July 21, 2017

Mr. William F. Durham
Director
WVDEP, Division of Air Quality
601 – 57th Street SE
Charleston, West Virginia 25304

Re: CONE Gathering LLC, 45CSR13 Permit Modification Application – Majorsville Station – Facility ID # 051-00143

Dear Mr. Durham,

CONE Gathering LLC (CONE) and SLR International Corporation (SLR) have prepared the attached 45CSR13 Permit Modification Application for the Majorsville Station located in Marshall County, West Virginia. This modification will reflect the addition of an electric 200 HP VRU (VRU-5), four 330 gallon methanol tanks, and four 500 gallon lube oil tanks. In addition, the existing 755 HP backup generator (EG-1) will be replaced with a new 1,490 HP backup generator (EG-2), and the condensate stabilizer heat input capacity will be updated from 0.75 MMBtu/hr to 1.43 MMBtu/hr. Lastly, we are requesting that gun barrel tank T06 be reevaluated for Kb applicability as it appears to be exempt.

The public notice was delivered to *The Moundsville Daily* for publication. The legal advertisement will be forwarded to your office as soon as SLR receives the original affidavit from the newspaper.

If any additional information is needed, please feel free to contact me by telephone at (304) 545-8563 or by e-mail at jhanshaw@slrconsulting.com

Sincerely,
SLR International Corporation

Jesse Hanshaw

Jesse Hanshaw, P.E.
Principal Engineer

CONE Gathering LLC

Majorsville Station

Dallas, West Virginia

45CSR13 Permit Modification Application

SLR Ref: 116.00894.00068

2017

Majorsville Station 45CSR13 Permit Modification Application

Prepared for:

CONE Gathering LLC
1000 Consol Energy Drive
Canonsburg, PA 15317

This document has been prepared by SLR International Corporation. The material and data in this Permit Modification application were prepared under the supervision and direction of the undersigned.

Chris Boggess
Associate Engineer

Jesse Hanshaw, P.E.
Principal Engineer

CONTENTS

ATTACHMENTS

Notes:

ATTACHMENT C - The changes are After-The-Fact
ATTACHMENT H - SDS sheets included in previous application
ATTACHMENT M - APCD sheets included in previous application
ATTACHMENT Q - No information contained within this application is claimed confidential
ATTACHMENT R - No delegation of authority
ATTACHMENT S - Not a Title V Permit Modification Revision

APPLICATION FOR PERMIT

45CSR13 Permit Modification Application

Majorsville Compressor Station
Dallas, West Virginia

CONE Gathering LLC
1000 Consol Energy Drive
Canonsburg, PA 15317

2017

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF AIR QUALITY

601 57th Street, SE
Charleston, WV 25304
(304) 926-0475
www.dep.wv.gov/daq

APPLICATION FOR NSR PERMIT AND TITLE V PERMIT REVISION (OPTIONAL)

PLEASE CHECK ALL THAT APPLY TO **NSR (45CSR13)** (IF KNOWN):

☐ **CONSTRUCTION** ☒ **MODIFICATION** ☐ **RELOCATION**
☐ **CLASS I ADMINISTRATIVE UPDATE** ☐ **TEMPORARY**
☐ **CLASS II ADMINISTRATIVE UPDATE** ☒ **AFTER-THE-FACT**

PLEASE CHECK TYPE OF **45CSR30 (TITLE V)** REVISION (IF ANY):

☐ **ADMINISTRATIVE AMENDMENT** ☐ **MINOR MODIFICATION**
☐ **SIGNIFICANT MODIFICATION**

IF ANY BOX ABOVE IS CHECKED, INCLUDE TITLE V REVISION INFORMATION AS **ATTACHMENT S** TO THIS APPLICATION

FOR TITLE V FACILITIES ONLY: Please refer to "Title V Revision Guidance" in order to determine your Title V Revision options (Appendix A, "Title V Permit Revision Flowchart") and ability to operate with the changes requested in this Permit Application.

Section I. General

1. Name of applicant *(as registered with the WV Secretary of State's Office):*
CONE Gathering LLC

2. Federal Employer ID No. ***(FEIN):***
47-1054194

3. Name of facility *(if different from above):*
Majorsville Station

4. The applicant is the:
☐ **OWNER** ☐ **OPERATOR** ☒ **BOTH**

5A. Applicant's mailing address:
1000 Consol Energy Drive
Canonsburg, PA 15317

5B. Facility's present physical address:
3700 Number Two Ridge Road
Dallas, WV 26036

6. **West Virginia Business Registration.** Is the applicant a resident of the State of West Virginia? ☐ **YES** ☒ **NO**

- If **YES,** provide a copy of the **Certificate of Incorporation/Organization/Limited Partnership** (one page) including any name change amendments or other Business Registration Certificate as **Attachment A.**
- If **NO,** provide a copy of the **Certificate of Authority/Authority of L.L.C./Registration** (one page) including any name change amendments or other Business Certificate as **Attachment A.**

7. If applicant is a subsidiary corporation, please provide the name of parent corporation:

8. Does the applicant own, lease, have an option to buy or otherwise have control of the *proposed site?* ☒ **YES** ☐ **NO**

- If **YES,** please explain: Owner

- If **NO,** you are not eligible for a permit for this source.

9. Type of plant or facility (stationary source) to be **constructed, modified, relocated, administratively updated** or **temporarily permitted** (e.g., coal preparation plant, primary crusher, etc.): Natural Gas Compression and Dehydration Facility

10. North American Industry Classification System **(NAICS)** code for the facility:
486210

11A. DAQ Plant ID No. (for existing facilities only):
051-00143

11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only):
R13-3081D

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

12A.

- For **Modifications, Administrative Updates** or **Temporary permits** at an existing facility, please provide directions to the *present location* of the facility from the nearest state road;
- For **Construction** or **Relocation permits,** please provide directions to the *proposed new site location* from the nearest state road. Include a **MAP** as **Attachment B**.

From Wheeling: Travel East on I-70 for approximately 9.3 miles. Take Exit 11 onto Dallas Pike. Turn right onto Dallas Pike and travel approximately 1.7 miles. Take a slight left onto Middle Wheeling Creek Road (Old Co. 39) for 0.4 miles. Continue onto Dallas Pike and Travel 3.0 miles. Turn right onto Number 2 Ridge Road and travel 3.6 miles. Turn right and the facility will be 0.5 miles on the right.

12.B. New site address (if applicable):	12C. Nearest city or town: Majorsville	12D. County: Marshall
12.E. UTM Northing (KM): 4,424.302	12F. UTM Easting (KM): 539.827	12G. UTM Zone: 17

13. Briefly describe the proposed change(s) at the facility:

CONE would like to update their permit to reflect a new 200 HP electric VRU, four 330 gallon methanol tanks, and four 500 gallon lube oil tanks. They would also like to replace the 755 HP backup generator with a new 1,490 HP backup generator, update the condensate stabilizer re-boiler heat input capacity from 0.75 MMBtu/hr. to 1.43 MMBtu/hr, and remove Kb requirements from existing permit since gun barrel tanks are exempt. These changes will be reflected in new calculations to show emissions before and after the change. Data sheets for the tanks and new generator have been completed.

14A. Provide the date of anticipated installation or change: – If this is an **After-The-Fact** permit application, provide the date upon which the proposed change did happen: 12/2015	14B. Date of anticipated Start-Up if a permit is granted: / /

14C. Provide a **Schedule** of the planned **Installation** of/**Change** to and **Start-Up** of each of the units proposed in this permit application as **Attachment C** (if more than one unit is involved).

15. Provide maximum projected **Operating Schedule** of activity/activities outlined in this application:
Hours Per Day 24 Days Per Week 7 Weeks Per Year 52

16. Is demolition or physical renovation at an existing facility involved? ☐ **YES** ☒ **NO**

17**. Risk Management Plans.** If this facility is subject to 112(r) of the 1990 CAAA, or will become subject due to proposed changes (for applicability help see www.epa.gov/ceppo), submit your **Risk Management Plan (RMP)** to U. S. EPA Region III.

18**. Regulatory Discussion.** List all Federal and State air pollution control regulations that you believe are applicable to the proposed process *(if known).* A list of possible applicable requirements is also included in Attachment S of this application (Title V Permit Revision Information). Discuss applicability and proposed demonstration(s) of compliance *(if known).* Provide this information as **Attachment D.**

Section II. Additional attachments and supporting documents.

19. Include a check payable to WVDEP – Division of Air Quality with the appropriate **application fee** (per 45CSR22 and 45CSR13).

20. Include a **Table of Contents** as the first page of your application package.

21. Provide a **Plot Plan,** e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is or is to be located as **Attachment E** (Refer to ***Plot Plan Guidance***) **.**

– Indicate the location of the nearest occupied structure (e.g. church, school, business, residence).

22. Provide a **Detailed Process Flow Diagram(s)** showing each proposed or modified emissions unit, emission point and control device as **Attachment F.**

23. Provide a **Process Description** as **Attachment G.**

– Also describe and quantify to the extent possible all changes made to the facility since the last permit review (if applicable).

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

24. Provide **Material Safety Data Sheets (MSDS)** for all materials processed, used or produced as **Attachment H.**

– For chemical processes, provide a MSDS for each compound emitted to the air.

25. Fill out the **Emission Units Table** and provide it as **Attachment I.**

26. Fill out the **Emission Points Data Summary Sheet (Table 1 and Table 2)** and provide it as **Attachment J.**

27. Fill out the **Fugitive Emissions Data Summary Sheet** and provide it as **Attachment K.**

28. Check all applicable **Emissions Unit Data Sheets** listed below:

☐ Bulk Liquid Transfer Operations
☐ Chemical Processes
☐ Concrete Batch Plant
☐ Grey Iron and Steel Foundry
☐ Haul Road Emissions
☐ Hot Mix Asphalt Plant
☐ Incinerator
☒ Indirect Heat Exchanger
☐ Quarry
☐ Solid Materials Sizing, Handling and Storage Facilities
☒ Storage Tanks
☒ General Emission Unit, specify: ICE Data Sheet

Fill out and provide the **Emissions Unit Data Sheet(s)** as **Attachment L.**

29. Check all applicable **Air Pollution Control Device Sheets** listed below:

☐ Absorption Systems
☐ Adsorption Systems
☐ Afterburner
☐ Baghouse
☐ Condenser
☐ Electrostatic Precipitator
☐ Flare
☐ Mechanical Collector
☐ Wet Collecting System
☐ Other Collectors, specify

Fill out and provide the **Air Pollution Control Device Sheet(s)** as **Attachment M.**

30. Provide all **Supporting Emissions Calculations** as **Attachment N,** or attach the calculations directly to the forms listed in Items 28 through 31.

31. **Monitoring, Recordkeeping, Reporting and Testing Plans.** Attach proposed monitoring, recordkeeping, reporting and testing plans in order to demonstrate compliance with the proposed emissions limits and operating parameters in this permit application. Provide this information as **Attachment O.**

➢ Please be aware that all permits must be practically enforceable whether or not the applicant chooses to propose such measures. Additionally, the DAQ may not be able to accept all measures proposed by the applicant. If none of these plans are proposed by the applicant, DAQ will develop such plans and include them in the permit.

32. **Public Notice.** At the time that the application is submitted, place a **Class I Legal Advertisement** in a newspaper of general circulation in the area where the source is or will be located (See 45CSR§13-8.3 through 45CSR§13-8.5 and ***Example Legal Advertisement*** for details). Please submit the **Affidavit of Publication** as **Attachment P** immediately upon receipt.

33**. Business Confidentiality Claims.** Does this application include confidential information (per 45CSR31)?

☐ **YES** ☒ **NO**

➢ If **YES,** identify each segment of information on each page that is submitted as confidential and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's "***Precautionary Notice – Claims of Confidentiality"*** guidance found in the ***General Instructions*** as **Attachment Q.**

Section III. Certification of Information

34. **Authority/Delegation of Authority.** Only required when someone other than the responsible official signs the application. Check applicable **Authority Form** below:

☐ Authority of Corporation or Other Business Entity
☐ Authority of Partnership
☐ Authority of Governmental Agency
☐ Authority of Limited Partnership

Submit completed and signed **Authority Form** as **Attachment R.**

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

35A. **Certification of Information.** To certify this permit application, a Responsible Official (per 45CSR§13-2.22 and 45CSR§30-2.28) or Authorized Representative shall check the appropriate box and sign below.

Certification of Truth, Accuracy, and Completeness

I, the undersigned ☒ **Responsible Official** / ☐ **Authorized Representative,** hereby certify that all information contained in this application and any supporting documents appended hereto, is true, accurate, and complete based on information and belief after reasonable inquiry I further agree to assume responsibility for the construction, modification and/or relocation and operation of the stationary source described herein in accordance with this application and any amendments thereto, as well as the Department of Environmental Protection, Division of Air Quality permit issued in accordance with this application, along with all applicable rules and regulations of the West Virginia Division of Air Quality and W.Va. Code § 22-5-1 et seq. (State Air Pollution Control Act). If the business or agency changes its Responsible Official or Authorized Representative, the Director of the Division of Air Quality will be notified in writing within 30 days of the official change.

Compliance Certification

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

SIGNATURE _____ *(Please use blue ink)* DATE: 6/26/17 *(Please use blue ink)*

35B. Printed name of signee: Joseph Fink		35C. Title: Chief Operating Officer
35D. E-mail: joefink@consolenergy.com	36E. Phone: 724-485-3524	36F. FAX:
36A. Printed name of contact person (if different from above): Patrick Flynn		36B. Title: Engineer Air Permitting and Compliance
36C. E-mail: PatrickFlynn@consolenergy.com	36D. Phone: 724-485-3156	36E. FAX:

PLEASE CHECK ALL APPLICABLE ATTACHMENTS INCLUDED WITH THIS PERMIT APPLICATION:

- ☒ **Attachment A: Business Certificate**
- ☒ **Attachment B: Map(s)**
- ☐ **Attachment C: Installation and Start Up Schedule**
- ☒ **Attachment D: Regulatory Discussion**
- ☒ **Attachment E: Plot Plan**
- ☒ **Attachment F: Detailed Process Flow Diagram(s)**
- ☒ **Attachment G: Process Description**
- ☐ **Attachment H: Material Safety Data Sheets (MSDS)**
- ☒ **Attachment I: Emission Units Table**
- ☒ **Attachment J: Emission Points Data Summary Sheet**
- ☒ **Attachment K: Fugitive Emissions Data Summary Sheet**
- ☒ **Attachment L: Emissions Unit Data Sheet(s)**
- ☐ **Attachment M: Air Pollution Control Device Sheet(s)**
- ☒ **Attachment N: Supporting Emissions Calculations**
- ☒ **Attachment O: Monitoring/Recordkeeping/Reporting/Testing Plans**
- ☒ **Attachment P: Public Notice**
- ☐ **Attachment Q: Business Confidential Claims**
- ☐ **Attachment R: Authority Forms**
- ☐ **Attachment S: Title V Permit Revision Information**
- ☐ **Application Fee**

Please mail an original and three (3) copies of the complete permit application with the signature(s) to the DAQ, Permitting Section, at the address listed on the first page of this application. Please DO NOT fax permit applications.

FOR AGENCY USE ONLY – IF THIS IS A TITLE V SOURCE:

☐ ***Forward 1 copy of the application to the Title V Permitting Group and:***

☐ ***For Title V Administrative Amendments:***

- ☐ ***NSR permit writer should notify Title V permit writer of draft permit,***

☐ ***For Title V Minor Modifications:***

- ☐ ***Title V permit writer should send appropriate notification to EPA and affected states within 5 days of receipt,***
- ☐ ***NSR permit writer should notify Title V permit writer of draft permit.***

☐ ***For Title V Significant Modifications processed in parallel with NSR Permit revision:***

- ☐ ***NSR permit writer should notify a Title V permit writer of draft permit,***
- ☐ ***Public notice should reference both 45CSR13 and Title V permits,***
- ☐ ***EPA has 45 day review period of a draft permit.***

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

ATTACHMENT A

BUSINESS CERTIFICATE

45CSR13 Permit Modification Application

Majorsville Compressor Station
Dallas, West Virginia

CONE Gathering LLC
1000 Consol Energy Drive
Canonsburg, PA 15317

2017

State of West Virginia

Certificate

I, Natalie E. Tennant, Secretary of State of the State of West Virginia, hereby certify that

CONE GATHERING LLC

was duly authorized under the laws of this state to transact business in West Virginia as a foreign limited liability company on September 23, 2011.

The company is filed as an at-will company, for an indefinite period.

I further certify that the LLC (PLLC) has not been revoked by the State of West Virginia nor has a Certificate of Cancellation been issued.

Therefore, I hereby issue this

CERTIFICATE OF AUTHORIZATION

Validation ID:8WV1H_5P568

Given under my hand and the Great Seal of the State of West Virginia on this day of April 09, 2014

Natalie E. Tennant

Secretary of State

ATTACHMENT B

MAP

45CSR13 Permit Modification Application

Majorsville Compressor Station
Dallas, West Virginia

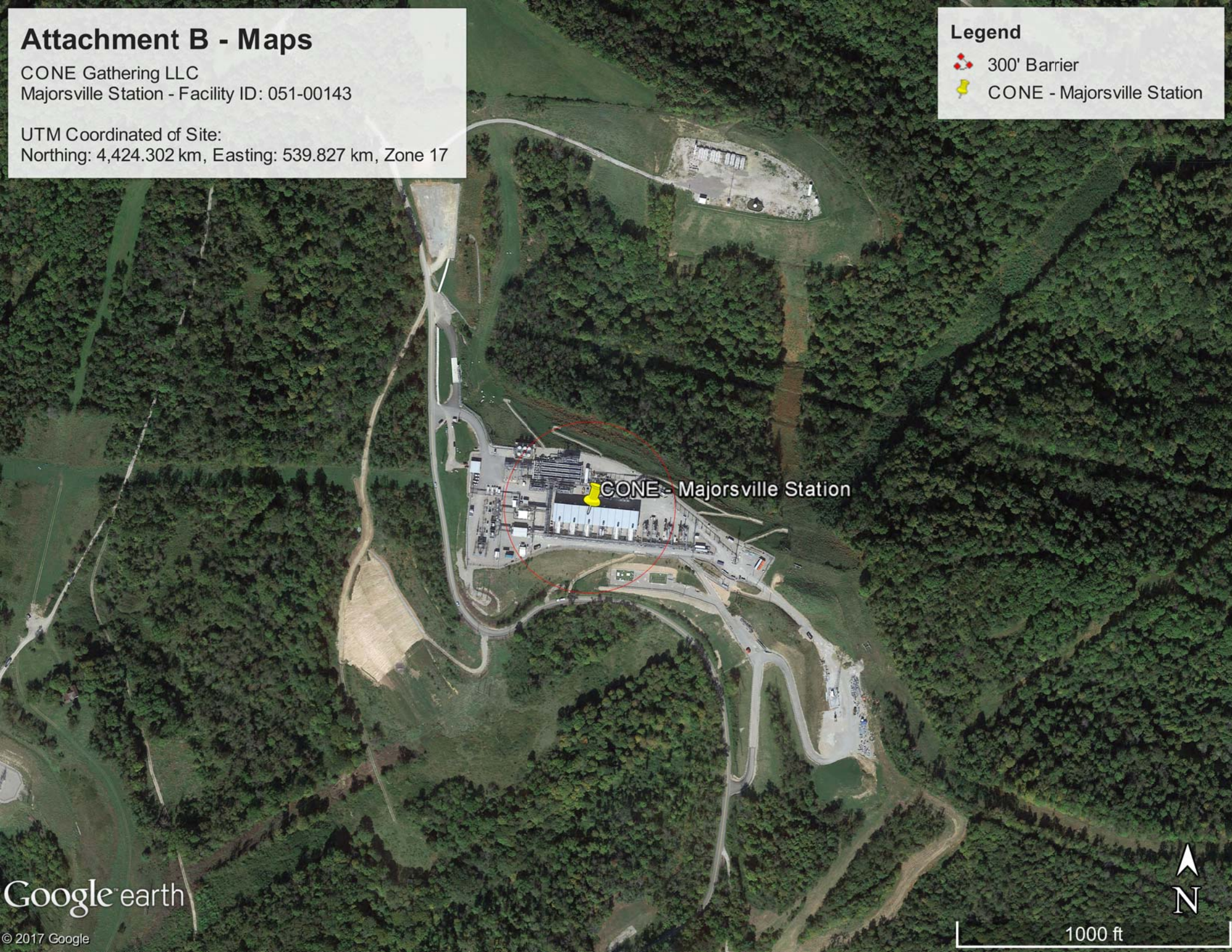
CONE Gathering LLC
1000 Consol Energy Drive
Canonsburg, PA 15317

2017

Attachment B - Maps

CONE Gathering LLC
Majorsville Station - Facility ID: 051-00143

UTM Coordinated of Site:
Northing: 4,424.302 km, Easting: 539.827 km, Zone 17



ATTACHMENT C

INSTALLATION AND START UP SCHEDULE

NOT APPLICABLE: THE CHANGES ARE AFTER-THE-FACT

45CSR13 Permit Modification Application

Majorsville Compressor Station
Dallas, West Virginia

CONE Gathering LLC
1000 Consol Energy Drive
Canonsburg, PA 15317

2017

ATTACHMENT D

REGULATORY DISCUSSION

45CSR13 Permit Modification Application

Majorsville Compressor Station
Dallas, West Virginia

CONE Gathering LLC
1000 Consol Energy Drive
Canonsburg, PA 15317

2017

REGULATORY DISCUSSION

APPLICABLE REGULATIONS

The newly added and modified equipment at this facility are subject to the following applicable rules and regulations:

Federal and State:

45 CSR 2 – *To Prevent and Control Particulate Air Pollution Control from Combustion of Indirect Heat Exchangers*

The indirect heat exchanger consists of a condensate stabilizer reboiler burner, which is subject to the visible emission standard of §45-2-3 as follows:

3.1. No person shall cause, suffer, allow or permit emission of smoke and/or particulate matter into the open air from any fuel burning unit which is greater than ten (10) percent opacity based on a six minute block average.

However, in accordance with the exemptions defined with §45-2-11 these sources have limited requirements as follows:

11.1. Any fuel burning unit(s) having a heat input under ten (10) million B.T.U.'s per hour will be exempt from sections 4, 5, 6, 8 and 9. However, failure to attain acceptable air quality in parts of some urban areas may require the mandatory control of these sources at a later date.

45 CSR 4 – *To Prevent and Control the Discharge of Air Pollutants into the Open Air Which Causes or Contributes to an Objectionable Odor or Odors*

45 CSR 11 – *Prevention of Air Pollution Emergency Episodes*

45 CSR 13 – *Permits for Construction, Modification, Relocation, and Operation of Stationary Source of Air Pollutants*

CONE has applied for a modification of its current air permit for the Majorsville Station (R13-3081D) to incorporate the addition of new equipment and recognition of existing equipment at the facility. CONE added a new 200 hp electric vapor recovery unit (VRU-5) to the facility as well as a new 1,490 hp Cummins QST30-G5-NR2 diesel generator. With the addition of the new diesel generator, CONE would like to reflect the removal of the existing generator, EG-1 from the permit. Also, CONE would like to reflect a change in rating to the existing condensate stabilizer reboiler (BLR-2) from 0.75 mmBtu/hr to 1.43 mmBtu/hr. Lastly, CONE would like to reflect the addition of eight (8) de minimus storage tanks to the facility. These storage tanks will consist of four (4) 330 gallon methanol tanks and four (4) 500 gallon lube oil tanks. Additionally, the (T06) gun barrel tank should be reevaluated for NSPS subpart Kb applicability as it appears to meet the exemption criterial as described in more detail below within the non-applicability section of this regulatory review.

45 CSR 17 – *To Prevent and Control Particulate Matter Air Pollution from Materials Handling, Preparation, Storage And Other Sources Of Particulate Matter*
40 CFR 60 Subpart IIII – *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*

This diesel fired compression ignition engine is considered a new unit subject to the NSPS since having been manufactured after April 1, 2006 as defined in 40CFR60.4200(a)(2)(i) for stationary units and is subject to the applicable requirements as defined in this subpart. The engine was manufactured in March of 2013 and complies by operating as an EPA Certified Emission Unit (Certificate No: CEX-STATCI-11-05).

40 CFR 60 Subpart OOOOa – *Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification, or Reconstruction Commenced after September 18, 2015.* The new VRU compressor triggers a modification under the NSPS since having been newly installed at the facility in April of 2017.

Fugitive Components at Compressor Stations and Reciprocating Compressor Packing
Since the newly added electrically driven vapor recovery unit compressor (VRU-5) at this station will constitute a modification to the site in accordance with the definition 40CFR§60.5365a(j) after September 18, 2015, the collection of fugitive components at the site will become subject to the equipment leak standards of §60.5397a. As a result of this modification, the source will be required to develop and implement a fugitive monitoring plan and conduct quarterly OGI surveys. The initial survey will be required within 60 days of startup or by June 3, 2017, whichever is later in accordance with §60.5397a(f)(2). However, on April 18, 2017 the USEPA Administrator, E. Scott Pruitt, issued a letter of reconsideration based on comments received from industry groups on August 2, 2016. This letter authorizes a 90 day stay of the compliance date for fugitive emissions monitoring requirements, which resets the compliance date to Sept. 1, 2017.

The reciprocating compressor associated with emission unit (VRU-5) will also be subject to the rod packing standards of §60.5385a that requires them to be replaced/rebuilt every 26,000 hrs or 3 years. Records shall be maintained based on months or hours of operations since initial startup and each subsequent rebuild or replacement of the compressor's rod packing.

NON-APPLICABILITY DETERMINATIONS

The following requirements have been determined to be "not applicable" in relation to the newly added and modified equipment at this facility:

45 CSR 10 – *To Prevent and Control Air Pollution from the Emission of Sulfur Oxides*

The fuel burning unit utilized at this site is exempt from Sections 4 and 5 of this rule because the site does not meet the definition of manufacturing process or refinery process.

45 CSR 30 – *Requirements for Operating Permits – Title V of the Clean Air Act*

The emissions from this facility do not meet emission thresholds that would trigger the need for a 45 CSR 30 Title V Operating Permit.

40 CFR 60 Subpart Dc – *Standards of Performance for Steam Generating Units*

The condensate stabilization reboiler at this facility is rated at below 10 million BTU/hr; hence, Subpart Dc is not applicable in accordance with §60.40c(a)

40 CFR 60 Subpart K, Ka – *Standards of Performance for Storage Vessels of Petroleum Liquids*

This subpart is not applicable because all newly added tanks at this station are below 40,000 gallons in capacity as specified in §60.110a(a).

40 CFR 60 Subpart Kb – *Standards of Performance for Volatile Organic Liquid Storage Vessels*

This subpart is not applicable because all newly added tanks at this station are below 75m^3 (19,813 gallons) in capacity as specified in §60.110b(a).

The existing 500 bbl gun barrel tank was also reevaluated for Kb applicability and it appears to meet the exemption criteria for tanks with a design capacity less than 1,589.874 m^3 (420,000 gallons/10,000 bbls) as specified in §60.110b(d)(4).

40 CFR 63 Subpart DDDDD – *NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters*

This subpart is not applicable since the facility is not a major source of HAPs as defined in §63.7575.

40 CFR 63 Subpart JJJJJJ – *NESHAP for Industrial, Commercial, and Institutional Boilers Area Sources*

This subpart is not applicable because the condensate stabilizer reboiler is a process heater, which is exempt from regulation under this area source GACT standard.

ATTACHMENT E

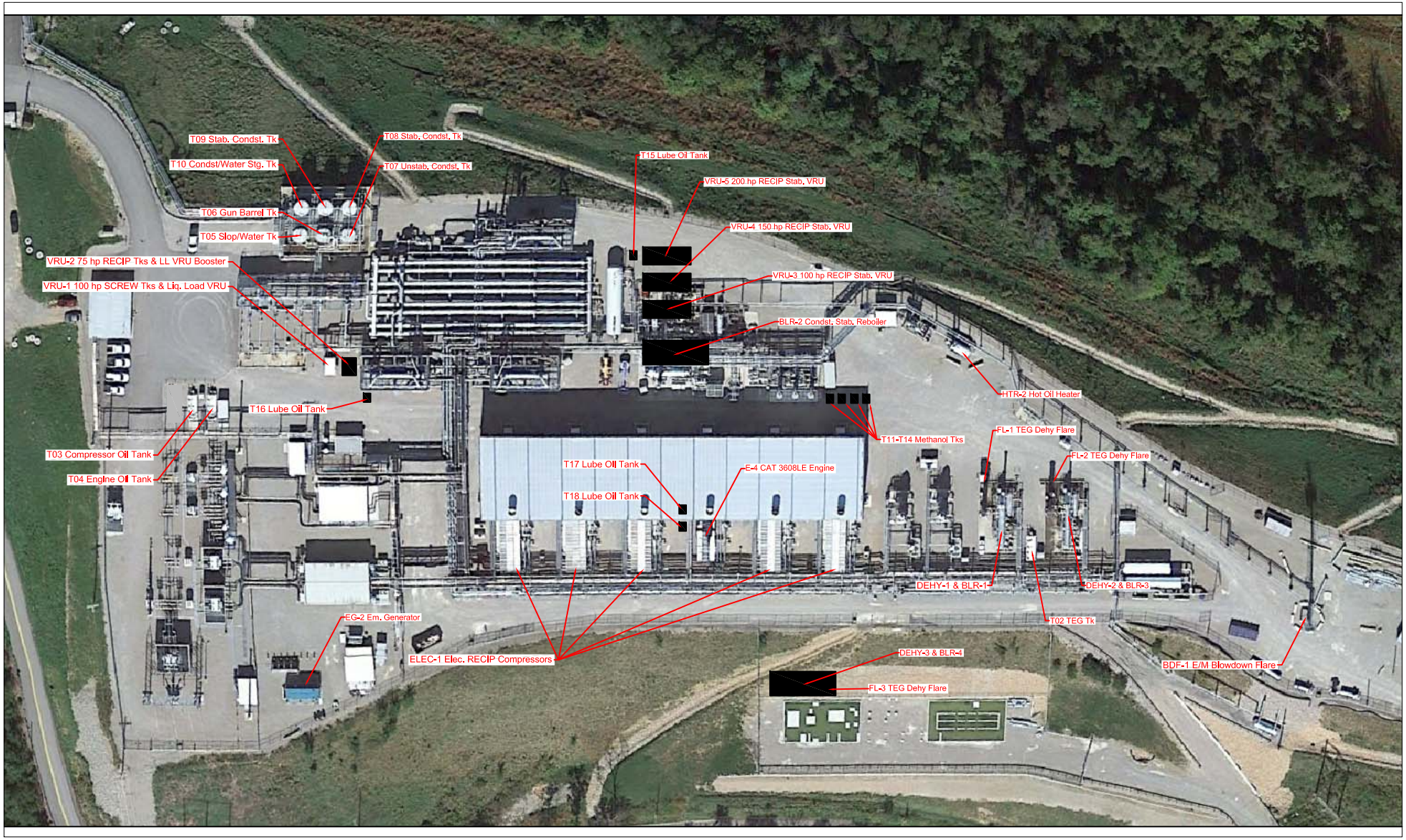
PLOT PLAN

45CSR13 Permit Modification Application

Majorsville Compressor Station
Dallas, West Virginia

CONE Gathering LLC
1000 Consol Energy Drive
Canonsburg, PA 15317

2017



SLR

CONE Gathering LLC

Attachment E - Process Flow Diagram

Majorsville Station	July 2017

ATTACHMENT F

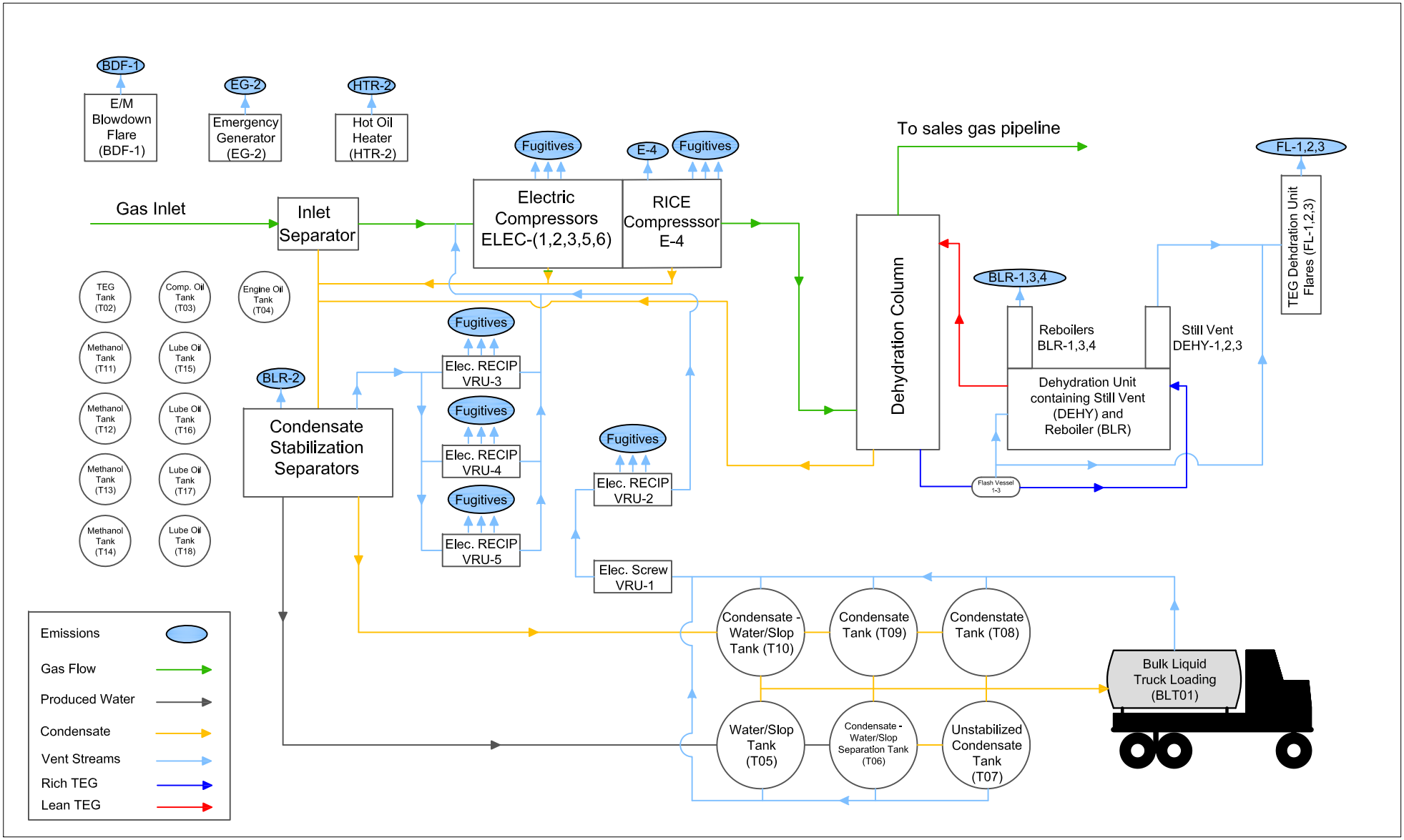
PROCESS FLOW DIAGRAM

45CSR13 Permit Modification Application

Majorsville Compressor Station
Dallas, West Virginia

CONE Gathering LLC
1000 Consol Energy Drive
Canonsburg, PA 15317

2017



SLR

CONE Gathering LLC

Attachment F - Process Flow Diagram

Majorsville Station | July 2017

ATTACHMENT G

PROCESS DESCRIPTION

45CSR13 Permit Modification Application

Majorsville Compressor Station
Dallas, West Virginia

CONE Gathering LLC
1000 Consol Energy Drive
Canonsburg, PA 15317

2017

PROCESS DESCRIPTION

The process begins with natural gas entering the station by pipeline and going through an inlet separator slug catcher that removes any entrained liquids. Next, the gas is compressed by natural-gas fired and electric driven compressors before entering a glycol dehydration column where it is contacted with triethylene glycol (TEG) to strip water from the gas. The dry gas outlet from the dehydration column is sent to the natural gas sales line and exits the facility. The rich TEG from the dehydration unit is fed into a reboiler to remove water so the lean TEG can be recycled back to the column. The emissions from the reboiler stills (DEHY-1,2,3) are sent into FL-1 through FL-3. Condensate liquids separated from the gas streams are sent to stabilization where the stream undergoes a pressure reduction step which releases flash gas to VRU-3 through VRU-5 to be recycled back into the gas inlet line prior to compression. Produced water and condensate leave stabilization and are placed into tanks so they can be removed from the facility via tanker truck. Emissions from the tanks, as well as the truck loading emissions, are controlled by VRU-1 and VRU-2 which recycles the vapors back into the gas inlet line prior to compression.

DESCRIPTION OF PROCESS CHANGE

CONE has applied for a modification of its current air permit for the Majorsville Station (R13-3081D) to incorporate the addition of new equipment and recognition of existing equipment at the facility. CONE plans to add a new 200 hp electric vapor recovery unit (VRU-5) to the facility as well as a new 1,490 hp Cummins QST30-G5-NR2 diesel generator. With the addition of the new diesel generator, CONE would like to reflect the removal of the existing generator, EG-1 from the permit. Also, CONE would like to reflect a change in rating of the existing condensate stabilizer reboiler (BLR-2) from 0.75 MMBtu/hr to 1.43 MMBtu/hr. Lastly, CONE would like to reflect the addition of eight (8) de minimus storage tanks to the facility. These storage tanks will consist of four (4) 330 gallon methanol tanks and four (4) 500 gallon lube oil tanks.

Emission Unit ID	Emission Point ID	Emission Unit Description	Type of Change	Year Installed	Design Capacity	Control Device
EG-1	EG-1	Cummins QSX15-G9 NR2	Removal	2012	755 bhp	None
EG-2	EG-2	Cummins QST30-G5	New	2015	1,490 bhp	None
VRU-5	Fugitive	Electric VRU Reciprocating Compressor	New	2017	200 hp	None
BLR-2	BLR-2	Condensate Stabilizer Reboiler	Modification-Increased heat input capacity	2012	1.43 MMBtu/hr	None
T11	NA	Methanol Tank	New	2017	330 gal	None

T12	NA	Methanol Tank	New	2017	330 gal	None
T13	NA	Methanol Tank	New	2017	330 gal	None
T14	NA	Methanol Tank	New	2017	330 gal	None
T15	NA	Lube Oil Tank	New	2017	500 gal	None
T16	NA	Lube Oil Tank	New	2017	500 gal	None
T17	NA	Lube Oil Tank	New	2017	500 gal	None
T18	NA	Lube Oil Tank	New	2017	500 gal	None

ATTACHMENT H

SAFETY DATA SHEETS (SDS)

NOT APPLICABLE: SDS SHEETS INCLUDED IN PREVIOUS APPLICATION

45CSR13 Permit Modification Application

Majorsville Compressor Station
Dallas, West Virginia

CONE Gathering LLC
1000 Consol Energy Drive
Canonsburg, PA 15317

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ATTACHMENT I

EMISSION UNITS TABLE

45CSR13 Permit Modification Application

Majorsville Compressor Station
Dallas, West Virginia

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Canonsburg, PA 15317

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DehyAttachment I

Emission Units Table

(includes all emission units and air pollution control devices that will be part of this permit application review, regardless of permitting status)

Emission Unit ID[1]	Emission Point ID[2]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type[3] and Date of Change	Control Device[4]
EG-1	EG-1	Cummins QSX15-G9 NR2	2012	755 bhp	Removal	None
EG-2	EG-2	Cummins QST30-G5	2015	1,490 bhp	New	None
VRU-5	Fugitive	Electric VRU Reciprocating Compressor	2017	200 hp	New	None
BLR-2	BLR-2	Condensate Stabilizer Reboiler	2012/2017	1.43 MMBtu/hr	Modification	None
T11-T14	NA	Methanol Tank	2017	330 gal each	New	None
T15-T18	NA	Lube Oil Tank	2017	500 gal each	New	None

[1] For Emission Units (or Sources) use the following numbering system:1S, 2S, 3S,... or other appropriate designation.
[2] For Emission Points use the following numbering system:1E, 2E, 3E, ... or other appropriate designation.
[3] New, modification, removal
[4] For Control Devices use the following numbering system: 1C, 2C, 3C,... or other appropriate designation.

ATTACHMENT J

EMISSION POINTS DATA SUMMARY SHEET

45CSR13 Permit Modification Application

Majorsville Compressor Station
Dallas, West Virginia

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Attachment J
EMISSION POINTS DATA SUMMARY SHEET

Table 1: Emissions Data

Emission Point ID No. *(Must match Emission Units Table & Plot Plan)*	Emission Point Type[1]	Emission Unit Vented Through This Point *(Must match Emission Units Table & Plot Plan)*		Air Pollution Control Device *(Must match Emission Units Table & Plot Plan)*		Vent Time for Emission Unit *(chemical processes only)*		All Regulated Pollutants - Chemical Name/CAS[3] *(Speciate VOCs & HAPS)*	Maximum Potential Uncontrolled Emissions[4]		Maximum Potential Controlled Emissions[5]		Emission Form or Phase *(At exit conditions, Solid, Liquid or Gas/Vapor)*	Est. Method Used[6]	Emission Concentration[7] (ppmv or mg/m^4)
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
EG-2	Vertical Stack	EG-2	Emergency Diesel Generator	NA	NA	NA	NA	NO_X CO VOC SO_2 PM_{10} CH2O* HAPs CO2e	15.67 8.57 3.65 0.36 0.49 -- 0.04 1220.42	3.92 2.14 0.91 0.09 0.12 -- 0.01 305.11	--	--	Gas/ Vapor	EE	Can Supply Upon Request
BLR-2	Vertical Stack	BLR-2	Condensate Stabilizer Reboiler	NA	NA	NA	NA	NO_X CO VOC SO_2 PM_{10} CH2O* HAPs CO2e	0.14 0.12 0.01 <0.01 0.01 <0.01 <0.01 167.32	0.63 0.53 0.03 <0.01 0.05 <0.01 0.01 732.88	--	--	Gas/ Vapor	EE	Can Supply Upon Request

Note*: CH2O emissions included in total VOC emissions.

The EMISSION POINTS DATA SUMMARY SHEET provides a summation of emissions by emission unit. Note that uncaptured process emission unit emissions are not typically considered to be fugitive and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET. Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions). Please complete the FUGITIVE EMISSIONS DATA SUMMARY SHEET for fugitive emission activities.

[1] Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.

[2] Indicate by "C" if venting is continuous. Otherwise, specify the average short-term venting rate with units, for intermittent venting (ie., 15 min/hr). Indicate as many rates as needed to clarify frequency of venting (e.g., 5 min/day, 2 days/wk).

[3] List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. **LIST** Acids, CO, CS_2, VOCs, H_2S, Inorganics, Lead, Organics, O_3, NO, NO_2, SO_2, SO_3, all applicable Greenhouse Gases (including CO_2 and methane), etc. **DO NOT LIST** H_2, H_2O, N_2, O_2, and Noble Gases.

[4] Give maximum potential emission rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

[5] Give maximum potential emission rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

[6] Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).

[7] Provide for all pollutant emissions. Typically, the units of parts per million by volume (ppmv) are used. If the emission is a mineral acid (sulfuric, nitric, hydrochloric or phosphoric) use units of milligram per dry cubic meter (mg/m^3) at standard conditions (68 °F and 29.92 inches Hg) (see 45CSR7). If the pollutant is SO_2, use units of ppmv (See 45CSR10).

ATTACHMENT K

FUGITIVE EMISSIONS DATA SHEET

45CSR13 Permit Modification Application

Majorsville Compressor Station
Dallas, West Virginia

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ATTACHMENT K – 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: Fugitives

Leak Detection Method Used	☐ Audible, visual, and olfactory (AVO) inspections	☒ Infrared (FLIR) cameras	☐ Other (please describe)	☐ 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_2e)
Pumps	☐ Yes ☐ No	--	--	☐ Gas ☐ Liquid ☐ Both	--	--	--
Valves	☐ Yes ☐ No	--	--	☐ Gas ☐ Liquid ☐ Both	--	--	--
Safety Relief Valves	☐ Yes ☐ No	--	--	☐ Gas ☐ Liquid ☐ Both	--	--	--
Open Ended Lines	☐ Yes ☐ No	--	--	☐ Gas ☐ Liquid ☐ Both	--	--	--
Sampling Connections	☐ Yes ☐ No	--	--	☐ Gas ☐ Liquid ☐ Both	--	--	--
Connections (Not sampling)	☐ Yes ☐ No	--	--	☐ Gas ☐ Liquid ☐ Both	--	--	--
Compressors	☐ Yes ☒ No	1	*1995 EPA Protocol for Equipment Leak Emission Estimates* - Table 2-4, Oil & Gas Production Operations Average Emission Factors (kg/hr/source) (8.8E-03)	☒ Gas ☐ Liquid ☐ Both	0.01	<0.01	0.21
Flanges	☐ Yes ☐ No	--	--	☐ Gas ☐ Liquid ☐ Both	--	--	--
Other[1]	☐ Yes ☐ No	--	--	☐ Gas ☐ Liquid ☐ Both	--	--	--

[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.):
Please indicate if there are any closed vent bypasses (include component):
Specify all equipment used in the closed vent system (e.g. VRU, ERD, thief hatches, tanker truck/rail car loading, etc.)

ATTACHMENT L

EMISSION UNIT DATA SHEET

45CSR13 Permit Modification Application

Majorsville Compressor Station
Dallas, West Virginia

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1000 Consol Energy Drive
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INTERNAL COMBUSTION ENGINE DATA SHEET

Complete this data sheet for each internal combustion engine at the facility. Include manufacturer performance data sheet(s) or any other supporting document if applicable. Use extra pages if necessary. *Generator(s) and microturbine generator(s) shall also use this form.*

Emission Unit ID#[1]		EG-2		EG-1			
Engine Manufacturer/Model		Cummins/ QST30-G5 NR2		Cummins/ QSX15-G9 NR2			
Manufacturers Rated bhp/rpm		1,490/1800		755/1800			
Source Status[2]		NS		REM			
Date Installed/ Modified/Removed/Relocated[3]		12/2015		12/2015			
Engine Manufactured /Reconstruction Date[4]		2013		--			
Check all applicable Federal Rules for the engine (include EPA Certificate of Conformity if applicable)[5]		☐40CFR60 Subpart JJJJ ☐JJJJ Certified? ☒40CFR60 Subpart IIII ☒IIII Certified? ☐40CFR63 Subpart ZZZZ ☐ NESHAP ZZZZ/ NSPS JJJJ Window ☐ NESHAP ZZZZ Remote Sources		☐40CFR60 Subpart JJJJ ☐JJJJ Certified? ☒40CFR60 Subpart IIII ☒IIII Certified? ☐40CFR63 Subpart ZZZZ ☐ NESHAP ZZZZ/ NSPS JJJJ Window ☐ NESHAP ZZZZ Remote Sources		☐40CFR60 Subpart JJJJ ☐JJJJ Certified? ☐40CFR60 Subpart IIII ☐IIII Certified? ☐40CFR63 Subpart ZZZZ ☐ NESHAP ZZZZ/ NSPS JJJJ Window ☐ NESHAP ZZZZ Remote Sources	
Engine Type[6]		NA		NA			
APCD Type[7]		None		None			
Fuel Type[8]		D		D			
H_2S (gr/100 scf)		NA		NA			
Operating bhp/rpm		1,490/1800		755/1800			
BSFC (BTU/bhp-hr)		7,000		7,000			
Hourly Fuel Throughput		72.20 gal/hr		35.9 gal/hr		ft^3/hr gal/hr	
Annual Fuel Throughput (Must use 8,760 hrs/yr unless emergency generator)		36,100 gal/yr		17,950 gal/yr		$MMft^3$/yr gal/yr	
Fuel Usage or Hours of Operation Metered		Yes ☒ No ☐		Yes ☒ No ☐		Yes ☐ No ☐	
Calculation Methodology[9]	**Pollutant[10]**	**Hourly PTE (lb/hr)[11]**	**Annual PTE (tons/year)[11]**	**Hourly PTE (lb/hr)[11]**	**Annual PTE (tons/year)[11]**	**Hourly PTE (lb/hr)[11]**	**Annual PTE (tons/year)[11]**
MD	NO_x	15.67	3.92	7.8	1.95		
MD	CO	8.57	2.14	0.48	0.12		
AP	VOC	3.65	0.91	0.16	0.04		
MD	SO_2	0.36	0.09	0.04	0.01		
MD	PM_{10}	0.49	0.12	0.08	0.02		
AP	Formaldehyde	0.01	<0.01	<0.01	<0.01		
AP	Total HAPs	0.04	0.01	<0.01	<0.01		
AP	GHG (CO_2e)	1,220.42	305.11	780.00	195.00		

1 Enter the appropriate Source Identification Number for each natural gas-fueled reciprocating internal combustion engine/generator engine located at the well site. Multiple engines should be designated CE-1, CE-2, CE-3 etc. Generator engines should be designated GE-1, GE-2, GE-3 etc. Microturbine generator engines should be designated MT-1, MT-2, MT-3 etc. If more than three (3) engines exist, please use additional sheets.

2 Enter the Source Status using the following codes:

NS	Construction of New Source (installation)	ES	Existing Source
MS	Modification of Existing Source	RS	Relocated Source

REM Removal of Source

3 Enter the date (or anticipated date) of the engine's installation (construction of source), modification, relocation or removal.

4 Enter the date that the engine was manufactured, modified or reconstructed.

5 Is the engine a certified stationary spark ignition internal combustion engine according to 40CFR60 Subpart IIII/JJJJ? If so, the engine and control device must be operated and maintained in accordance with the manufacturer's emission-related written instructions. You must keep records of conducted maintenance to demonstrate compliance, but no performance testing is required. If the certified engine is not operated and maintained in accordance with the manufacturer's emission-related written instructions, the engine will be considered a non-certified engine and you must demonstrate compliance as appropriate.

Provide a manufacturer's data sheet for all engines being registered.

6 Enter the Engine Type designation(s) using the following codes:

2SLB	Two Stroke Lean Burn	4SRB	Four Stroke Rich Burn
4SLB	Four Stroke Lean Burn		

7 Enter the Air Pollution Control Device (APCD) type designation(s) using the following codes:

A/F	Air/Fuel Ratio	IR	Ignition Retard
HEIS	High Energy Ignition System	SIPC	Screw-in Precombustion Chambers
PSC	Prestratified Charge	LEC	Low Emission Combustion
NSCR	Rich Burn & Non-Selective Catalytic Reduction	OxCat	Oxidation Catalyst
SCR	Lean Burn & Selective Catalytic Reduction		

8 Enter the Fuel Type using the following codes:

PQ	Pipeline Quality Natural Gas	RG	Raw Natural Gas /Production Gas	D	Diesel

9 Enter the Potential Emissions Data Reference designation using the following codes. Attach all reference data used.

MD	Manufacturer's Data	AP	AP-42	
GR	GRI-HAPCalc™	OT	Other	(please list)

10 Enter each engine's Potential to Emit (PTE) for the listed regulated pollutants in pounds per hour and tons per year. PTE shall be calculated at manufacturer's rated brake horsepower and may reflect reduction efficiencies of listed Air Pollution Control Devices. Emergency generator engines may use 500 hours of operation when calculating PTE. PTE data from this data sheet shall be incorporated in the *Emissions Summary Sheet*.

11 PTE for engines shall be calculated from manufacturer's data unless unavailable.

Model: DQFAD
Frequency: 60
Fuel type: Diesel
KW rating: 1000 standby
900 prime
Emissions level: EPA NSPS Stationary Emergency Tier 2

† Generator set data sheet

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Exhaust emission data sheet:	EDS-1063
Exhaust emission compliance sheet:	EPA-1097
Sound performance data sheet:	MSP-1038
Cooling performance data sheet:	MCP-156
Prototype test summary data sheet:	PTS-266
Standard set-mounted radiator cooling outline:	0500-4391
Optional set-mounted radiator cooling outline:	
Optional heat exchanger cooling outline:	
Optional remote radiator cooling outline:	0500-4390

Fuel consumption

	Standby				Prime				Continuous
	kW (kVA)				kW (kVA)				kW (kVA)
Ratings	1000 (1250)				900 (1125)				
Load	1/4	1/2	3/4	Full	1/4	1/2	3/4	Full	Full
US gph	19.1	35.8	54.1	72.2	17.3	32.1	47.5	63.9	
L/hr	72.3	135.5	204.8	273.3	65.5	121.5	179.8	241.9	

Engine

	Standby rating	Prime rating	Continuous rating
Engine manufacturer	Cummins Inc.		
Engine model	QST30-G5 NR2		
Configuration	Cast iron, V 12 cylinder		
Aspiration	Turbocharged and low temperature aftercooled		
Gross engine power output, kWm (bhp)	1112 (1490)	1007 (1350)	
BMEP at set rated load, kPa (psi)	2417 (351)	2160 (313)	
Bore, mm (in)	140 (5.51)		
Stroke, mm (in)	165 (6.5)		
Rated speed, rpm	1800		
Piston speed, m/s (ft/min)	9.91 (1950)		
Compression ratio	14.7:1		
Lube oil capacity, L (qt)	154 (162.8)		
Overspeed limit, rpm	2100 ±50		
Regenerative power, kW	82		

Fuel flow

Maximum fuel flow, L/hr (US gph)	570 (150)	
Maximum fuel inlet restriction, kPa (in Hg)	27 (8.0)	
Maximum fuel inlet temperature, °C (°F)	66 (150)	

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Air	Standby rating	Prime rating	Continuous rating
Combustion air, m^3/min (scfm)	88 (3150)	81 (2880)	
Maximum air cleaner restriction, kPa (in H_2O)	6.2 (25)		
Alternator cooling air, m^3/min (cfm)	204 (7300)		

Exhaust			
Exhaust flow at set rated load, m^3/min (cfm)	211 (7540)	195 (6950)	
Exhaust temperature, °C (°F)	477 (890)	467 (873)	
Maximum back pressure, kPa (in H_2O)	6.8 (27)		

Standard set-mounted radiator cooling			
Ambient design, °C (°F)	50 (122)		
Fan load, kW_m (HP)	43 (57)		
Coolant capacity (with radiator), L (US gal)	201 (53.2)		
Cooling system air flow, m^3/min (scfm)	952 (34000)		
Total heat rejection, MJ/min (Btu/min)	48.9 (46455)	43.9 (41660)	
Maximum cooling air flow static restriction, kPa (in H_2O)	0.12 (0.5)		
Maximum fuel return line restriction kPa (in Hg)	67.5 (20)		

Optional set-mounted radiator cooling			
Ambient design, °C (°F)			
Fan load, kW_m (HP)			
Coolant capacity (with radiator), L (US gal)			
Cooling system air flow, m^3/min (scfm)			
Total heat rejection, MJ/min (Btu/min)			
Maximum cooling air flow static restriction, kPa (in H_2O)			
Maximum fuel return line restriction, kPa (in Hg)			

Optional heat exchanger cooling			
Set coolant capacity, L (US gal)			
Heat rejected, jacket water circuit, MJ/min (Btu/min)			
Heat rejected, aftercooler circuit, MJ/min (Btu/min)			
Heat rejected, fuel circuit, MJ/min (Btu/min)			
Total heat radiated to room, MJ/min (Btu/min)			
Maximum raw water pressure, jacket water circuit, kPa (psi)			
Maximum raw water pressure, aftercooler circuit, kPa (psi)			
Maximum raw water pressure, fuel circuit, kPa (psi)			
Maximum raw water flow, jacket water circuit, L/min (US gal/min)			
Maximum raw water flow, aftercooler circuit, L/min (US gal/min)			
Maximum raw water flow, fuel circuit, L/min (US gal/min)			
Minimum raw water flow at 27 °C (80 °F) inlet temp, jacket water circuit, L/min (US gal/min)			
Minimum raw water flow at 27 °C (80 °F) inlet temp, aftercooler circuit, L/min (US gal/min)			
Minimum raw water flow at 27 °C (80 °F) inlet temp, fuel circuit, L/min (US gal/min)			
Raw water delta P at min flow, jacket water circuit, kPa (psi)			
Raw water delta P at min flow, aftercooler circuit, kPa (psi)			
Raw water delta P at min flow, fuel circuit, kPa (psi)			
Maximum jacket water outlet temp, °C (°F)			
Maximum aftercooler inlet temp, °C (°F)			
Maximum aftercooler inlet temp at 25 °C (77 °F) ambient, °C (°F)			
Maximum fuel return line restriction, kPa (in Hg)			

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Optional remote radiator cooling[1]	Standby rating	Prime rating	Continuous rating
Set coolant capacity, L (US gal)			
Max flow rate at max friction head, jacket water circuit, L/min (US gal/min)	992 (262)		
Max flow rate at max friction head, aftercooler circuit, L/min (US gal/min)	303 (80)		
Heat rejected, jacket water circuit, MJ/min (Btu/min)	22.67 (21500)	21.01 (19925)	
Heat rejected, aftercooler circuit, MJ/min (Btu/min)	18.35 (17400)	15.69 (14885)	
Heat rejected, fuel circuit, MJ/min (Btu/min)			
Total heat radiated to room, MJ/min (Btu/min)	6.1 (5753)	5.6 (5301)	
Maximum friction head, jacket water circuit, kPa (psi)	69 (10)		
Maximum friction head, aftercooler circuit, kPa (psi)	48 (7)		
Maximum static head, jacket water circuit, m (ft)	14 (46)		
Maximum static head, aftercooler circuit, m (ft)	14 (46)		
Maximum jacket water outlet temp, °C (°F)	104 (220)	100 (212)	
Maximum aftercooler inlet temp at 25 °C (77 °F) ambient, °C (°F)	41 (105)		
Maximum aftercooler inlet temp, °C (°F)	62 (143)	56 (133)	
Maximum fuel flow, L/hr (US gph)			
Maximum fuel return line restriction, kPa (in Hg)	67.5 (20)		

Weights[2]

Unit dry weight kgs (lbs)	7633 (16824)
Unit wet weight kgs (lbs)	7931 (17480)

Notes:

[1] For non-standard remote installations contact your local Cummins Power Generation representative.

[2] Weights represent a set with standard features. See outline drawing for weights of other configurations.

Derating factors

Standby	Engine power available up to 701 m (2300 ft) at ambient temperatures up to 40 °C (104 °F). Above these elevations, derate at 3.5% per 305 m (1000 ft) and 7% per 10 °C (18 °F).
Prime	Engine power available up to 727 m (2385 ft) at ambient temperatures up to 40 °C (104 °F). Above these elevations, derate at 3.5% per 305 m (1000 ft) and 7% per 10 °C (18 °F).
Continuous	

Ratings definitions

Emergency standby power (ESP):	Limited-time running power (LTP):	Prime power (PRP):	Base load (continuous) power (COP):
Applicable for supplying power to varying electrical load for the duration of power interruption of a reliable utility source. Emergency Standby Power (ESP) is in accordance with ISO 8528. Fuel Stop power in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.	Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.	Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528. Ten percent overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.	Applicable for supplying power continuously to a constant electrical load for unlimited hours. Continuous Power (COP) is in accordance with ISO 8528, ISO 3046, AS 2789, DIN 6271 and BS 5514.

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Alternator data

Voltage	Connection[1]	Temp rise degrees C	Duty[2]	Single phase factor[3]	Max surge kVA[4]	Winding No.	Alternator data sheet	Feature Code
120/208-139/240	12-lead	125/105	S/P		4234	1019	ADS-312	B252
240/416-277/480							S-312	B252
277/480							S-311	B276
220/380-277/480							S-330	B282
220/380-277/480							S-330	B283
210/380-277/480							S-331	B284
240/416-277/480							S-312	B288
347/600							S-311	B300
347/600							S-312	B301
347/600	3-phase	80	S		4002	1004	ADS-330	B604

REFER TO ALTERNATOR DATA SHEET FOR PROJECT SPECIFIC ALTERNATOR PERFORMANCE INFORMATION.

Notes:

[1] Limited single phase capability is available from some three phase rated configurations. To obtain single phase rating, multipy the three phase kW rating by the Single Phase Factor[3]. All single phase ratings are at unity power factor.

[2] Standby (S), Prime (P) and Continuous ratings (C).

[3] Factor for the *Single Phase Output from Three Phase Alternator* formula listed below.

[4] Maximum rated starting kVA that results in a minimum of 90% of rated sustained voltage during starting.

Formulas for calculating full load currents:

Three phase output

$$\frac{kW \times 1000}{Voltage \times 1.73 \times 0.8}$$

Single phase output

$$\frac{kW \times SinglePhaseFactor \times}{Voltage}$$

Cummins Power Generation
1400 73rd Avenue N.E.
Minneapolis, MN 55432 USA
Phone: 763 574 5000
Fax: 763 574 5298

Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

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Cummins Power Generation

ALTERNATOR DATA SHEET

Frame Size: HC6K

CHARACTERISTICS

WEIGHTS:	Wound Stator Assembly	2553	lb	1150	kg
	Rotor Assembly	2426	lb	1093	kg
	Complete Alternator	5162	lb	2325	kg
MAXIMUM SPEED:		2250	rpm		
EXCITATION CURRENT:	Full Load	2.5	Amps		
	No Load	0.5	Amps		
INSULATION SYSTEM:	Class H Throughout				

3 Ø RATINGS (0.8 power factor) (Based on specified temperature rise at 40ºC ambient temperature)		60 Hz				50 Hz		
		110/190* 220/380	120/208* 240/416	139/240* 277/480	347/600	110/190* 220/380	120/208* 240/415	127/220* 254/440
150ºC Rise Ratings	kW	985	1080	1220	1220	944	944	944
	kVA	1231	1350	1525	1525	1180	1180	1180
125ºC Rise Ratings	kW	930	1020	1150	1150	888	888	888
	kVA	1163	1275	1438	1438	1110	1110	1110
105ºC Rise Ratings	kW	865	950	1050	1050	800	800	800
	kVA	1081	1188	1313	1313	1000	1000	1000
80ºC Rise Ratings	kW	750	824	900	900	708	708	708
	kVA	938	1030	1125	1125	885	885	885
REACTANCES (per unit, ±10%) (Based on full load at 125ºC Rise Rating		110/190* 220/380	120/208* 240/416	139/240* 277/480	347/600	110/190* 220/380	120/208* 240/415	127/220* 254/440
Synchronous		3.45	3.15	2.67	2.67	2.77	2.32	2.07
Transient		0.27	0.25	0.21	0.21	0.23	0.20	0.17
Subtransient		0.19	0.18	0.15	0.15	0.17	0.14	0.13
Negative Sequence		0.26	0.24	0.20	0.20	0.22	0.18	0.16
Zero Sequence		0.03	0.03	0.02	0.02	0.03	0.02	0.02
MOTOR STARTING		Broad Range			600	Broad Range		
Maximum kVA (90% Sustained Voltage)		4234			4234	2875		
TIME CONSTANTS (Sec)		Broad Range			600	Broad Range		
Transient		0.185			0.185	0.185		
Subtransient		0.025			0.025	0.025		
Open circuit		3.400			3.400	3.400		
DC		0.049			0.049	0.049		
WINDINGS (@ 20ºC)		Broad Range			600	Broad Range		
Stator Resistance (Ohms per phase)		0.0038			0.0052	0.0038		
Rotor Resistance (Ohms)		1.8900			1.8900	1.8900		
Number of Leads		6 (12 Optional)			6	6 (12 optional)		

* 12 lead reconnectible option is required to obtain low (parallel wye) voltages.

Exhaust Emission Data Sheet
1000DQFAD
60 Hz Diesel Generator Set

Engine Information:

Model:	Cummins Inc. QST30-G5 NR2	Bore:	5.51 in. (139 mm)
Type:	4 Cycle, 50°V, 12 Cylinder Diesel	Stroke:	6.5 in. (165 mm)
Aspiration:	Turbocharged and Low Temperature aftercooled	Displacement:	1860 cu. in. (30.4 liters)
Compression Ratio:	14.7:1		
Emission Control Device:	Aftercooled (Air-to-Air)		

	1/4	1/2	3/4	Full	Full	
PERFORMANCE DATA	**Standby**	**Standby**	**Standby**	**Standby**	**Prime**	
BHP @ 1800 RPM (60 Hz)	371	741	1112	1482	1322	
Fuel Consumption (gal/Hr)	19.1	35.8	54.1	72.2	63.9	
Exhaust Gas Flow (CFM)	2780	4500	6370	7540	6950	
Exhaust Gas Temperature (°F)	620	760	814	890	873	
EXHAUST EMISSION DATA						
HC (Total Unburned Hydrocarbons)	0.12	0.10	0.08	0.07	0.08	
NOx (Oxides of Nitrogen as NO2)	4.17	5.20	3.87	3.95	4.00	
CO (carbon Monoxide)	0.66	0.36	0.48	0.66	0.58	
PM (Particular Matter)	0.19	0.15	0.12	0.11	0.11	
SO2 (Sulfur Dioxide)	0.11	0.10	0.10	0.11	0.10	
Smoke (Bosch)	0.88	0.80	0.79	0.73	0.75	
All Values are Grams/HP-Hour, Smoke is Bosch #						

TEST CONDITIONS

Data was recorded during steady-state rated engine speed (± 25 RPM) with full load (±2%). Pressures, temperatures, and emission rates were stabilized.

Fuel Specification:	46.5 Cetane Number, 0.035 Wt.% Sulfur; Reference ISO8178-5, 40CFR86.1313-98 Type 2-D and ASTM D975 No. 2-D.
Fuel Temperature:	99 ± 9 °F (at fuel pump inlet)
Intake Air Temperature:	77 ± 9 °F
Barometric Pressure:	29.6 ± 1 in. Hg
Humidity:	NOx measurement corrected to 75 grains H2O/lb dry air
Reference Standard:	ISO 8178

The NOx, HC, CO and PM emission data tabulated here were taken from a single engine under the test conditions shown above. Data for the other components are estimated. These data are subjected to instrumentation and engine-to-engine variability. Field emission test data are not guaranteed to these levels. Actual field test results may vary due to test site conditions, installation, fuel specification, test procedures and instrumentation. Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may results in elevated emission levels.

EPA Tier 2 Exhaust Emission Compliance Statement 1000DQFAD

60 Hz Diesel Generator Set

Compliance Information:

The engine used in this generator set complies with the Tier 2 emissions limits of U.S EPA New Source Performance Standards for Stationary Emergency engines under the provisions of 40 CFR 60 Subpart IIII when tested per ISO 8178 D2.

Engine Manufacturer:	Cummins Inc
EPA Certificate Number:	CEX-STATCI-11-05
Effective Date:	06/08/2010
Date Issued:	06/08/2010
EPA Diesel Engine Family:	BCEXL030.AAD
CARB Executive Order:	

Engine Information:

Model:	Cummins Inc QST30-G5 NR2	Bore:	5.51 in. (140 mm)
Engine Nameplate HP:	1490		
Type:	4 Cycle, 50°V, 12 Cylinder Diesel	Stroke:	6.5 in. (165 mm)
Aspiration:	Turbocharged and Low Temperature Aftercooled (Air-to-Air)	Displacement:	1860 cu. in. (30.5 liters)
Compression Ratio:	14.7:1		
Emission Control Device:	Turbocharged and Low Temperature Aftercooled(Air-to-Air)		

U.S. Environmental Protection Agency NSPS Stationary Emergency Tier 2 Limits

(All values are Grams per HP-Hour)

COMPONENT	
NOx + HC (Oxides of Nitrogen as NO2 + Non Methane Hydrocarbons)	4.77
CO (Carbon Monoxide)	2.61
PM (Particulate Matter)	0.15

Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may result in elevated emission levels.

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: Majorsville Station	2. Tank Name Methanol Tank
2. Emission Unit ID number: T11-T14	3. Emission Point ID number: T11-T14
5. Date Installed , Modified or Relocated *(for existing tanks)* Was the tank manufactured after August 23, 2011 and on or before September 18, 2015? ☐ Yes ☐ No Was the tank manufactured after September 18, 2015? ☐ Yes ☐ No	6. Type of change: ☒ New construction ☐ New stored material ☐ Other ☐ Relocation
7A. Description of Tank Modification *(if applicable)*	
7B. Will more than one material be stored in this tank? *If so, a separate form must be completed for each material.* ☐ Yes ☒ No	
7C. Was USEPA Tanks simulation software utilized? ☒ Yes ☐ No ***If Yes, please provide the appropriate documentation and items 8-42 below are not required.***	

TANK INFORMATION

8. Design Capacity *(specify barrels or gallons).* Use the internal cross-sectional area multiplied by internal height.	
9A. Tank Internal Diameter (ft.)	9B. Tank Internal Height (ft.)
10A. Maximum Liquid Height (ft.)	10B. Average Liquid Height (ft.)
11A. Maximum Vapor Space Height (ft.)	11B. Average Vapor Space Height (ft.)
12. Nominal Capacity *(specify barrels or gallons).* This is also known as "working volume".	
13A. Maximum annual throughput (gal/yr)	13B. Maximum daily throughput (gal/day)
14. Number of tank turnovers per year	15. Maximum tank fill rate (gal/min)
16. Tank fill method ☐ Submerged ☐ Splash ☐ Bottom Loading	
17. Is the tank system a variable vapor space system? ☐ Yes ☐ No If yes, (A) What is the volume expansion capacity of the system (gal)? (B) What are the number of transfers into the system per year?	
18. Type of tank (check all that apply): ☐ Fixed Roof ☐ vertical ☐ horizontal ☐ flat roof ☐ cone roof ☐ dome roof ☐ other (describe) ☐ External Floating Roof ☐ pontoon roof ☐ double deck roof ☐ Domed External (or Covered) Floating Roof ☐ Internal Floating Roof ☐ vertical column support ☐ self-supporting ☐ Variable Vapor Space ☐ lifter roof ☐ diaphragm ☐ Pressurized ☐ spherical ☐ cylindrical ☐ Other (describe)	

PRESSURE/VACUUM CONTROL DATA

19. Check as many as apply:

☐ Does Not Apply ☐ Rupture Disc (psig)

☐ Inert Gas Blanket of _____ ☐ Carbon Adsorption[1]

☐ Vent to Vapor Combustion Device[1] (vapor combustors, flares, thermal oxidizers, enclosed combustors)

☐ Conservation Vent (psig) ☐ Condenser[1]

Vacuum Setting Pressure Setting

☐ Emergency Relief Valve (psig)

Vacuum Setting Pressure Setting

☐ Thief Hatch Weighted ☐ Yes ☐ No

[1] Complete appropriate Air Pollution Control Device Sheet

20. Expected Emission Rate (submit Test Data or Calculations here or elsewhere in the application).

Material Name	**Flashing Loss**		**Working/ Breathing Loss**		**Total Emissions Loss**		**Estimation Method[1]**
	lb/hr	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	
VOC'							

[1] EPA = EPA Emission Factor, MB = Material Balance, SS = Similar Source, ST = Similar Source Test, Throughput Data, O = Other (specify)
Remember to attach emissions calculations, including TANKS Summary Sheets and other modeling summary sheets if applicable.

TANK CONSTRUCTION AND OPERATION INFORMATION		
21. Tank Shell Construction: ☐ Riveted ☐ Gunite lined ☐ Epoxy-coated rivets ☐ Other (describe) Welded		
21A. Shell Color:	21B. Roof Color:	21C. Year Last Painted:
22. Shell Condition (if metal and unlined): ☐ No Rust ☐ Light Rust ☐ Dense Rust ☐ Not applicable		
22A. Is the tank heated? ☐ Yes ☐ No	22B. If yes, operating temperature:	22C. If yes, how is heat provided to tank?
23. Operating Pressure Range (psig): **Must be listed for tanks using VRUs with closed vent system.**		

24. Is the tank a **Vertical Fixed Roof Tank**? ☐ Yes ☐ No	24A. If yes, for dome roof provide radius (ft):	24B. If yes, for cone roof, provide slop (ft/ft):

25. Complete item 25 for **Floating Roof Tanks** ☐ Does not apply ☒

25A. Year Internal Floaters Installed:

25B. Primary Seal Type *(check one):* ☐ Metallic (mechanical) shoe seal ☐ Liquid mounted resilient seal ☐ Vapor mounted resilient seal ☐ Other (describe):

25C. Is the Floating Roof equipped with a secondary seal? ☐ Yes ☐ No

25D. If yes, how is the secondary seal mounted? *(check one)* ☐ Shoe ☐ Rim ☐ Other (describe):

25E. Is the floating roof equipped with a weather shield? ☐ Yes ☐ No

25F. Describe deck fittings:

26. Complete the following section for **Internal Floating Roof Tanks** ☐ Does not apply

26A. Deck Type: ☐ Bolted ☐ Welded	26B. For bolted decks, provide deck construction:

26C. Deck seam. Continuous sheet construction:
☐ 5 ft. wide ☐ 6 ft. wide ☐ 7 ft. wide ☐ 5 x 7.5 ft. wide ☐ 5 x 12 ft. wide ☐ 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? ☐ Yes ☐ No

28. Closed Vent System with Enclosed Combustor? ☐ Yes ☐ No

SITE INFORMATION

29. Provide the city and state on which the data in this section are based:

30. Daily Avg. Ambient Temperature (°F):	31. Annual Avg. Maximum Temperature (°F):
32. Annual Avg. Minimum Temperature (°F):	33. Avg. Wind Speed (mph):
34. Annual Avg. Solar Insulation Factor (BTU/ft^2-day):	35. Atmospheric Pressure (psia):

LIQUID INFORMATION

36. Avg. daily temperature range of bulk liquid (°F):	36A. Minimum (°F):	36B. Maximum (°F):
37. Avg. operating pressure range of tank (psig):	37A. Minimum (psig):	37B. Maximum (psig):

38A. Minimum liquid surface temperature (°F):	38B. Corresponding vapor pressure (psia):
39A. Avg. liquid surface temperature (°F):	39B. Corresponding vapor pressure (psia):
40A. Maximum liquid surface temperature (°F):	40B. Corresponding vapor pressure (psia):

41. Provide the following for each liquid or gas to be stored in the tank. Add additional pages if necessary. SEE PROMAX MODEL IN CALCULATIONS.

41A. Material name and composition:			
41B. CAS number:			
41C. Liquid density (lb/gal):			
41D. Liquid molecular weight (lb/lb-mole):			
41E. Vapor molecular weight (lb/lb-mole):			
41F. Maximum true vapor pressure (psia):			
41G. Maximum Reid vapor pressure (psia):			
41H. Months Storage per year. From: To:			
42. Final maximum gauge pressure and temperature prior to transfer into tank used as inputs into flashing emission calculations.			

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: Majorsville Station	2. Tank Name Lube Oil Tank
2. Emission Unit ID number: T15-T18	3. Emission Point ID number: T15-T18
5. Date Installed , Modified or Relocated *(for existing tanks)* Was the tank manufactured after August 23, 2011 and on or before September 18, 2015? ☐ Yes ☐ No Was the tank manufactured after September 18, 2015? ☐ Yes ☐ No	6. Type of change: ☒ New construction ☐ New stored material ☐ Other ☐ Relocation
7A. Description of Tank Modification *(if applicable)*	
7B. Will more than one material be stored in this tank? *If so, a separate form must be completed for each material.* ☐ Yes ☒ No	
7C. Was USEPA Tanks simulation software utilized? ☒ Yes ☐ No ***If Yes, please provide the appropriate documentation and items 8-42 below are not required.***	

TANK INFORMATION

8. Design Capacity *(specify barrels or gallons).* Use the internal cross-sectional area multiplied by internal height.	
9A. Tank Internal Diameter (ft.)	9B. Tank Internal Height (ft.)
10A. Maximum Liquid Height (ft.)	10B. Average Liquid Height (ft.)
11A. Maximum Vapor Space Height (ft.)	11B. Average Vapor Space Height (ft.)
12. Nominal Capacity *(specify barrels or gallons).* This is also known as "working volume".	
13A. Maximum annual throughput (gal/yr)	13B. Maximum daily throughput (gal/day)
14. Number of tank turnovers per year	15. Maximum tank fill rate (gal/min)
16. Tank fill method ☐ Submerged ☐ Splash ☐ Bottom Loading	
17. Is the tank system a variable vapor space system? ☐ Yes ☐ No If yes, (A) What is the volume expansion capacity of the system (gal)? (B) What are the number of transfers into the system per year?	
18. Type of tank (check all that apply): ☐ Fixed Roof ☐ vertical ☐ horizontal ☐ flat roof ☐ cone roof ☐ dome roof ☐ other (describe) ☐ External Floating Roof ☐ pontoon roof ☐ double deck roof ☐ Domed External (or Covered) Floating Roof ☐ Internal Floating Roof ☐ vertical column support ☐ self-supporting ☐ Variable Vapor Space ☐ lifter roof ☐ diaphragm ☐ Pressurized ☐ spherical ☐ cylindrical ☐ Other (describe)	

PRESSURE/VACUUM CONTROL DATA

19. Check as many as apply:

☐ Does Not Apply ☐ Rupture Disc (psig)

☐ Inert Gas Blanket of _____ ☐ Carbon Adsorption[1]

☐ Vent to Vapor Combustion Device[1] (vapor combustors, flares, thermal oxidizers, enclosed combustors)

☐ Conservation Vent (psig) ☐ Condenser[1]

Vacuum Setting Pressure Setting

☐ Emergency Relief Valve (psig)

Vacuum Setting Pressure Setting

☐ Thief Hatch Weighted ☐ Yes ☐ No

[1] Complete appropriate Air Pollution Control Device Sheet

20. Expected Emission Rate (submit Test Data or Calculations here or elsewhere in the application).

Material Name	**Flashing Loss**		**Working/ Breathing Loss**		**Total Emissions Loss**		**Estimation Method[1]**
	lb/hr	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	
VOC'							

[1] EPA = EPA Emission Factor, MB = Material Balance, SS = Similar Source, ST = Similar Source Test, Throughput Data, O = Other (specify)
Remember to attach emissions calculations, including TANKS Summary Sheets and other modeling summary sheets if applicable.

TANK CONSTRUCTION AND OPERATION INFORMATION		
21. Tank Shell Construction: ☐ Riveted ☐ Gunite lined ☐ Epoxy-coated rivets ☐ Other (describe) Welded		
21A. Shell Color:	21B. Roof Color:	21C. Year Last Painted:
22. Shell Condition (if metal and unlined): ☐ No Rust ☐ Light Rust ☐ Dense Rust ☐ Not applicable		
22A. Is the tank heated? ☐ Yes ☐ No	22B. If yes, operating temperature:	22C. If yes, how is heat provided to tank?
23. Operating Pressure Range (psig): **Must be listed for tanks using VRUs with closed vent system.**		

24. Is the tank a **Vertical Fixed Roof Tank**? ☐ Yes ☐ No	24A. If yes, for dome roof provide radius (ft):	24B. If yes, for cone roof, provide slop (ft/ft):

25. Complete item 25 for **Floating Roof Tanks** ☐ Does not apply ☒

25A. Year Internal Floaters Installed:

25B. Primary Seal Type *(check one):* ☐ Metallic (mechanical) shoe seal ☐ Liquid mounted resilient seal ☐ Vapor mounted resilient seal ☐ Other (describe):

25C. Is the Floating Roof equipped with a secondary seal? ☐ Yes ☐ No

25D. If yes, how is the secondary seal mounted? *(check one)* ☐ Shoe ☐ Rim ☐ Other (describe):

25E. Is the floating roof equipped with a weather shield? ☐ Yes ☐ No

25F. Describe deck fittings:

26. Complete the following section for **Internal Floating Roof Tanks** ☐ Does not apply

26A. Deck Type: ☐ Bolted ☐ Welded	26B. For bolted decks, provide deck construction:

26C. Deck seam. Continuous sheet construction:
☐ 5 ft. wide ☐ 6 ft. wide ☐ 7 ft. wide ☐ 5 x 7.5 ft. wide ☐ 5 x 12 ft. wide ☐ 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? ☐ Yes ☐ No

28. Closed Vent System with Enclosed Combustor? ☐ Yes ☐ No

SITE INFORMATION

29. Provide the city and state on which the data in this section are based:

30. Daily Avg. Ambient Temperature (°F):	31. Annual Avg. Maximum Temperature (°F):
32. Annual Avg. Minimum Temperature (°F):	33. Avg. Wind Speed (mph):
34. Annual Avg. Solar Insulation Factor (BTU/ft^2-day):	35. Atmospheric Pressure (psia):

LIQUID INFORMATION

36. Avg. daily temperature range of bulk liquid (°F):	36A. Minimum (°F):	36B. Maximum (°F):
37. Avg. operating pressure range of tank (psig):	37A. Minimum (psig):	37B. Maximum (psig):

38A. Minimum liquid surface temperature (°F):	38B. Corresponding vapor pressure (psia):
39A. Avg. liquid surface temperature (°F):	39B. Corresponding vapor pressure (psia):
40A. Maximum liquid surface temperature (°F):	40B. Corresponding vapor pressure (psia):

41. Provide the following for each liquid or gas to be stored in the tank. Add additional pages if necessary. SEE PROMAX MODEL IN CALCULATIONS.

41A. Material name and composition:			
41B. CAS number:			
41C. Liquid density (lb/gal):			
41D. Liquid molecular weight (lb/lb-mole):			
41E. Vapor molecular weight (lb/lb-mole):			
41F. Maximum true vapor pressure (psia):			
41G. Maximum Reid vapor pressure (psia):			
41H. Months Storage per year. From: To:			
42. Final maximum gauge pressure and temperature prior to transfer into tank used as inputs into flashing emission calculations.			

STORAGE TANK DATA TABLE

List all deminimis storage tanks (i.e. lube oil, glycol, diesel etc.)

Source ID #[1]	Status[2]	Content[3]	Volume[4]
T11	New	Methanol	330 gal.
T12	New	Methanol	330 gal.
T13	New	Methanol	330 gal.
T14	New	Methanol	330 gal.
T15	New	Lube Oil	500 gal.
T16	New	Lube Oil	500 gal.
T17	New	Lube Oil	500 gal.
T18	New	Lube Oil	500 gal.

1. Enter the appropriate Source Identification Numbers (Source ID #) for each storage tank located at the well site. Tanks should be designated T01, T02, T03, etc.
2. Enter storage tank Status using the following:
   - EXIST Existing Equipment
   - NEW Installation of New Equipment
   - REM Equipment Removed
3. Enter storage tank content such as condensate, pipeline liquids, glycol (DEG or TEG), lube oil, diesel, mercaptan etc.
4. Enter the maximum design storage tank volume in gallons.

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Majorsville - T11-T14 - Methanol Tank
City:	Majorsville
State:	West Virginia
Company:	CONE Gathering LLC Horizontal Tank
Type of Tank:	CONE - Majorsville Station
Description:	

Tank Dimensions

Shell Length (ft):	5.50
Diameter (ft):	3.25
Volume (gallons):	330.00
Turnovers:	5.00
Net Throughput(gal/yr):	1,650.00
Is Tank Heated (y/n):	N
Is Tank Underground (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Light
Shell Condition	Good

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meterological Data used in Emissions Calculations: Pittsburgh, Pennsylvania (Avg Atmospheric Pressure = 14.11 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Majorsville - T11-T14 - Methanol Tank - Horizontal Tank
Majorsville, West Virginia

		Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp	Vapor Pressure (psia)			Vapor Mol.	Liquid Mass	Vapor Mass	Mol.	Basis for Vapor Pressure
Mixture/Component	Month	Avg.	Min.	Max.	(deg F)	Avg.	Min.	Max.	Weight.	Fract.	Fract.	Weight	Calculations
Methyl alcohol	All	56.69	48.70	64.69	52.55	1.2985	1.0009	1.6690	32.0400			32.04	Option 2: A=7.897, B=1474.08, C=229.13

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Majorsville - T11-T14 - Methanol Tank - Horizontal Tank
Majorsville, West Virginia

Annual Emission Calcaulations	
Standing Losses (lb):	7.8368
Vapor Space Volume (cu ft):	29.0616
Vapor Density (lb/cu ft):	0.0075
Vapor Space Expansion Factor:	0.1094
Vented Vapor Saturation Factor:	0.8994
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	29.0616
Tank Diameter (ft):	3.2500
Effective Diameter (ft):	4.7719
Vapor Space Outage (ft):	1.6250
Tank Shell Length (ft):	5.5000
Vapor Density	
Vapor Density (lb/cu ft):	0.0075
Vapor Molecular Weight (lb/lb-mole):	32.0400
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	1.2985
Daily Avg. Liquid Surface Temp. (deg. R):	516.3645
Daily Average Ambient Temp. (deg. F):	50.3083
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	512.2183
Tank Paint Solar Absorptance (Shell):	0.5400
Daily Total Solar Insulation Factor (Btu/sqft day):	1,202.9556
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.1094
Daily Vapor Temperature Range (deg. R):	31.9767
Daily Vapor Pressure Range (psia):	0.6682
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	1.2985
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	1.0009
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	1.6690
Daily Avg. Liquid Surface Temp. (deg R):	516.3645
Daily Min. Liquid Surface Temp. (deg R):	508.3704
Daily Max. Liquid Surface Temp. (deg R):	524.3587
Daily Ambient Temp. Range (deg. R):	19.1500
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.8994
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	1.2985
Vapor Space Outage (ft):	1.6250
Working Losses (lb):	1.6345
Vapor Molecular Weight (lb/lb-mole):	32.0400
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	1.2985
Annual Net Throughput (gal/yr.):	1,650.0000
Annual Turnovers:	5.0000
Turnover Factor:	1.0000
Tank Diameter (ft):	3.2500
Working Loss Product Factor:	1.0000
Total Losses (lb):	9.4712

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Majorsville - T11-T14 - Methanol Tank - Horizontal Tank
Majorsville, West Virginia

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Methyl alcohol	1.63	7.84	9.47

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Majorsville - T15-T18 - Lube Oil Tank
City:	Majorsville
State:	West Virginia
Company:	CONE Gathering LLC Horizontal
Type of Tank:	Tank
Description:	CONE - Majorsville Station

Tank Dimensions

Shell Length (ft):	5.50
Diameter (ft):	4.00
Volume (gallons):	500.00
Turnovers:	0.00
Net Throughput(gal/yr):	2,500.00
Is Tank Heated (y/n):	N
Is Tank Underground (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Light
Shell Condition	Good

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meterological Data used in Emissions Calculations: Pittsburgh, Pennsylvania (Avg Atmospheric Pressure = 14.11 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Majorsville - T15-T18 - Lube Oil Tank - Horizontal Tank
Majorsville, West Virginia

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Distillate fuel oil no. 2	All	56.69	48.70	64.69	52.55	0.0058	0.0043	0.0077	130.0000			188.00	Option 1: VP50 = .0045 VP60 = .0065

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Majorsville - T15-T18 - Lube Oil Tank - Horizontal Tank
Majorsville, West Virginia

Annual Emission Calcaulations	
Standing Losses (lb):	0.1274
Vapor Space Volume (cu ft):	44.0223
Vapor Density (lb/cu ft):	0.0001
Vapor Space Expansion Factor:	0.0579
Vented Vapor Saturation Factor:	0.9994
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	44.0223
Tank Diameter (ft):	4.0000
Effective Diameter (ft):	5.2939
Vapor Space Outage (ft):	2.0000
Tank Shell Length (ft):	5.5000
Vapor Density	
Vapor Density (lb/cu ft):	0.0001
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0058
Daily Avg. Liquid Surface Temp. (deg. R):	516.3645
Daily Average Ambient Temp. (deg. F):	50.3083
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	512.2183
Tank Paint Solar Absorptance (Shell):	0.5400
Daily Total Solar Insulation Factor (Btu/sqft day):	1,202.9556
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0579
Daily Vapor Temperature Range (deg. R):	31.9767
Daily Vapor Pressure Range (psia):	0.0034
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0058
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0043
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0077
Daily Avg. Liquid Surface Temp. (deg R):	516.3645
Daily Min. Liquid Surface Temp. (deg R):	508.3704
Daily Max. Liquid Surface Temp. (deg R):	524.3587
Daily Ambient Temp. Range (deg. R):	19.1500
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9994
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	0.0058
Vapor Space Outage (ft):	2.0000
Working Losses (lb):	0.0452
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0058
Annual Net Throughput (gal/yr.):	2,500.0000
Annual Turnovers:	0.0000
Turnover Factor:	1.0000
Tank Diameter (ft):	4.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	0.1726

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Majorsville - T15-T18 - Lube Oil Tank - Horizontal Tank
Majorsville, West Virginia

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	0.05	0.13	0.17

SMALL HEATERS AND REBOILERS NOT SUBJECT TO 40CFR60 SUBPART DC DATA SHEET

Complete this data sheet for each small heater and reboiler not subject to 40CFR60 Subpart Dc at the facility. ***The Maximum Design Heat Input (MDHI) must be less than 10 MMBTU/hr.***

Emission Unit ID#[1]	Emission Point ID#[2]	Emission Unit Description (manufacturer, model #)	Year Installed/ Modified	Type[3] and Date of Change	Maximum Design Heat Input (MMBTU/hr)[4]	Fuel Heating Value (BTU/scf)[5]
BLR-2	BLR-2	Condensate Stabilization Heater	2012/ 2017	Modified	1.43 MMBtu/hr	1000

1 Enter the appropriate Emission Unit (or Source) identification number for each fuel burning unit located at the production pad. Gas Producing Unit Burners should be designated GPU-1, GPU-2, etc. Heater Treaters should be designated HT-1, HT-2, etc. Heaters or Line Heaters should be designated LH-1, LH-2, etc. For sources, use 1S, 2S, 3S…or other appropriate designation. Enter glycol dehydration unit Reboiler Vent data on the Glycol Dehydration Unit Data Sheet.

2 Enter the appropriate Emission Point identification numbers for each fuel burning unit located at the production pad. Gas Producing Unit Burners should be designated GPU-1, GPU-2, etc. Heater Treaters should be designated HT-1, HT-2, etc. Heaters or Line Heaters should be designated LH-1, LH-2, etc. For emission points, use 1E, 2E, 3E…or other appropriate designation.

3 New, modification, removal

4 Enter design heat input capacity in MMBtu/hr.

5 Enter the fuel heating value in BTU/standard cubic foot.

ATTACHMENT M

AIR POLLUTION CONTROL DEVICE

NOT APPLICABLE: APCD SHEETS INCLUDED IN PREVIOUS APPLICATION

45CSR13 Permit Modification Application

Majorsville Compressor Station
Dallas, West Virginia

CONE Gathering LLC
1000 Consol Energy Drive
Canonsburg, PA 15317

2017

ATTACHMENT N

SUPPORTING EMISSIONS CALCULATIONS

45CSR13 Permit Modification Application

Majorsville Compressor Station
Dallas, West Virginia

CONE Gathering LLC
1000 Consol Energy Drive
Canonsburg, PA 15317

2017

Table 1. Annual Potential To Emit (PTE) Summary
CONE Gathering LLC - Majorsville Station

Proposed Modifications to Rule 13 Permit

Source	PM/PM10/PM2.5	SO2	NOx	CO	VOC	Formaldehyde	Total HAPs	CO2e
Engine - EG2 (ton/yr)	0.12	0.09	3.92	2.14	0.91	0.00	0.01	305.11
BLR-2 - Condensate Stabilization Heater (ton/yr)	0.05	0.00	0.63	0.53	0.03	0.00	0.01	732.88
Misc. Tank - T11-T8 (ton/yr)	-	-	-	-	0.02	-	-	-
Fugitive Component Leaks (VRU-5) (ton/yr)	-	-	-	-	0.01	-	0.00	1.34
Total Emissions (ton/yr)	0.17	0.09	4.54	2.67	0.98	0.00	0.02	1039.32
Total Emissions (lb/hr)	0.04	0.02	1.04	0.61	0.22	0.00	0.01	237.29

Current Rule 13 Permit Allowables (R13-3018D)

Source	PM/PM10/PM2.5	SO2	NOx	CO	VOC	Formaldehyde	Total HAPs	CO2e
Caterpillar 3608 RICE - E4 (ton/yr)	0.69	0.04	11.44	4.40	7.21	1.45	2.81	8078.00
Emergency Generator - EG-1 (ton/yr)	0.02	0.01	1.95	0.12	0.04	< 0.01	< 0.01	195.00
Glycol Dehy Flare - F-1 (ton/yr)	0.17	0.01	2.26	1.90	8.55	<0.01	0.68	3680.00
Glycol Dehy Flare - F-2 (ton/yr)	0.17	0.01	2.26	1.90	8.55	<0.01	0.68	3680.00
Glycol Dehy Flare - F-3 (ton/yr)	0.17	0.01	2.26	1.90	8.55	<0.01	0.68	3680.00
Glycol Dehy Reboiler - BLR-1 (ton/yr)	0.02	<0.01	1.02	0.85	0.06	<0.01	0.02	1467.00
Condensate Reboiler - BLR-2 (ton/yr)	0.02	<0.01	0.27	0.22	0.01	<0.01	0.01	385.00
Glycol Dehy Reboiler - BLR-3 (ton/yr)	0.02	<0.01	1.02	0.85	0.06	<0.01	0.02	1467.00
Glycol Dehy Reboiler - BLR-4 (ton/yr)	0.02	<0.01	1.02	0.85	0.06	<0.01	0.02	1467.00
VRU - Tanks (ton/yr)	0.00	0.00	0.00	0.00	42.20	0.00	1.19	0.00
Hot Oil Heater - HTR-2 (ton/yr)	0.05	0.02	2.54	2.13	0.14	<0.01	0.05	3658.00
Emergency Blowdown Flare - BDF-1 (ton/yr)	<0.01	<0.01	1.05	4.77	2.11	<0.01	0.03	2094.00
Fugitive Component Leaks (ton/yr)	0.00	0.00	0.00	0.00	10.82	<0.01	3.96	261.00
Total Emissions (ton/yr)	1.35	0.10	27.09	19.89	88.36	1.45	10.15	30112.00
Total Emissions (lb/hr)	0.31	0.02	6.18	4.54	20.17	0.33	2.32	6874.89

Proposed Rule 13 Permit Allowables (R13-3018E)

Source	PM/PM10/PM2.5	SO2	NOx	CO	VOC	Formaldehyde	Total HAPs	CO2e
Caterpillar 3608 RICE - E4 (ton/yr)	0.69	0.04	11.44	4.40	7.21	1.45	2.81	8078.00
Emergency Generator - EG-2 (ton/yr)	0.12	0.09	3.92	2.14	0.91	0.00	0.01	305.11
Glycol Dehy Flare - F-1 (ton/yr)	0.17	0.01	2.26	1.90	8.55	<0.01	0.68	3680.00
Glycol Dehy Flare - F-2 (ton/yr)	0.17	0.01	2.26	1.90	8.55	<0.01	0.68	3680.00
Glycol Dehy Flare - F-3 (ton/yr)	0.17	0.01	2.26	1.90	8.55	<0.01	0.68	3680.00
Glycol Dehy Reboiler - BLR-1 (ton/yr)	0.02	<0.01	1.02	0.85	0.06	<0.01	0.02	1467.00
Condensate Reboiler - BLR-2 (ton/yr)	0.05	0.00	0.63	0.53	0.03	0.00	0.01	732.88
Glycol Dehy Reboiler - BLR-3 (ton/yr)	0.02	<0.01	1.02	0.85	0.06	<0.01	0.02	1467.00
Glycol Dehy Reboiler - BLR-4 (ton/yr)	0.02	<0.01	1.02	0.85	0.06	<0.01	0.02	1467.00
VRU - Tanks (ton/yr)	0.00	0.00	0.00	0.00	42.20	0.00	1.19	0.00
Hot Oil Heater - HTR-2 (ton/yr)	0.05	0.02	2.54	2.13	0.14	-	0.05	3658.00
Emergency Blowdown Flare - BDF-1 (ton/yr)	<0.01	<0.01	1.05	4.77	2.11	<0.01	0.03	2094.00
Misc. Tank - T11-T8 (ton/yr)	-	-	-	-	0.02	-	-	-
Fugitive Component Leaks (ton/yr)	0.00	0.00	0.00	0.00	10.83	<0.01	3.96	262.34
Total Emissions (ton/yr)	1.48	0.18	29.41	22.22	89.29	1.45	10.16	30571.32
Total Emissions (lb/hr)	0.34	0.04	6.72	5.07	20.39	0.33	2.32	6979.75

Proposed Difference of Emissions

Source	PM/PM10/PM2.5	SO2	NOx	CO	VOC	Formaldehyde	Total HAPs	CO2e
Total Emissions (ton/yr)	0.13	0.08	2.32	2.33	0.93	0.00	0.01	459.32
Total Emissions (lb/hr)	0.03	0.02	0.53	0.53	0.21	0.00	0.00	104.87

** Total VOC emissions include CH2O emissions

Table 2. Compression Ignition Engine (Diesel) Emissions (EG-2)
Cummins, Model #QST30-G5
CONE Gathering LLC - Majorsville Station

Pollutant	Emission Factor		PTE (lb/hr)		PTE (ton/yr)	
Criteria Pollutants						
PM/PM10/PM2.5	1.50E-01	g/hp-hr (1)	0.49	(a)	0.12	(c)
SO_2	1.10E-01	g/hp-hr (2)	0.36	(b)	0.09	(d)
NOx	4.77E+00	g/hp-hr (1)	15.67	(a)	3.92	(c)
CO	2.61E+00	g/hp-hr (1)	8.57	(a)	2.14	(c)
VOC	3.50E-01	lb/MMBtu (2)	3.65	(b)	0.91	(d)
Hazardous Air Pollutants						
1,3-Butadiene	3.91E-05	lb/MMBtu (3)	0.000	(b)	0.000	(d)
Acetaldehyde	7.67E-04	lb/MMBtu (3)	0.008	(b)	0.002	(d)
Acrolein	9.25E-05	lb/MMBtu (3)	0.001	(b)	0.000	(d)
Benzene	9.33E-04	lb/MMBtu (3)	0.010	(b)	0.002	(d)
Formaldehyde	1.18E-03	lb/MMBtu (3)	0.012	(b)	0.003	(d)
Naphthalene	9.71E-05	lb/MMBtu (3)	0.001	(b)	0.000	(d)
Toluene	4.09E-04	lb/MMBtu (3)	0.004	(b)	0.001	(d)
Xylenes	2.85E-04	lb/MMBtu (3)	0.003	(b)	0.001	(d)
Total HAPs			**0.040**		**0.010**	
Greenhouse Gas Emissions						
CO_2	116.89	lb/MMBtu (4)	1219.16	(b)	304.79	(d)
CH_4	2.2E-03	lb/MMBtu (4)	0.02	(b)	0.01	(d)
N_2O	2.2E-04	lb/MMBtu (4)	0.00	(b)	0.00	(d)
CO_2e (e)	-	-	1220.42		305.11	

Calculations:

(a) Hourly Emissions (lb/hr) = Emission factor (g/hp-hr) * (lbs/453.6 g) * Engine Power Output (hp)

(b) Hourly Emissions (lb/hr) = Emission factor (lb/MMBtu) * (1MMBtu/1000000 Btu) * Engine Power Output (hp) * Average BSFC (Btu/hp-hr)

(c) Annual emissions (tons/yr) = Emission factor (g/hp-hr) * (lbs/453.6 g) * Engine Power Output (hp) * Annual Hours of operation (hr/yr) * (1ton/2000lbs)

(d) Annual emissions (tons/yr) = Emission factor (lb/MMBtu) * (1MMBtu/1000000Btu) * Engine Power Output (hp) * Average BSFC (Btu/hp-hr) * Annual Hours of operation (hr/yr) * (1ton/2000lbs)

EMISSION INPUTS TABLE		
Engine Power Output (kW) =	1111	
Engine Power Output (hp) =	1,490	
Number of Engines =	1	
Average BSFC (BTU/HP-hr) =	7,000	(5)
Fuel Throughput (gal/hr) =	72.2	(6)
PTE Hours of Operation =	500	

(c) CO_2 equivalent = [(CO_2 emissions)*(GWP_{CO2})]+[(CH_4 emissions)*(GWP_{CH4})]+[(N_2O emissions)*(GWP_{N2O})]

Global Warming Potential (GWP)

CO_2	1	(7)
CH_4	25	(7)
N_2O	298	(7)

Notes:

(1) Emissions factors supplied from manufacturer's specifications sheets demonstrating unit is in compliance with 40 CFR 60 Subpart IIII

(2) AP-42, Chapter 3.3, Table 3.3-1. - *Emission Factors for Uncontrolled Gasoline and Diesel Industrial Engines* (10/96)

(3) AP-42, Chapter 3.3, Table 3.3-2. - *Speciated Organic Compoind Emission Factors for Uncontrolled Diesel Engines* (10/96)

(4) Emission factors are from 40 CFR 98, Subpart C, Table C-1 and C-2.

(5) Average BSFC supplied from AP-42, Chapter 3.3, Table 3.3-1. footnote C

(6) Fuel throughput supplied from manufacturer's specification sheets

(7) Global Warming Potentials obtained from 40 CFR 98, Subpart A, Table A-1

Table 3. Condensate Stabilizer Heater Emissions
(BLR-2) CONE Gathering LLC - Majorsville Station

Pollutant	Emission Factor		PTE (lb/hr)		PTE (ton/yr)	
Criteria Pollutants						
PM/PM10/PM2.5	7.6 lb/MMcf	(1)	0.01	(a)	0.05	(b)
SO_2	0.25 grains S / 100ft^3	(5)	0.00	(e)	0.00447	(f)
NOx	100 lb/MMcf	(2)	0.14	(a)	0.63	(b)
CO	84 lb/MMcf	(2)	0.12	(a)	0.53	(b)
VOC	5.5 lb/MMcf	(1)	0.01	(a)	0.03	(b)
Hazardous Air Pollutants						
Arsenic	2.00E-04 lb/MMcf	(3)	0.00	(a)	0.000	(b)
Benzene	2.10E-03 lb/MMcf	(4)	0.00	(a)	0.000	(b)
Beryllium	1.20E-05 lb/MMcf	(3)	0.00	(a)	0.000	(b)
Cadmium	1.10E-03 lb/MMcf	(3)	0.00	(a)	0.000	(b)
Chromium	1.40E-03 lb/MMcf	(3)	0.00	(a)	0.000	(b)
Cobalt	8.40E-05 lb/MMcf	(3)	0.00	(a)	0.000	(b)
Dichlorobenzene	1.20E-03 lb/MMcf	(4)	0.00	(a)	0.000	(b)
Formaldehyde	7.50E-02 lb/MMcf	(4)	0.00	(a)	0.000	(b)
Hexane	1.80E+00 lb/MMcf	(4)	0.00	(a)	0.011	(b)
Lead	5.00E-04 lb/MMcf	(3)	0.00	(a)	0.000	(b)
Manganese	3.80E-04 lb/MMcf	(3)	0.00	(a)	0.000	(b)
Mercury	2.60E-04 lb/MMcf	(3)	0.00	(a)	0.000	(b)
Naphthalene	6.10E-04 lb/MMcf	(4)	0.00	(a)	0.000	(b)
Nickel	2.10E-03 lb/MMcf	(3)	0.00	(a)	0.000	(b)
PAH/POM	1.29E-03 lb/MMcf	(4)	0.00	(a)	0.000	(b)
Selenium	2.40E-05 lb/MMcf	(3)	0.00	(a)	0.000	(b)
Toluene	3.40E-03 lb/MMcf	(4)	0.00	(a)	0.000	(b)
Total HAP			**0.00**		**0.012**	
Greenhouse Gas Emissions						
CO_2	116.89 lb/MMBtu	(6)	167.15	(c)	732.12	(d)
CH_4	2.2E-03 lb/MMBtu	(6)	0.00	(c)	0.01	(d)
N_2O	2.2E-04 lb/MMBtu	(6)	0.00	(c)	0.00	(d)
CO_2e[(g)]	- -		167.32		732.88	

Calculations:

LB/MMCF

(a) Hourly emissions (lb/hr) = Emission Factor (lb/MMcf) * Fuel Use (MMCF/yr) / Annual hours of operation (hr/yr)

(b) Annual emissions (ton/yr) = Emission Factor (lb/MMcf) * Fuel Use (MMcf/yr) * (1ton/2000lbs)

LB/MMBTU

(c) Hourly Emissions (lb/hr) = Emission Factor (lb/MMBtu) * Fuel Use (MMBtu/hr)

(d) Annual Emissions (ton/yr) = Emission Factor (lb/MMBtu) * Fuel Use (MMBtu/hr) * Hours of operation (hr/yr) * (1ton/2000lbs)

SO_2

(e) Hourly Emissions SO2 Caclulation (lb/hr) = (0.25 grain S/100ft3) * Fuel throughput (MMft3/yr) * (1000000ft3/1MMft3) / annual hours of operation (hr/yr) * (1lb/7000 grains) * (lbmol S/32.06 lb S) * (lbmol SO2/ lbmol S) *(64.07 lb SO2/lbmol SO2)

(f) Annual Emissions SO2 Caclulation (ton/yr) = (0.25 grain S/100ft3) * Fuel throughput (MMft3/yr) * (1000000ft3/1MMft3) * (1lb/7000 grains) * (lbmol S/32.06 lb S) * (lbmol SO2/ lbmol S) *(64.07 lb SO2/lbmol SO2) * (1ton/2000lbs)

EMISSION INPUTS TABLE	
Fuel Use (MMBtu/hr) =	1.4
Number of Units =	1
Hours of Operation (hr/yr)=	8760
MMBtu/MMcf=	1000
PTE Fuel Use (MMft3/yr) =	12.53

(g) CO_2 equivalent = [(CO_2 emissions)*(GWP_{CO2})]+[(CH_4 emissions)*(GWP_{CH4})]+[(N_2O emissions)*(GWP_{N2O})]

Global Warming Potential (GWP)

CO_2	1	(7)
CH_4	25	(7)
N_2O	298	(7)

Notes:

(1) AP-42, Chapter 1.4, Table 1.4-2. Emission Factors For Criteria Pollutants and Greenhouse Gases From Natural Gas Combustion, July 1998.

(2) AP-42, Chapter 1.4, Table 1.4-1. Emission Factors For Nitrogen Oxides (Nox) and Carbon Monoxide(CO) From Natural Gas Combustion, July 1998.

(3) AP-42, Chapter 1.4, Table 1.4-4. Emission Factors For Metals From Natural Gas Combustion, July 1998.

(4) AP-42, Chapter 1.4, Table 1.4-3. Emission Factors for Speciated Organic Compounds from Natural Gas Combustion, July 1998.

(5) AP-42, Chapter 5.3, Section 5.3.1

(6) Emission factors are from 40 CFR 98, Subpart C, Table C-1 and C-2.

(7) Global Warming Potentials obtained from 40 CFR 98, Subpart A, Table A-1

Table 4. Tank Emissions
CONE Gathering LLC - Majorsville Station

Emission Point	Tank Capacity (gal)	Tank Contents	Control Devices	Tank Throughput (bbls/day)	VOC Emission Factor (lbs/bbls)		VOC Emissions (lbs/yr)[(a)]	VOC Emissions (lb/hr)[(b)]	VOC Emissions (tons/yr)[(c)]
T11	330	Methanol Tank	None	0.11	2.41E-01	(1)	9.47	0.001	0.005
T12	330	Methanol Tank	None	0.11	2.41E-01	(1)	9.47	0.001	0.005
T13	330	Methanol Tank	None	0.11	2.41E-01	(1)	9.47	0.001	0.005
T14	330	Methanol Tank	None	0.11	2.41E-01	(1)	9.47	0.001	0.005
T15	500	Lube Oil Tank	None	0.16	2.86E-03	(1)	0.17	0.000	0.000
T16	500	Lube Oil Tank	None	0.16	2.86E-03	(1)	0.17	0.000	0.000
T17	500	Lube Oil Tank	None	0.16	2.86E-03	(1)	0.17	0.000	0.000
T18	500	Lube Oil Tank	None	0.16	2.86E-03	(1)	0.17	0.000	0.000
Totals							**38.56**	**0.00**	**0.02**

Calculations:

(a) VOC Emissions (lb/day) = Tank Throughput (bbls/day) * VOC Emission Factor (lbs/bbls)

(b) VOC Emissions (lb/hr) = VOC Emissions (lbs/yr) * (yr/8760hr)

(c) VOC Emissions (ton/yr) = VOC Emissions (lbs/yr) * (1ton/2000lbs)

Notes:

(1) VOC emission factor includes Working/Breathing losses as calculated from TANKS 4.0.9.d

Table 5. Fugitive Leak Emissions
CONE Gathering LLC - Majorsville Station

Pollutant	Emission Factor[1]		Total Gas Emissions[a] Gas Service (tons/yr)	PTE VOC emissions (ton/yr)	PTE CO_2e emissions (ton/yr)	PTE Total HAPs emissions (ton/yr)
Compressors	1.9E-02	lb/hr*source	0.08	0.01	1.34	0.00
Total	-	-	0.08	0.01	1.34	0.00

Pollutant	PTE Benzene emissions (ton/yr)	PTE Toluene emissions (ton/yr)	PTE Ethylbenzene emissions (ton/yr)	PTE Xylenes emissions (ton/yr)	PTE n-Hexane emissions (ton/yr)
Compressors	1.70E-06	7.64E-06	0.00E+00	0.00E+00	1.87E-04
Total	0.00	0.00	0.00	0.00	0.00

Calculations:

(a) Annual emissions (tons/yr) = [Emission Factor (lb/hr*source)] x [Number of Sources] x [Hours of Operation per Year] x [ton/2000lb]

WET GAS INPUTS TABLE	
Gas Stream Components	**Wt Percent**
Methane	62.99%
Ethane	20.82%
VOC[3]	15.65%
Benzene	0.00%
Toluene	0.01%
Ethylbenzene	0.00%
Xylenes	0.00%
n-Hexane	0.22%

Number of Components in Gas Service

Compressors= 1

Maximum Hour of Operation = 8,760

Global Warming Potential (GWP) [5]

CO_2	1
CH_4	25
N_2O	298

(1) Emission factors from 1995 EPA Protocol for Equipment Leak Emission Estimates, Table 2-4 Oil and Gas Production

(2) Connectors is assumed to include flange connections in the total count

(3) Worst case VOC wt % assumption for station based on gas sample analysis from facility

(4) *Default Average Component Counts for Major Onshore Natural Gas Production Equipment* from 40 CFR 98, Subpart W, Table W-1B

(5) Global Warming Potentials obtained from 40 CFR 98, Subpart A, Table A-1

Gas Analysis

Higher Heating Value 1,231 btu/scf

Constituent	Concentration (Vol %)	Molecular Weight	Molar Weight	Average Weight Fraction	Natural Gas Stream Speciation (Wt. %)
Carbon Dioxide	0.1390%	44.01	0.06	0.00	0.30
Nitrogen	0.3490%	14.01	0.05	0.00	0.24
Methane	79.2756%	16.04	12.72	0.63	62.99
Ethane	13.9757%	30.07	4.20	0.21	20.82
Propane	4.1061%	44.10	1.81	0.09	8.97
Isobutane	0.5241%	58.12	0.30	0.02	1.51
n-Butane	0.9673%	58.12	0.56	0.03	2.78
Isopentane	0.2300%	72.15	0.17	0.01	0.82
n-Pentane	0.2824%	72.15	0.20	0.01	1.01
Cyclopentane	0.0064%	70.1	0.00	0.00	0.02
n-Hexane*	0.0526%	86.18	0.05	0.00	0.22
Cyclohexane	0.0050%	84.16	0.00	0.00	0.02
Other Hexanes	0.0245%	86.18	0.02	0.00	0.10
Heptanes	0.0189%	100.20	0.02	0.00	0.09
Methylcyclohexane	0.0077%	98.19	0.01	0.00	0.04
2,2,4-Trimethylpentane*	0.0000%	114.23	0.00	0.00	0.00
Benzene*	0.0010%	78.11	0.00	0.00	0.00
Toluene*	0.0020%	92.14	0.00	0.00	0.01
Ethylbenzene*	0.0000%	106.17	0.00	0.00	0.00

*HAPs

TOC (Total)	99.49%		99.45
VOC (Total)	6.24%		15.65
HAP (Total)	0.06%		0.24

ATTACHMENT O

MONITORING/RECORDKEEPING/REPORTING/ TESTING PLANS

45CSR13 Permit Modification Application

Majorsville Compressor Station
Dallas, West Virginia

CONE Gathering LLC
1000 Consol Energy Drive
Canonsburg, PA 15317

2017

MONITORING, RECORD KEEPING, REPORTING, TESTING PLANS

Monitoring

Since the newly added electrically driven vapor recovery unit compressor (VRU-5) at this station will constitute a modification to the site in accordance with the definition 40CFR§60.5365a(j) after September 18, 2015, the collection of fugitive components at the site will become subject to the equipment leak standards of §60.5397a. As a result of this modification, the source will be required to develop and implement a fugitive monitoring plan and conduct quarterly OGI surveys. The initial survey will be required within 60 days of startup or by June 3, 2017, whichever is later in accordance with §60.5397a(f)(2). However, on April 18, 2017 the USEPA Administrator, E. Scott Pruitt, issued a letter of reconsideration based on comments received from industry groups on August 2, 2016. This letter authorizes a 90 day stay of the compliance date for fugitive emissions monitoring requirements.

In addition to that mentioned above, CONE Gathering LLC (CONE) will monitor hours of operation for VRU-5 and the emergency generator EG-2, malfunctions of equipment, as well as planned and unplanned maintenance of permitted equipment comprising the facility.

Recordkeeping

CONE will retain records of the following for five (5) years, two (2) years on site, certified by a company official at such time that the DAQ may request said records.

Emission unit VRU-5 will be subject to the rod packing standards of §60.5385a that require them to be replaced/rebuilt every 26,000 hrs or 3 years. Records shall be maintained based on months or hours of operations since initial startup and each subsequent rebuild or replacement of the compressor's rod packing.

In addition to those mentioned above, the company will keep records of the items monitored, such as hours of operation, planned maintenance activities, and unplanned maintenance activities.

Reporting

CONE shall submit the annual reporting required by 40CFR60.4214(d), as applicable, for EG-2. OOOOa annual reporting will be required in accordance with 40CFR60.5420(b). In addition, the company will report any control equipment malfunctions or emission limit deviations.

Testing

At the Director's request a company operating any fuel burning unit may be required to conduct testing to determine compliance with Section 4 of 45CSR2 or perform visible emission observations in accordance with 40 CFR 60, Appendix A, Method 9.

ATTACHMENT P

PUBLIC NOTICE

45CSR13 Permit Modification Application

Majorsville Compressor Station
Dallas, West Virginia

CONE Gathering LLC
1000 Consol Energy Drive
Canonsburg, PA 15317

2017

AIR QUALITY PERMIT NOTICE
Notice of Application

Notice is given that CONE Gathering LLC has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a Rule 13 Permit Modification, for a natural gas compressor and dehydration station located off Number 2 Ridge Rd. near Dallas, in Marshall County, West Virginia. The latitude and longitude coordinates are 39.96793 and -80.53364.

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

Pollutant	Tons/yr
$PM/PM_{10}/PM_{2.5}$	0.13
SO_2	0.08
NO_X	2.32
CO	2.33
VOCs	0.93
Total HAPs	0.01

Modification of operations are after the fact. 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 the XX day of July, 2017.

By: CONE Gathering LLC
Joseph Fink
Chief Operating Officer
1000 Consol Energy Drive
Canonsburg, PA 15317