amp Meter

Optional Features

- Cathodic Protection Interface
- Pole Mount or bench stand
- Corrosive Environmental Fuel System
- Marine Service
- Certification to CSA Std. T.I.L. R-10

Note: Specifications shown are for standard configurations. Gentherm Global Power Technologies' * (GPT) Integrated Systems Engineering Department is available to design custom voltages, fuel supply systems and non-standard operating temperatures.

Specification data stated in this document is subject to change without notice. To verify these specifications are current, contact your Gentherm Global Power Technologies (GPT) sales representative.

* Formerly Global Thermoelectric



ISO 9001 Registered

Gentherm Global Power Technologies' * (GPT) 5220 Thermoelectric Generator contains no moving parts. It is a reliable, low maintenance source of DC electrical power for any application where regular utilities are unavailable or unreliable.

Power Specifications

Power Rating at 20°C
195 Watts at 12 Volts
178 Watts at 24 Volts

Electrical

Adjustment: 12 V 12 -18 Volts
24 V 24 - 30 Volts

Reverse current protection included.

Output: Terminal block which accepts up to 8 AWG wire. Opening for 3/4" conduit in the base of the cabinet.

Fuel

Natural Gas: 19.7 m³/day (700 Sft³/day)
1000 BTU/Sft³ (37.7 MJ/SM³) gas
max 115 mg/Sm³ (~170 ppm) H₂S
max 120 mg/Sm³ H₂O
max 1% free O₂

Propane: 28.0 l/day (7.4 US gal/day)
Max. Supply Pressure: 345 kPa (50 psi)
Min. Supply Pressure: 165 kPa (24 psi)
Fuel Connection: 1/4" MNPT

Environmental

Ambient Operation Temperature: Max. +45°C (115°F) Min. -40°C (-40°F).
Operating Conditions: Unsheltered operation
Please contact GPT for operating conditions below -40°C or above +45°C.

Materials of Construction

Cabinet: 304 SS
Cooling Type: Natural Convection
Fuel System: Brass, Aluminum & SS

Power where you need it.®

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GLOBAL POWER TECHNOLOGIES

Tanker Truck Loading Calculations

Mountaineer Keystone – Tonys Bridge Tanker Truck Loading Emissions, LO-1 (See Attachment O)

Assumptions:

- All VOC, Methane, and GHG that enter the tank are emitted during loading
- Lbs/tons of VOC, Methane, and GHG emissions are used from the tank emission calculations

$$0.5929 \frac{\text{lbs VOC}}{\text{hr}}$$

$$0.0617 \frac{\text{tons VOC}}{\text{yr}}$$

$$6.73 \frac{\text{lbs Methane}}{\text{hr}}$$

$$0.6998 \frac{\text{tons Methane}}{\text{yr}}$$

$$336.45 \frac{\text{lbs GHG}}{\text{hr}}$$

$$34.99 \frac{\text{tons GHG}}{\text{yr}}$$

ATTACHMENT U – FACILITY-WIDE CONTROLLED EMISSIONS SUMMARY SHEET

List all sources of emissions in this table. Use extra pages if necessary.

Emission Point ID#	NO _x		CO		VOC		SO ₂		PM ₁₀		PM _{2.5}		CH ₄		GHG (CO ₂ e)	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
1E (HTR-1)	0.0971	0.0323	0.0816	0.3575	0.0054	0.0234	0.0006	0.0026	0.0073	0.0323	0.0073	0.0323	0	0	116.51	510.25
2E (HTR-2)	0.0971	0.0323	0.0816	0.3575	0.0054	0.0234	0.0006	0.0026	0.0073	0.0323	0.0073	0.0323	0	0	116.51	510.25
3E (HTR-3)	0.0971	0.0323	0.0816	0.3575	0.0054	0.0234	0.0006	0.0026	0.0073	0.0323	0.0073	0.0323	0	0	116.51	510.25
4E (HTR-4)	0.0971	0.0323	0.0816	0.3575	0.0054	0.0234	0.0006	0.0026	0.0073	0.0323	0.0073	0.0323	0	0	116.51	510.25
5E (TNK-1)	NA	NA	NA	NA	0.2975	0.0771	NA	NA	NA	NA	NA	NA	3.37	0.8750	168.23	43.74
6E (TNK-2)	NA	NA	NA	NA	0.2975	0.0771	NA	NA	NA	NA	NA	NA	3.37	0.8750	168.23	43.74
7E (TNK-3)	NA	NA	NA	NA	0.2975	0.0771	NA	NA	NA	NA	NA	NA	3.37	0.8750	168.23	43.74
8E (TNK-4)	NA	NA	NA	NA	0.2975	0.0771	NA	NA	NA	NA	NA	NA	3.37	0.8750	168.23	43.74
LO-1	NA	NA	NA	NA	<0.5929	<0.0617	NA	NA	NA	NA	NA	NA	<6.73	<0.6998	<336.45	<34.99
9E (TE-1)	0.0029	0.0128	0.0025	0.0107	0.0002	0.0007	1.75E-5	7.67E-5	0.0002	0.0010	0.0002	0.0010	0	0	3.50	15.33
TOTAL	0.3913	0.1420	0.3289	1.44	1.80	0.4644	0.0024	0.0105	0.0294	0.1302	0.0294	0.1302	20.21	4.20	1,479	2,266

Annual emissions shall be based on 8,760 hours per year of operation for all emission units except emergency generators. According to 45CSR14 Section 2.43.e, fugitive emissions are not included in the major source determination because it is not listed as one of the source categories in Table 1. Therefore, fugitive emissions shall not be included in the PTE above.

ATTACHMENT U – FACILITY-WIDE HAP CONTROLLED EMISSIONS SUMMARY SHEET

List all sources of emissions in this table. Use extra pages if necessary.

Emission Point ID#	Formaldehyde		Benzene		Toluene		Ethylbenzene		Xylenes		Hexane		Total HAPs	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
1E (HTR-1)	7.50E-05	0.00038	2.04E-06	8.93E-06	3.30E-06	1.45E-05	NA	NA	NA	NA	0.0017	0.0077	0.0018	0.008
2E (HTR-2)	7.50E-05	0.00038	2.04E-06	8.93E-06	3.30E-06	1.45E-05	NA	NA	NA	NA	0.0017	0.0077	0.0018	0.008
3E (HTR-3)	7.50E-05	0.00038	2.04E-06	8.93E-06	3.30E-06	1.45E-05	NA	NA	NA	NA	0.0017	0.0077	0.0018	0.008
4E (HTR-4)	7.50E-05	0.00038	2.04E-06	8.93E-06	3.30E-06	1.45E-05	NA	NA	NA	NA	0.0017	0.0077	0.0018	0.008
5E (TNK-1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6E (TNK-2)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7E (TNK-3)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8E (TNK-4)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LO-1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	De minimis	De minimis
9E (TE-1)	2.19E-6	9.58E-6	6.13E-8	2.68E-7	9.92E-8	4.34E-7	NA	NA	NA	NA	5.25E-5	0.0002	5.51E-5	0.0002
TOTAL	3.02E-4	1.53E-3	8.22E-6	3.60E-5	1.33E-5	5.84E-5	NA	NA	NA	NA	6.85E-3	0.0310	7.26E-3	0.0322

Annual emissions shall be based on 8,760 hours per year of operation for all emission units except emergency generators. According to 45CSR14 Section 2.43.e, fugitive emissions are not included in the major source determination because it is not listed as one of the source categories in Table 1. Therefore, fugitive emissions shall not be included in the PTE above.

ATTACHMENT V – CLASS I LEGAL ADVERTISEMENT

Publication of a proper Class I legal advertisement is a requirement of the G70-D registration process. In the event the applicant's legal advertisement fails to follow the requirements of 45CSR13, Section 8 or the requirements of Chapter 59, Article 3, of the West Virginia Code, the application will be considered incomplete and no further review of the application will occur until this is corrected.

The applicant, utilizing the format for the Class I legal advertisement example provided on the following page, shall have the legal advertisement appear a minimum of one (1) day in the newspaper most commonly read in the area where the facility exists or will be constructed. The notice must be published no earlier than five (5) working days of receipt by this office of your application. The original affidavit of publication must be received by this office no later than the last day of the public comment period.

The advertisement shall contain, at a minimum, the name of the applicant, the type and location of the source, the type and amount of air pollutants that will be discharged (excluding fugitive emissions), the nature of the permit being sought, the proposed start-up date for the source, and a contact telephone number for more information.

The location of the source should be as specific as possible starting with: 1.) the street address of the source; 2.) the nearest street or road; 3.) the nearest town or unincorporated area, 4.) the county, and 5.) latitude and longitude coordinates in decimal format.

Types and amounts of pollutants discharged **must include** all regulated pollutants (Nitrogen Oxides, Carbon Monoxide, Particulate Matter-2.5, Particulate Matter-10, Volatile Organic Compounds, Sulfur Dioxide, Carbon Dioxide Equivalents, Methane, Formaldehyde, Benzene, Toluene, Ethylbenzene, Xylenes, Hexane, Total Hazardous Air Pollutants and their potential to emit or the permit level being sought in units of tons per year.

In the event the 30th day is a Saturday, Sunday, or legal holiday, the comment period will be extended until 5:00 p.m. on the following regularly scheduled business day.

A list of qualified newspapers that are eligible to publish legal ads may be found:

<http://www.sos.wv.gov/elections/resource/Documents/Qualified%20Newspapers.pdf>

RECOMMENDED PUBLIC NOTICE TEMPLATE

AIR QUALITY PERMIT NOTICE Notice of Application

Notice is given that Mountaineer Keystone LLC has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a G70-D (General Permit Registration Application) for a natural gas production facility located on 4000 County Route 25, Mount Claire in Harrison County, West Virginia. The latitude and longitude coordinates are: 39.38585 and -80.35668

The applicant estimates the potential to discharge the following Regulated Air Pollutants will be:

- 0.1420 tons per year NO_x;
- 1.44 tons per year CO;
- 0.4644 tons per year VOCs;
- 0.0105 tons per year SO₂;
- 0.1302 tons per year PM-10; and
- 0.0322 tons per HAPs.

Startup of operation is planned to begin on or about March 1, 2017. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1250, during normal business hours.

Dated this 30th day of January, 2017.

By: Mountaineer Keystone LLC
Meghan M.B. Yingling
Environmental Compliance Manager
65 Professional Place, Suite 200
Bridgeport, WV 26330