

June 10, 2014

West Virginia Dept. of Environmental Protection
Division of Air Quality – Permitting Section
601 57th Street, SE
Charleston, WV 25304


TECHNOLOGIES
98 Vanadium Road
Building D, 2nd Floor
Bridgeville, PA 15017
(412) 221-1100
(412) 257-6103 (FAX)
www.se-env.com

**RE: Application for Modification
Mills-Wetzel Pad 3
Stone Energy Corporation
Permit No. R13-3154
Plant ID No. 103-00077
Wetzel County, West Virginia**



To Whom It May Concern:

On behalf of our client, Stone Energy Corporation, we are pleased to submit three copies of the Application for Modification for the above referenced facility. Stone Energy wishes to install a redundant Vapor Combustor Unit at it Mills-Wetzel Pad 3 facility. This redundancy will significantly improve safety and environmental control in the event of a failure of the primary unit or in the event of a large surge in inlet liquids flow. This will not change any of the permitted process flow rates and associated emission levels with this operation. In addition, Stone wishes to install a third continuous duty electric generator.

As a Modification, it is our understanding that there is an associated base application fee of \$1,000. As there are no new processes or new emission types, there are no applicable NSPS or NESHAPs fees associated with this application. Stone recently submitted a fee of \$300 associated with a Class II Administrative Update for this same facility which was subsequently withdrawn. Therefore a balance of \$700 is due with this replacement application. A check, payable to WVDEP – Division of Air Quality is included with the application with the original signature.

Stone Energy is eager to proceed with installation of this additional control equipment at the earliest practical date. Consequently, if there are any questions or concerns regarding this application, please contact me at 412/221-1100, x 1628 or rdhonau@se-env.com and we will provide any needed clarification or additional information immediately.

Sincerely,

SE TECHNOLOGIES, LLC



Roger A. Dhonau, PE, QEP
Principal

Enclosures

cc: Stone Energy Corporation – William King



STONE ENERGY CORPORATION

APPLICATION FOR NSR PERMIT MODIFICATION

**Mills-Wetzel Pad 3
Wetzel County, West Virginia**

June 2014



98 Vanadium Road
Bridgeville, PA 15017
(412) 221-1100

ORIGINAL



APPLICATION FOR NSR PERMIT MODIFICATION

Stone Energy Corporation

Mills-Wetzel Well Pad 3

Wetzel County, West Virginia

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SECTION I

Project Overview

Stone Energy Corporation
Mills Wetzel Well Pad 3
Modification
Project Overview

This recently permitted facility receives natural gas and Produced Fluids (condensate and water) from up to ten wells on this well pad at an inlet pressure of approximately 1000 psi. The gas is passed through heaters (one per well) to avoid ice formation during pressure drops. The gas and liquids are then passed through three-way separators where gas, condensate and water are separated. The gas is then injected into a pipeline owned by others without the aid of compression.

After metering, the water is routed to two 400 BBL produced water accumulation tanks. The condensate is passed through a flash separator prior to being routed to four 400 BBL condensate tanks. Some additional organic liquids (condensate) drop out of the field gas that is passed through a scrubber for use as fuel gas that fires the heaters and the generators (noted below). This waste stream is routed to the 400 BBL condensate tanks.

Two small, gas-fired generators are present to provide electric service for facility instrumentation and controllers. **This Modification includes the addition of a third, larger generator.**

Emissions from the condensate tanks are a combination of flash gas, working losses and breathing losses. These emissions are currently controlled by a single Vapor Combustor Unit (VCU-1). This VCU also manages flash gas from the produced water tanks. **In this Modification, Stone Energy is seeking approval for the installation of a second VCU of the same make and model to run in parallel with the currently permitted unit. This redundancy is driven by improved safety desires, but will have the added benefit of environmental control of tank emission the event of a failure of the primary unit or a large surge in inlet liquids flow. No changes in hourly or annual emission limits**

There are no other changes being requested as part of this application.

SECTION II

Application Form



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):

Stone Energy Corporation

2. Federal Employer ID No. (FEIN):

72-1235413

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

Mills – Wetzel Pad 3

4. The applicant is the:

- OWNER OPERATOR BOTH

5A. Applicant's mailing address:

**6000 Hampton Center, Suite B
Morgantown, WV 26505**

5B. Facility's present physical address:

**No Street Address
Off of County Route 8/2 (Buffalo Run Road) In Wetzel County**

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: Lease agreement with owner for unrestricted access to the site
- 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.): **Well Pad Gas and Liquid Management Equipment**

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

211111

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

103 – 00077

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

R13-3154

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 the community of Hastings in Wetzel County, proceed east on State Route 20 to the community of Jacksonburg. At Jacksonburg, turn right onto Main Street and cross the South Fork of Fishing Creek. In approximately 500 feet, Main Street becomes Buffalo Run Road. Proceed on Buffalo Run Road approximately 0.6 miles to an un-paved road on the right. Proceed up this road approximately 13 miles to an un-named dirt road running along the ridge top. Turn left onto this road and travel 0.25 miles. The site is on the right.

12.B. New site address (if applicable):

12C. Nearest city or town:

12D. County:

Jacksonburg

Wetzel

12.E. UTM Northing (KM):

12F. UTM Easting (KM):

12G. UTM Zone: **17**

4373.419

528.100

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

Installation of back-up Vapor Combustion Unit

14A. Provide the date of anticipated installation or change: **5/01/2014**

- If this is an **After-The-Fact** permit application, provide the date upon which the proposed change did happen: / /

14B. Date of anticipated Start-Up if a permit is granted:

5/01/2014

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:

- | | | |
|---|--|--|
| <input type="checkbox"/> Bulk Liquid Transfer Operations | <input type="checkbox"/> Haul Road Emissions | <input type="checkbox"/> Quarry |
| <input type="checkbox"/> Chemical Processes | <input type="checkbox"/> Hot Mix Asphalt Plant | <input type="checkbox"/> Solid Materials Sizing, Handling and Storage Facilities |
| <input type="checkbox"/> Concrete Batch Plant | <input type="checkbox"/> Incinerator | <input checked="" type="checkbox"/> Storage Tanks |
| <input type="checkbox"/> Grey Iron and Steel Foundry | <input type="checkbox"/> Indirect Heat Exchanger | |
| <input type="checkbox"/> Other Emission Units, specify Generators, Line Heaters | | |

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

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

- | | | |
|--|---|--|
| <input type="checkbox"/> Absorption Systems | <input type="checkbox"/> Baghouse | <input checked="" type="checkbox"/> Flare |
| <input type="checkbox"/> Adsorption Systems | <input type="checkbox"/> Condenser | <input type="checkbox"/> Mechanical Collector |
| <input type="checkbox"/> Afterburner | <input type="checkbox"/> Electrostatic Precipitator | <input type="checkbox"/> Wet Collecting System |
| <input type="checkbox"/> 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:

- | | |
|--|---|
| <input type="checkbox"/> Authority of Corporation or Other Business Entity | <input type="checkbox"/> Authority of Partnership |
| <input type="checkbox"/> Authority of Governmental Agency | <input type="checkbox"/> 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: _____

(Please use blue ink)

35B. Printed name of signee: Richard Toothman

35C. Title: Sr. Vice President

35D. E-mail: toothmandr@stoneenergy.com

35E. Phone: 304-225-1600

35F. FAX:

36A. Printed name of contact person (if different from above): Bill King

36B. Title: Facilities Engineer

36C. E-mail: kingwj@stoneenergy.com

36D. Phone: 304-225-1785

36E. FAX:

PLEASE CHECK ALL APPLICABLE ATTACHMENTS INCLUDED WITH THIS PERMIT APPLICATION:

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

AU

State of West Virginia



Certificate

I, Betty Ireland, Secretary of State of the State of West Virginia, hereby certify that

STONE ENERGY CORPORATION

Control Number: 97941

a corporation formed under the laws of Delaware
has filed its "Application for Certificate of Authority" to transact business in West Virginia as required by the provisions of the West Virginia Code. I hereby declare the organization to be registered as a foreign corporation from its effective date of November 2, 2007

Therefore, I issue this

CERTIFICATE OF AUTHORITY

to the corporation authorizing it to transact business in West Virginia



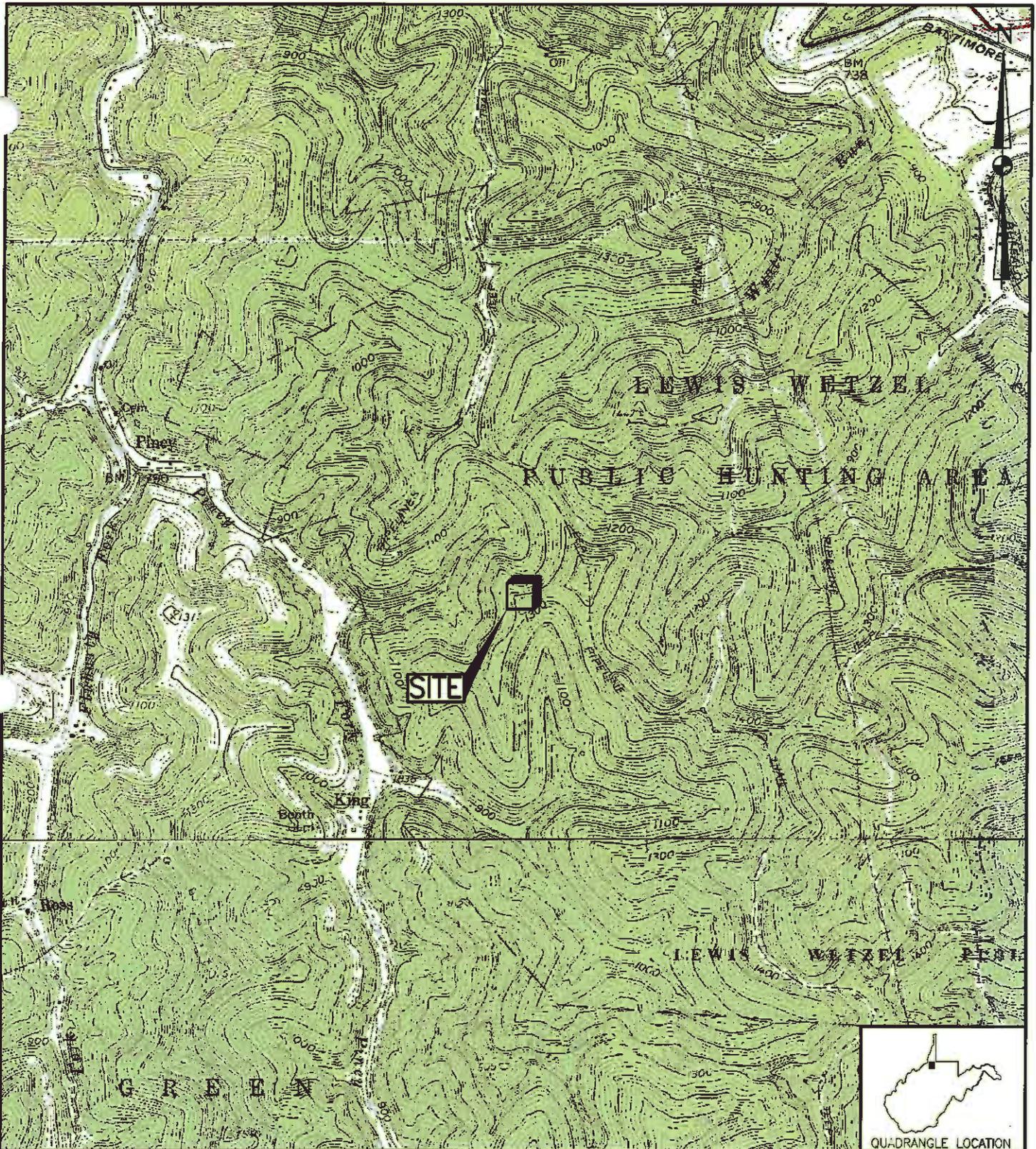
Given under my hand and the Great Seal of the State of West Virginia on this day of November 2, 2007

Betty Ireland

Secretary of State

ATTACHMENT B

Site Location Map



QUADRANGLE LOCATION

REFERENCE: USGS 7.5' QUADRANGLE MAP OF: PINE GROVE, WEST VIRGINIA; DATED 1960, PHOTOREVISED 1976.

DRAWN BY	DJF
DATE	10/23/13
CHECKED BY	RAD
JOB NO.	212136
SET DWG FILE	MILLS WETZEL PAD 3m01.dwg
DRAWING SCALE	1"=2000'



98 Vanadium Road Bridgeville, PA 15017 (412) 221-1100

STONE ENERGY CORPORATION

MILLS-WETZEL PAD 3
WETZEL COUNTY, WEST VIRGINIA
SITE LOCATION MAP

DRAWING NO.

FIGURE 1

REV.

0

ATTACHMENT C

Construction Schedule

**Stone Energy Corporation
Mills-Wetzel Pad 3
Modification
Attachment C – Construction Schedule**

The requested permit update seeks to install a back-up Vapor Combustor Unit and third generator at the existing Mills-Wetzel Well Pad. Stone Energy anticipates the construction to last 1 to 2 days. Commissioning is expected to commence within two weeks of receipt of the permit modification.

ATTACHMENT D

Regulatory Analysis

**Stone Energy Corporation
Mills-Wetzel Well Pad 3
Modification
Attachment D – Regulatory Analysis**

Both State and Federal environmental regulations governing air emissions apply to the planned Mills-Wetzel Well Pad 3. The West Virginia Department of Environmental Protection (WVDEP) has been delegated the authority to implement certain federal air quality requirements for the state. Air quality regulations that potentially affect the modification are discussed herein.

1.1 PSD and NSR

The facility will remain a minor source with respect to Prevention of Significant Deterioration (PSD) regulations as it will not have the potential to emit more than the annual emission thresholds of any PSD regulated pollutant with the voluntary restrictions (catalytic converters on engines).

The facility is within an area designated as non-attainment for fine particulates. Consequently, the facility is subject to the New Source Review (NSR) regulations. NO_x and fine particulate emissions (PM_{2.5}) will remain below the annual emission thresholds triggering NSR. Consequently, NSR requirements are not applicable to this project.

1.2 Title V Operating Permit Program

West Virginia has incorporated provisions of the federal Title V operating permit program. Thresholds for inclusion under the Title V program are 10 tpy of any single Hazardous Air Pollutant (HAP) or 25 tons of any combination of HAP and/or 100 tpy of all other regulated pollutants. Additionally, facilities regulated under certain New Source Performance Standards (NSPS) require facilities to have Title V permits.

The expanded facility will remain a minor source. Additionally, the NSPS regulating this facility does not trigger a Title V permit. Hence, a Title V permit will not be required for Stone Energy's Mills-Wetzel Well Pad 3.

1.3 Aggregation

The proposed additional equipment will not impact the interconnectivity of this facility with any other Stone Energy facility or facilities owned and operated by others. In addition, there are no changes in equipment ownership, management or the status of personnel that will manage the equipment. Hence, an updated aggregation analysis is not deemed necessary.

1.4 New Source Performance Standards

New Source Performance Standards (NSPS) regulations promulgated under 40 CFR 60 require new and reconstructed facilities to control emissions to the level achievable by Best-Available Control Technology (BACT). Specific NSPS requirements potentially applicable to the Mills-Wetzel Pad 3 modifications are as follows:

- 40 CFR 60, Subpart JJJJ – Stationary Spark Ignition Internal Combustion Engines
- 40 CFR 60, Subpart OOOO - Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution

1.4.1 Subpart JJJJ

This subpart governs emissions from new stationary spark ignition internal combustion engines (SI ICE) manufactured after July 1, 2007. The new generator driver engines presented in this application will be SI ICE units manufactured after this date. Accordingly, this rule applies to this engine. Although regulated under this rule, the size of the generator engine (74 Hp) is such that requirements are minimal.

The new unit is subject to the emissions limitation requirements of 40 CFR 60.4233(d). In accordance with this rule, a 74 Hp engine manufactured after July 1, 2008 must comply with 40 CFR 1048.101(c). The emission requirements under 40 CFR 1048.101(c) are HC+NO_x must be less than or equal to 3.8 g/KW-hr and CO must be less than or equal to 6.5 g/KW-hr. The engines are rated at HC+NO_x = 2.7 g/KW-Hr and CO= 2 g/KW-Hr. Thus, this engine is compliant with Subpart JJJJ.

1.4.2 Subpart OOOO

This subpart governs emissions from a broad spectrum of operations in the oil and natural gas industries, including operations at processing and fractionation plants. The potentially applicable sections of this rule sets restrictions on pneumatic controllers present at the Mills-Wetzel Well Pad 3, and sets requirements for storage vessels with potential VOC emissions greater than 6 tons per year. This rule applies to the Mills-Wetzel Well Pad 3.

One of the key components to this rule [40 CFR 60.5390(b)] is the requirement that all pneumatic controllers located between the well head and a processing plant must have a bleed rate of less than 6 scfh. Any additional pneumatic controllers to be installed at Mills-Wetzel Pad 3 will meet these criteria.

1.5 National Emission Standards for Hazardous Air Pollutants

National Emission Standards for Hazardous Air Pollutants (NESHAPs) promulgated under 40 CFR 63 regulate the emission of Hazardous Air Pollutants (HAPs) from certain industrial processes. In general, these rules apply to major sources of HAPs with a major source being defined as having the potential to emit more than 10 tpy of any individual HAP or 25 tpy of total HAPs. Emissions standards under these rules have been established as the Maximum Achievable Control Technology (MACT) for each source category. The following NESHAP source category standards are potentially applicable to the planned additional equipment at Mills-Wetzel Pad 3:

- 40 CFR 63, Subpart ZZZZ – NESHAP from Stationary Reciprocating Internal Combustion Engines

1.5.1 Subpart ZZZZ

This Subpart governs emissions from a stationary reciprocating internal combustion engine (RICE) located both at major and area source of HAPs. The facility will not be a major source of HAPs, but will be considered an area source of HAPs. Hence, this rule is potentially applicable to the facility. In accordance with 40 CFR 63.6590(a)(2)(iii), none of the engines at the planned Mills-Wetzel Well Pad 3 will be considered Existing Stationary RICE. All will be considered “new” engines. Thus, the engines will meet the requirements of this rule by meeting the requirements of NSPS, Subpart JJJJ as described above.

1.6 Chemical Accident Prevention

Subparts B-D of 40 CFR 68 present the requirements for the assessment and subsequent preparation of a Risk Management Plan (RMP) for a facility that stores more than a threshold quantity of a regulated substance listed in 40 CFR 68.130. If a facility stores, handles or processes one or more regulated substances in an amount greater than its corresponding threshold, the facility must prepare and implement an RMP. The Mills-Wetzel Well Pad 3 will potentially store more than 10,000 lbs of a flammable mixture containing several of the substances listed in Table 3 in 40 CFR 68.130. However, an RMP is not required as this facility qualifies for the exclusion provided for remote oil and gas production facilities (40 CFR 68.115).

1.7 West Virginia State Requirements

1.7.1 45 CSR 2

The facility is subject to the opacity requirement of 45 CSR 2. Emissions from the new enclosed combustor or the new generator engine cannot exceed 10% over any six minute period.

1.7.2 45 CSR 4

This regulation prohibits the emission of objectionable odors. Stone Energy is obligated to run the station in a manner that does not produce objectionable odors.

1.7.3 45 CSR 10

This regulation limits emissions of sulfur oxides. As the sulfur content of the Inlet Gas contains no measurable sulfur, emissions of sulfur oxides is negligible. Thus, while parts of this rule are applicable to the new equipment at this existing facility, no actions are required on the part of Stone Energy to attain compliance. The new generator engine at the expanded facility is not subject to 45 CSR 10, Section 3 as they do not produce power by indirect heat transfer and is therefore not considered a "fuel burning unit".

The fuel sulfur content is sufficiently low that the new engine can easily meet the requirements of this rule.

1.7.4 45 CSR 13

The state regulations applicable to the permitting of the proposed construction are in Title 45 Series 13 of the Code of State Regulations. With the proposed modifications, Mills-Wetzel Pad 3 will continue to have the potential to emit several regulated pollutants in excess of the thresholds that define a Stationary Source. However, the facility's potential to emit is far less than the thresholds that would classify the facility as a Major Source under 45 CSR 14.

1.7.5 45 CSR 16

This series of regulations is an incorporation, by reference, of the New Source Performance Standards codified under 40 CFR 60. As discussed under the federal regulations, the Mills-Wetzel Well Pad 3 is subject to the emission limitations, monitoring, testing and recordkeeping of Subpart JJJJ.

1.7.6 45 CSR 30

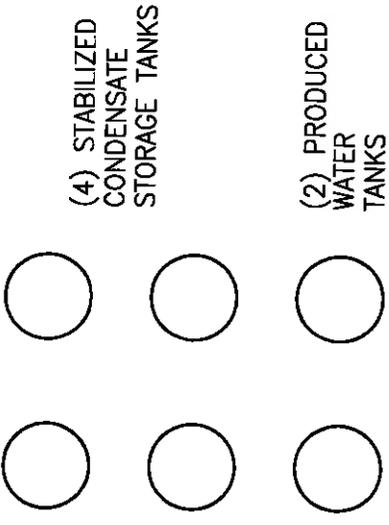
The state regulations applicable to Title V operating permits are in Title 45 Series 30. The planned modifications to Mills-Wetzel Well Pad 3, as noted above, do not raise the overall facility potential to emit any regulated pollutant about the threshold that would define it as a major facility. As the facility is subject to certain New Source Performance Standards, it is obligated to submit a Title V application and obtain a Title V permit. This application will be submitted within 12 months of receipt of the Permit to Construct.

1.7.7 Other Applicable Requirements

Through Series 34, WVDEP has adopted the National Emission Standards for Hazardous Air Pollutants for Source Categories. Both of these topics have been addressed above.

ATTACHMENT E

Site Layout Diagram



(4) STABILIZED
CONDENSATE
STORAGE TANKS

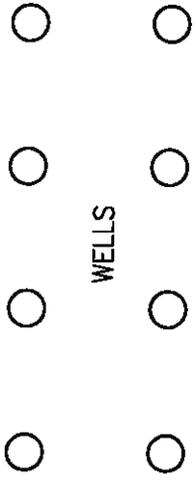
(2) PRODUCED
WATER
TANKS



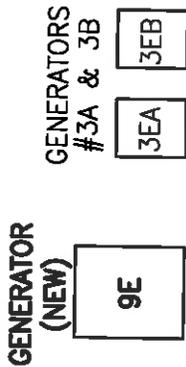
VCU #2
7E

VCU #1A
6E

VCU #1B
8E
(NEW)



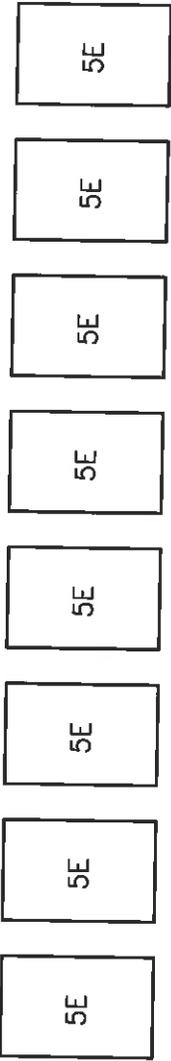
WELLS



GENERATOR
(NEW)

GENERATORS
#3A & 3B

LINE
HEATERS



NOTE:
EMISSION POINTS
1E & 2E ARE NOT USED.

DRAWN BY	DJF
DATE	10/25/13
CHECKED BY	RAD
SET JOB NO.	212136-06
SET DWG FILE	MILLS WETZEL PAD 3a01.dwg
DRAWING SCALE	N.T.S.



88 Vanadium Road Bridgeville, PA 15017 (412) 221-1100

STONE ENERGY CORPORATION

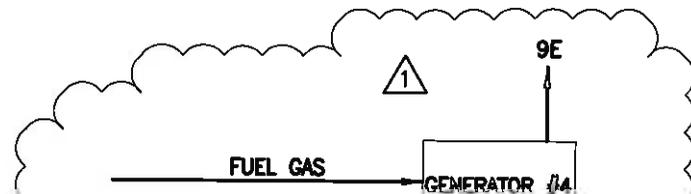
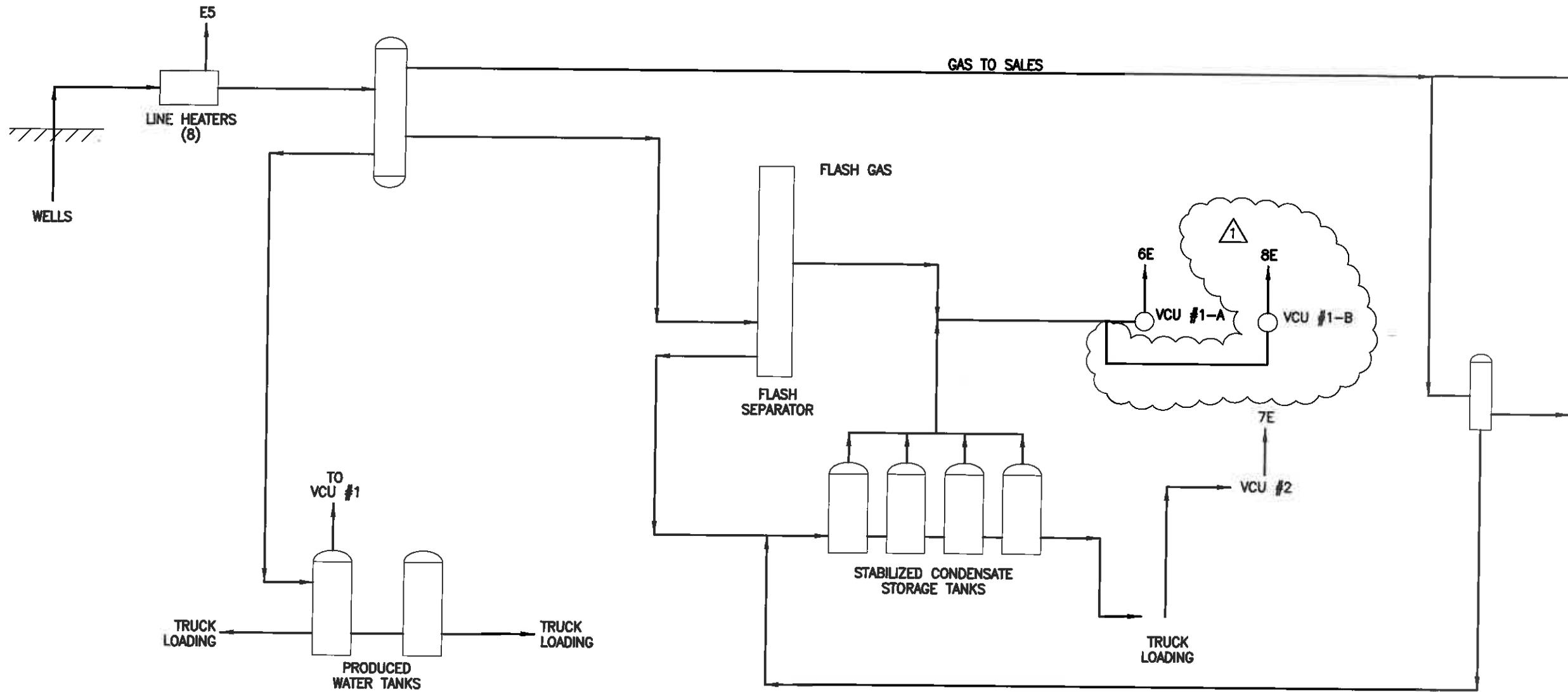
MILLS WETZEL PAD 3
WETZEL COUNTY, WEST VIRGINIA
SITE LAYOUT

DRAWING NAME
FIGURE 3

REV
0

ATTACHMENT F

Process Flow Diagram



ATTACHMENT G

Process Description

**Stone Energy Corporation
Mills Wetzel Well Pad 3
Attachment G - Process Description**

Natural gas and Produced Fluids (condensate and water) are received from 8 wells on this location and passed through heaters to avoid ice formation during pressure drops. These materials then pass through three-way separators where entrained gas, condensate and water are separated. The gas is then routed directly to a gathering pipeline owned by others, which operates near 300 psi.

The raw condensate is routed to an un-heated flash separator, dropping the pressure to approximately 50 psig. Flash gas from the separator is burned in a vapor combustion unit (VCU-1). [It is important to note that the lease agreement for this property does not allow installation of a compressor. Hence, this flash gas cannot be captured and re-injected to the gas stream].

Condensate is accumulate in four 400 BBL tanks, pending transportation by others to a processing facility for separation into individual products. Flash, working and breathing losses from these tanks is routed to VCU-1 noted above. The produced water will be accumulated in two 400 BBL tanks pending transportation by others to an approved disposal facility. Flash gas vapors from these tanks are also routed to VCU-1. **This permit modification is seeking to install a second VCU (VCU-1B) of the same make and model to run in parallel with the currently permitted unit to accommodate any sudden short term surges in condensate production. This redundancy is driven by improved safety desires, but will have the added benefit of environmental control of tank emissions the event of a failure of the primary unit or a large surge in inlet liquids flow. No changes in hourly or annual emission limits are being requested for this control system. Rather, the currently permitted hourly and annual flow will be split between the two units.**

Vapors generated during truck loading of condensate will be routed to a second VCU (VCU-2) where, in turn, they will be destroyed. As VOC vapors from the water tanks are comprised solely of flash gases generated during the drop to atmospheric pressure, there will be no measurable VOC vapors associated with truck loading operations of the produced water. Hence there is no control device associated with the truck loading of produced water.

Two small, gas-fired generators are also present to provide electric service for facility instrumentation and controllers. **This permit modification is seeking approval to install an additional generator which be used to operate electric pumps.**

No other modifications are being requested at this time.

ATTACHMENT I

Emission Unit Table

Attachment 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
S3	3EA & 3EB	Generator Engines	2014	2 @ 25 Hp each	EXIST	None
S4	4E	Truck Loading	2014	2.3 Million Gallons/Yr	EXIST	VCU-2
HTR-1	5E	Eight Line Heaters	2014	0.75 MMBTU/Hr Each	EXIST	None
VCU-1-A	6E	Vapor Combustor Unit #1A	2014	100 MCFD	EXIST	N/A
VCU-1-B	8E	Vapor Combustor Unit #1B	2014	100 MCFD	NEW	N/A
T05-6	---	Produced Water Tanks	2014	400 BBL each	EXIST	VCU-1
T01-T04	---	Condensate Tanks	2014	400 BBL each	EXIST	VCU-1
VCU-2	7E	Vapor Combustor Unit #2	2014	20 MCFD	EXIST	N/A
S5	9E	Generator Engine	2014	74 Hp	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

ATTACHMENT J

**Emission Points Data Summary Sheet
New Equipment**

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 ³)
		ID No.	Source	ID No.	Device Type	Short Term ²	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
3EA	Upward Vertical Stack	S3A	Generator		None	C	8760	NO _x	0.20	0.87	0.02	0.89	GAS	EE	
								CO	1.38	6.05	1.38	6.05	GAS	EE	
								VOC	0.08	0.37	0.08	0.37	GAS	EE	
								SO ₂	<0.01	<0.01	<0.01	<0.01	GAS	EE	
								PM/PM10	<0.01	<0.01	<0.01	<0.01	Solid	EE	
								Formaldehyde	<0.01	<0.01	<0.01	<0.01	Gas	EE	
								CO2e	26	116	26	116	Gas	EE	
3EB	Upward Vertical Stack	S3A	Generator	None	C	8760	NO _x	0.20	0.87	0.02	0.89	GAS	EE		
							CO	1.38	6.05	1.38	6.05	GAS	EE		
							VOC	0.08	0.37	0.08	0.37	GAS	EE		
							SO ₂	<0.01	<0.01	<0.01	<0.01	GAS	EE		
							PM/PM10	<0.01	<0.01	<0.01	<0.01	Solid	EE		
							Formaldehyde	<0.01	<0.01	<0.01	<0.01	Gas	EE		
							CO2e	26	116	26	116	Gas	EE		

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 ³)
		ID No.	Source	ID No.	Device Type	Short Term ²	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
8E	Upward Vertical Stack	VCU-1B	Vapor Comb. Unit	NA	8760	8760	NO _x	0.25	0.48	0.25	0.48	GAS	EE		
							CO	1.37	2.59	1.37	2.59	GAS	EE		
							VOC	0.89	3.90	0.89	3.90	GAS	EE		
							PM/PM10	0.02	0.03	0.02	0.03	GAS	EE		
							Benzene	0.00	0.00	0.00	0.00	Solid	EE		
							Toluene	0.00	0.00	0.00	0.00	Gas	EE		
							CO2e	433	820	433	820	Gas	EE		
9E	Upward Vertical Stack	S5	Generator	None	8760	8760	NO _x	0.16	0.71	0.16	0.71	GAS	EE		
							CO	0.33	1.43	0.33	1.43	GAS	EE		
							VOC	0.11	0.50	0.11	0.50	GAS	EE		
							SO ₂	0.00	0.00	0.00	0.00	GAS	EE		
							PM/PM10	0.01	0.06	0.01	0.06	Solid	EE		
							Benzene	0.00	0.01	0.00	0.01	Gas	EE		
							CO2e	87	380	87	380	Gas	EE		

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 ³)
		ID No.	Source	ID No.	Device Type	Short Term ²	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
7E	Upward Vertical Stack	VCU-2	Vapor Comb. Unit	NA			8760	NO _x	0.01	0.02	0.01	0.02	GAS	EE	
								CO	0.06	0.09	0.04	0.09	GAS	EE	
								VOC	0.15	0.32	0.15	0.32	GAS	EE	
								PM/PM10	0.00	0.00	0.00	0.00	GAS	EE	
								Benzene	0.00	0.00	0.00	0.00	Solid	EE	
								Toluene	0.00	0.00	0.00	0.00	Gas	EE	
								CO _{2e}	12.63	27.74	12.63	27.74	Gas	EE	
								NO _x					GAS	EE	
								CO					GAS	EE	
None (all emissions to VCU-1A + VCU-1B)	Upward Vertical Stack	T01-T04	Condensate Tanks	Enclosed Combustor	VCU-1	8760	VOC					GAS	EE		
							SO ₂					GAS	EE		
							PM/PM10					Solid	EE		
							Benzene					Gas	EE		
							CO _{2e}					Gas	EE		

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 ³)											
		ID No.	Source	ID No.	Device Type	Short Term ²	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr														
None (all emissions to VCU-1A + VCU-1B)	Upward Vertical Stack	T05-T06	Water Tanks	VCU-1	Enclosed Combustor	8760		NO _x						GAS	EE											
								CO											GAS	EE						
								VOC															GAS	EE		
								SO ₂																GAS	EE	
								PM/PM10																Solid	EE	
								Formaldehyde																	Gas	EE
								CO _{2e}										Gas	EE							

The EMISSION POINTS DATA SUMMARY SHEET provides a summation of emissions by emission unit. Note that un-captured 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., un-captured emissions). Please complete the FUGITIVE EMISSIONS DATA SUMMARY SHEET for fugitive emission activities.

- Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.
- Indicate by "C" if venting is continuous. Otherwise, specify the average short-term venting rate with units, for intermittent venting (i.e., 15 min/hr). Indicate as many rates as needed to clarify frequency of venting (e.g., 5 min/day, 2 days/wk).
- List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. **LIST** Acids, CO, CS₂, VOCs, H₂S, Inorganics, Lead, Organics, O₃, NO, NO₂, SO₂, SO₃, etc. **DO NOT LIST** CO₂, H₂, H₂O, N₂, O₂, and Noble Gases.
- 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).
- 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).
- 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).

Emission Points Data Summary Sheet
New Equipment

Table 2: Release Parameter Data

Emission Point ID No. (Must match Emission Units Table)	Inner Diameter (ft.)	Temp. (°F)	Exit Gas			Emission Point Elevation (ft)		UTM Coordinates (km)	
			Volumetric Flow ¹ (acfm) at operating conditions	Velocity (fps)	Ground Level (Height above mean sea level)	Stack Height ² (Release height of emissions above ground level)	Northing	Easting	
3E	0.33	Est. 800	Est. 400	60	1250	4'			
5E	1.00	Est. 800	Est. 500(each)	30 est.	1250	12'			
9E	0.33	1100	550	108	1250	8'			

¹ Give at operating conditions. Include inerts.
² Release height of emissions above ground level.

ATTACHMENT L

Emission Unit Data Sheets

NATURAL GAS COMPRESSOR/GENERATOR ENGINE DATA SHEET

Source Identification Number ¹		S3A		S3A		S5	
Engine Manufacturer and Model		PSI 1.6L		PSI 1.6L		PSI 5.7L	
Manufacturer's Rated bhp/rpm		25/1800		25/1800		74/1800	
Source Status ²		ES		ES		NS	
Date Installed/Modified/Removed ³		2/20/2014		2/20/2014		Upon Receipt of Permit	
Engine Manufactured/Reconstruction Date ⁴		2013		2013		2013	
Is this a Certified Stationary Spark Ignition Engine according to 40CFR60 Subpart JJJJ? (Yes or No) ⁵		No		No		No	
Engine, Fuel and Combustion Data	Engine Type ⁶	RB4S		RB4S		RB4S	
	APCD Type ⁷	None		None		None	
	Fuel Type ⁸	RG		RG		RG	
	H ₂ S (gr/100 scf)	<1		<1		<1	
	Operating bhp/rpm	25/1800		25/1800		74/1800	
	BSFC (Btu/bhp-hr)	9132		9132		10,255	
	Fuel throughput (ft ³ /hr)	200		200		605	
	Fuel throughput (MMft ³ /yr)	1.76		1.76		5.30	
	Operation (hrs/yr)	8760		8760		8760	
Reference ⁹	Potential Emissions ¹⁰	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
MD	NO _x	0.20	0.87	0.20	0.87	0.16	0.71
MD	CO	1.38	6.05	1.38	6.05	0.33	1.43
MD	VOC	0.08	0.37	0.08	0.37	0.11	0.50
AP	SO ₂	0.00	0.00	0.00	0.00	0.00	0.00
AP	PM ₁₀	0.00	0.00	0.00	0.00	0.01	0.06
AP	Formaldehyde	0.00	0.01	0.00	0.01	0.02	0.07
AP	Total HAPs	0.00	0.01	0.00	0.01	0.02	0.10

1. Enter the appropriate Source Identification Number for each natural gas-fueled reciprocating internal combustion compressor/generator engine located at the compressor station. Multiple compressor engines should be designated CE-1, CE-2, CE-3 etc. Generator engines should be designated GE-1, GE-2, GE-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	Removal of Source

3. Enter the date (or anticipated date) of the engine's installation (construction of source), modification 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 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 according to 40CFR§60.4243a(2)(i) through (iii), as appropriate.

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

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

LB2S Lean Burn Two Stroke	RB4S Rich Burn Four Stroke
LB4S Lean Burn Four Stroke	
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	SCR Lean Burn & Selective Catalytic Reduction
8. Enter the Fuel Type using the following codes:

PQ Pipeline Quality Natural Gas	RG Raw Natural Gas
---------------------------------	--------------------
9. Enter the Potential Emissions Data Reference designation using the following codes. Attach all referenced data to this *Compressor/Generator Data Sheet(s)*.

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*.

ATTACHMENT M

Air Pollution Control Device Sheets

Attachment M
Air Pollution Control Device Sheet
 (FLARE SYSTEM)

Control Device ID No. (must match Emission Units Table):

Equipment Information

<p>1. Manufacturer: Hy-Bon</p> <p>Model No. MTF Tank Battery Flare</p>	<p>2. Method: <input type="checkbox"/> Elevated flare <input checked="" type="checkbox"/> Ground flare <input type="checkbox"/> Other Describe</p>
<p>3. Provide diagram(s) of unit describing capture system with duct arrangement and size of duct, air volume, capacity, horsepower of movers. If applicable, state hood face velocity and hood collection efficiency.</p>	
<p>4. Method of system used: <input type="checkbox"/> Steam-assisted <input type="checkbox"/> Air-assisted <input type="checkbox"/> Pressure-assisted <input checked="" type="checkbox"/> Non-assisted</p>	
<p>5. Maximum capacity of flare: 100 MCFD EACH (4160scf/hr EACH)</p>	<p>6. Dimensions of stack: Diameter 2.75 ft. Height 16.25 ft.</p>
<p>7. Estimated combustion efficiency: (Waste gas destruction efficiency)</p> <p>Estimated: 99 % Minimum guaranteed: 98 %</p>	<p>8. Fuel used in burners: <input checked="" type="checkbox"/> Natural Gas <input type="checkbox"/> Fuel Oil, Number <input type="checkbox"/> Other, Specify:</p>
<p>9. Number of burners: 1 Rating: 9.15 MMBTU/Hr</p>	<p>11. Describe method of controlling flame: See Item 17</p>
<p>10. Will preheat be used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	
<p>12. Flare height: 12 ft</p>	<p>14. Natural gas flow rate to flare pilot flame per pilot light: N/A scf/min scf/hr</p>
<p>13. Flare tip inside diameter: 2.75 ft</p>	
<p>15. Number of pilot lights: Total 1 BTU/hr</p>	<p>16. Will automatic re-ignition be used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>17. If automatic re-ignition will be used, describe the method: There is no pilot flame on this unit. There is an automatic ignition device that initiates ignition upon sensing flow. As pressure decreases, it will shut the valve allowing no gas to travel thru. The pressures can be set with our controllers to whatever the desired pressures are.</p>	
<p>18. Is pilot flame equipped with a monitor? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, what type? <input checked="" type="checkbox"/> Thermocouple <input type="checkbox"/> Infra-Red <input type="checkbox"/> Ultra Violet <input type="checkbox"/> Camera with monitoring control room <input type="checkbox"/> Other, Describe:</p>	
<p>19. Hours of unit operation per year: Continuous</p>	

Steam Injection

20. Will steam injection be used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		21. Steam pressure PSIG Minimum Expected: N/A Design Maximum:	
22. Total Steam flow rate: N/A LB/hr		23. Temperature: N/A °F	
24. Velocity N/A ft/sec		25. Number of jet streams N/A	
26. Diameter of steam jets: N/A in		27. Design basis for steam injected: N/A LB steam/LB hydrocarbon	
28. How will steam flow be controlled if steam injection is used? N/A			

Characteristics of the Waste Gas Stream to be Burned

29. Name	Quantity Grains of H ₂ S/100 ft ³	Quantity (LB/hr, ft ³ /hr, etc)	Source of Material
Flash Tank Gas	<0.1	85.12 Lb/Hr	Inlet Flash Separator
Condensate Tank Vapors	<0.1	74.03 Lb/Hr	Cond. Storage Tanks

30. Estimate total combustible to flare: **159.15** LB/hr
(Maximum mass flow rate of waste gas)

31. Estimated total flow rate to flare including materials to be burned, carrier gases, auxiliary fuel, etc.:
Variable. Est. Max of 0.11 MMCF/Day Combined for VCU 1A and 1B

32. Give composition of carrier gases:
No Carrier Gases

33. Temperature of emission stream: Variable °F Heating value of emission stream: Variable BTU/ft³ Mean molecular weight of emission stream: MW = variable lb/lb-mole	34. Identify and describe all auxiliary fuels to be burned. None BTU/scf BTU/scf BTU/scf BTU/scf
--	--

35. Temperature of flare gas: °F

36. Flare gas flow rate: **4160 scf/hr**

37. Flare gas heat content: **1588** BTU/ft³

38. Flare gas exit velocity: scf/min

39. Maximum rate during emergency for one major piece of equipment or process unit: scf/min

40. Maximum rate during emergency for one major piece of equipment or process unit: BTU/min

41. Describe any air pollution control device inlet and outlet gas conditioning processes (e.g., gas cooling, gas reheating, gas humidification):
NONE

42. Describe the collection material disposal system:
N/A

43. Have you included **Flare Control Device** in the Emissions Points Data Summary Sheet? **YES**

44. Proposed Monitoring, Recordkeeping, Reporting, and Testing

Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING:

- **Visible Emissions (smoke)**
- **Dates and amounts of material flared**

RECORDKEEPING:

- **Visual Inspections for opacity**
- **Amounts flared per month**

REPORTING:

- **Opacity readings**
- **Amount flared per month**

TESTING:

None

MONITORING: Please list and describe the process parameters and ranges that are proposed to be monitored in order to demonstrate compliance with the operation of this process equipment or air control device.

RECORDKEEPING: Please describe the proposed recordkeeping that will accompany the monitoring.

REPORTING: Please describe any proposed emissions testing for this process equipment on air pollution control device.

TESTING: Please describe any proposed emissions testing for this process equipment on air pollution control device.

45. Manufacturer's Guaranteed Capture Efficiency for each air pollutant.

N/A

46. Manufacturer's Guaranteed Control Efficiency for each air pollutant.

98% combustion of material sent to flare

47. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.

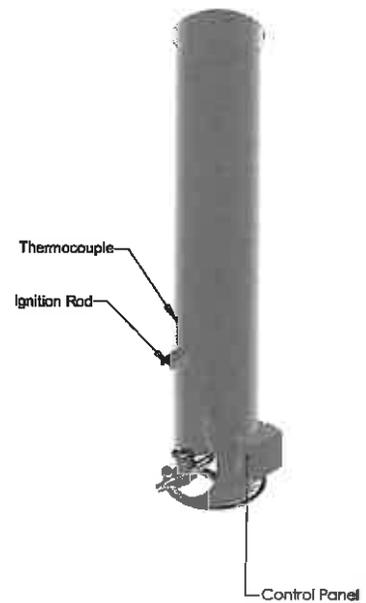
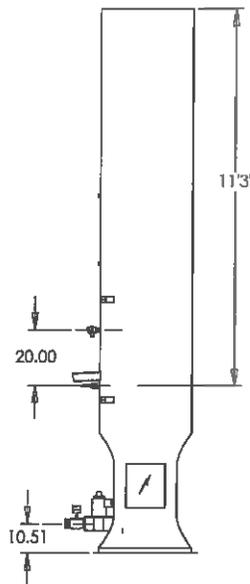
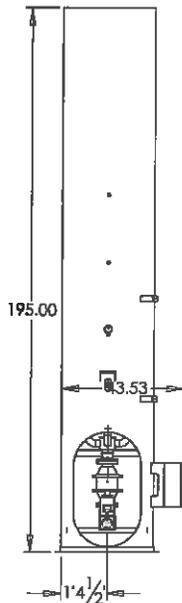
Operation to be within manufacturer specifications

®

HY-BON

Medium Temperature Flare (MTF) SPECIFICATIONS

<u>Dimension*</u>		<u>Materials of Construction:</u>	
Number of Burner Circles*	1 Internal Mult-Nozzle Burner Assembly	Flare Stack Enclosure	Stainless Steel 304 Stack
Inlet Gas Line	1 1/4" or as determined during detailed engineering	Base Frame / Stand	Stainless Steel 304 or Galvanized Carbon Steel
Total Height Excluding Foundation*	12ft Stack (est) 13ft Total Height	Burner	Stainless Steel 316 or equivalent
Base Dimensions* Weight (lbs)	3ft x 3ft (est) 1,000 lbs (est)	Piping	Stainless Steel 304
Combustion Chamber Diameter*	33" (est) Schedule 10 thickness	Gas Fittings	In accordance with NFPA, UL, and/or CSA



®
HY-BON

Engineering Company, Inc.

(432) 697-2292 (432) 520-2292 Fax (432) 697-2310
P. O. BOX 4185 MIDLAND, TEXAS 79704
2404 COMMERCE MIDLAND, TEXAS 79703
www.hy-bon.com

MTF SCUF TANK BATTERY FLARE



Advantages of the MTF SCUF Tank Battery Flare

- » Local Service Team
- » Low Capital and Operating Costs
- » Meets 40 CFR 60.18 regulations
- » Flexible & Scalable System
- » 98% Destruction Efficiency
- » Very High Turndown Ratio
- » Scalable flow rates
- » TERO License from Three Affiliated Tribes

Tank batteries, dehy units, B-TEX applications, and tank farms are all moving toward Vapor Combustors that can work without electricity and are reliable. No flow is too small and no site too rural for ABUTEC's MTF MINI Tank Battery Flare. With increasing regulations, sites are now required to combust the tank gas and can no longer vent to atmosphere. The MTF Mini has a very small footprint, is easy to install, and works in the toughest condition to make sure you are in compliance and worry free.

ATTACHMENT N

Supporting Calculations

STONE ENERGY CORPORATION

Mills Wetzel Pad 3
Wetzel County, WV

POTENTIAL EMISSIONS SUMMARY

Source	Description	NOx lb/hr	CO lb/hr	CO2e lb/Hr	VOC lb/hr	SO2 lb/hr	H2S lb/hr	PM lb/hr	benzene lb/hr	formaldehyde lb/hr	Total HAPs lb/hr
HTR-1	Eight 0.75 MMBTU/Hr Heaters	0.49	0.41	589	0.03	0.00	0.00	0.04	0.00	0.00	0.00
S3A+S3B	Small Generators	0.39	2.76	53	0.17	0.00		0.00	0.0000	0.00	0.0004
VCU-1A + VCU-1B	Vapor Combustors #1A & 1B	0.30	2.74	866	1.78			0.03	0.00		
	Fugitive VOC Emissions			22	1.32						
	Haul Road Fugitive Dust							2.66			
S4	Condensate Truck Loading/VCU-2 ²	0.01	0.04	13	3.10						
S5	NEW Generator	0.16	2.53	87	0.11	0.00		0.01	0.00	0.0156	0.02
T05	Produced Water Tank				N/A ¹						
T01-T04 and T06	Condensate Tanks (Flash+Breathing+Working)				N/A ¹						
Total		1.56	6.28	1,629	6.51	0.00	0.00	2.74	0.00	0.02	0.02
Current Permit		1.40	5.97	1,549	6.40	0.00	0.00	2.70	0.00	0.00	0.00
Increase		0.16	0.31	80.77	0.11	0.00	0.00	0.05	0.00	0.02	0.02

Source	Description	NOx tpy	CO tpy	CO2e tpy	VOC tpy	SO2 tpy	H2S tpy	PM tpy	benzene tpy	formaldehyde tpy	Total HAPs tpy
HTR-1	Eight 0.75 MMBTU/Hr Heaters	2.14	1.79	2,578	0.12	0.01	0.00	0.16	0.00	0.00	0.00
S3A+S3B	Small Generators	1.73	12.10	231	0.74	0.00		0.00	0.00	0.01	0.01
VCU-1A + VCU-1B	Vapor Combustors #1A & 1B	0.95	5.19	1,640	7.80			0.06	0.00		
	Fugitive VOC Emissions			98	5.78						
	Haul Road Fugitive Dust							7.72			
	Pigging Emissions			3	0.04						
S4	Condensate Truck Loading/VCU-2 ²	0.02	0.09	28	6.87						
S5	NEW Generator	0.71	1.43	380	0.30	0.00		0.06	0.01	0.07	0.10
	Produced Water Tank				N/A ¹						
	Produced Water Tank				N/A ¹						
T05	Produced Water Tank				N/A ¹						
T01-T04 and T06	Condensate Tank (Flash+Breathing+Working)				N/A ¹						
Total		5.55	20.60	4,958	21.85	0.01	0.00	8.01	0.01	0.08	0.12
Current Permit		4.84	19.20	4,590	21.35	0.01	0.00	7.95	0.01	0.01	0.02
Increase		0.71	1.40	368.27	0.50	0.00	0.00	0.06	0.00	0.07	0.10

¹ All condensate and water tank emissions are routed to Combustors VCU-1A and VCU-1B.
² Truck loading VOC emissions controlled at 70% per AP-42 Chapter 5.2.2.1.1. Actual emissions anticipated to be much lower.
 Non-VOC Emissions from VCU-2 Calculation sheet.

Stone Energy Corporation

**Mills Wetzel Pad 3
Wetzel County, WV**

Potential Emission Rates

Source HTR-1

Heaters

Burner Duty Rating	6000.0 Mbtu/hr	Eight Units at 750 Mbtu/Hr Each
Burner Efficiency	98.0 %	
Gas Heat Content (HHV)	1255.6 Btu/scf	
Total Gas Consumption	117025.2 scfd	
H2S Concentration	0.000 Mole %	
Hours of Operation	8760	

NOx	0.4876	lbs/hr	2.136	TPY
CO	0.4096	lbs/hr	1.794	TPY
CO2e	589	lbs/hr	2,578	tpy
VOC	0.0268	lbs/hr	0.117	TPY
SO2	0.0029	lbs/hr	0.013	TPY
H2S	0.0000	lbs/hr	0.000	TPY
PM10	0.0371	lbs/hr	0.162	TPY
CHOH	0.0004	lbs/hr	0.002	TPY

AP-42 Factors Used

NOx	100 Lbs/MMCF	
CO	84 Lbs/MMCF	
CO ₂	120,000 Lbs/MMCF	Global Warming Potential = 1
VOC	5.5 Lbs/MMCF	
PM	7.6 Lbs/MMCF	
SO ₂	0.6 Lbs/MMCF	
CH ₄	2.3 Lbs/MMCF	Global Warming Potential = 21
N ₂ O	2.2 Lbs/MMCF	Global Warming Potential = 310
HCOH	0.075 Lbs/MMCF	

**Stone Energy
GENERATOR EMISSIONS**

**Mills Wetzel Pad 3
Wetzel County, WV**

Potential Emission Rates

Source S3A

Engine Data:

Engine Manufacturer	Power Solutions		
Type (Rich-burn or Low Emission)	Rich Burn		
Aspiration (Natural or Turbocharged)	Natural		
Manufacturer Rating	25	hp	
	18.6	KW	
Speed at Above Rating	1,800	rpm	
Configuration (In-line or Vee)	In-Line		
Number of Cylinders	4		
Bore	4.00		
Stroke	3.60		
Fuel Heat Content (LHV)	1,139	BTU/scf	
Engine Displacement	3.0	liter	
Fuel Consumption	244	g/KW-hr	
	9,132	BTU/Hp-hr	

Emission Rates:

		lb/hr	tons/year	
Total Annual Hours of Operation	8,760			
NOx		0.1975	0.8650	0.865 Per Mfg
CO		1.3812	6.0497	6.05 Per Mfg
VOC		0.0847	0.3710	0.371 Per Mfg
CO2e		26.426	115.7447	N/A
CO2		25.113	109.9949	110
CH4		0.0525	0.2300	0.23
SO2		4E-06	0.0000	0.0006
PM2.5		6E-05	0.0003	0.0095
PM		6E-05	0.0003	0.00991
acrolein		2E-05	0.0001	0.00263
acetaldehyde		2E-05	0.0001	0.00279
formaldehyde	0.029	0.0016	0.0070	0.0205
benzene		1E-05	0.0000	0.00158
toluene		3E-06	0.0000	0.00056
methanol		2E-05	0.0001	0.00306
xylene		1E-06	0.0000	0.00019
total HAPs		0.0002	0.0073	0.03131

AP-42
4strokerich
lb/mmmbtu

**Stone Energy
GENERATOR EMISSIONS**

**Mills Wetzel Pad 3
Wetzel County, WV**

Potential Emission Rates

Source S3B

Engine Data:

Engine Manufacturer	Power Solutions
Type (Rich-burn or Low Emission)	Rich Burn
Aspiration (Natural or Turbocharged)	Natural
Manufacturer Rating	25 hp
	18.6 kW
Speed at Above Rating	1,800 rpm
Configuration (In-line or Vee)	In-Line
Number of Cylinders	4
Bore	4.00
Stroke	3.60
Fuel Heat Content (LHV)	1,139 BTU/scf
Engine Displacement	3.0 liter
Fuel Consumption	244 g/kW-hr
	9,132 BTU/Hp-hr

Emission Rates:

		<u>lb/hr</u>	<u>tons/year</u>
Total Annual Hours of Operation	8,760		
NOx		0.1975	0.8650
CO		1.3812	6.0497
VOC		0.0847	0.3710
CO2e		26.426	115.7447
CO2		25.113	109.9949
CH4		0.0525	0.2300
SO2		4E-06	0.0000
PM2.5		6E-05	0.0003
PM		6E-05	0.0003
acrolein		2E-05	0.0001
acetaldehyde		2E-05	0.0001
formaldehyde	0.029	0.0016	0.0070
benzene		1E-05	0.0000
toluene		3E-06	0.0000
methanol		2E-05	0.0001
xylene		1E-06	0.0000
total HAPs		0.0002	0.0073

AP-42
4-stroke rich
lb/mmBtu

0.865 Per Mfg
6.05 Per Mfg
0.371 Per Mfg
N/A
110
0.23
0.0003
0.0003
0.0001
0.0001
0.0001
0.00158
0.00056
0.00306
0.00019
0.03131

Stone Energy Corporation

**Mills Wetzel Pad 3
Wetzel County, WV**

Potential Emission Rates

Source S5

Engine Data:

Engine Manufacturer	Power Solutions International
Engine Model	EPSIB5
Type (Rich-burn or Low Emission)	Rich Burn
Aspiration (Natural or Turbocharged)	Natural

Manufacturer Rating	74	hp
Speed at Above Rating	1,800	rpm
Configuration (In-line or Vee)	Vee	
Number of Cylinders	8	
Engine Displacement	350	cu. in.
Engine BMEP	93	psi
Fuel Consumption (HHV)	10,255	Btu/bhp-hr

Emission Rates:

	g/bhp-hr	lb/hr	tons/year	g/hr	lb/day	
Oxides of Nitrogen, NOx	1.000	0.16	0.71	74	3.92	Comment
Carbon Monoxide CO	2.000	0.33	1.43	148	7.83	453.59 grams = 1 pound
VOC (NMNEHC)	0.700	0.11	0.50	52	2.74	2,000 pounds = 1 ton
CO2e		87	380			

Total Annual Hours of Operation

	g/bhp-hr	lb/hr	tons/year	g/hr	lb/day	
8,760						
SO2		0.0005	0.0020		0.0006	
PM2.5		0.0072	0.0316		0.0095	
PM (Condensable)		0.0075	0.0329		0.0099	
CO2		83.476	365.6236		110	
CH4		0.0017	0.0073		0.0022	Factor From 40 CFR 98, Table C-2
N2O		0.0104	0.0455		0.0002	Factor From 40 CFR 98, Table C-2
acrolein		0.002	0.0087		0.0026	
acetaldehyde		0.0021	0.0093		0.0027	
formaldehyde		0.0156	0.0681		0.0205	
benzene		0.0012	0.0053		0.0015	
toluene		0.0004	0.0019		0.0005	
ethylbenzene		2E-05	0.0001		2.48E-05	
xylene s		0.0001	0.0006		0.0001	
methanol		0.0023	0.0102		0.0030	
total HAPs		0.0238	0.1042			

Exhaust Parameters:

Exhaust Gas Temperature	1,304	deg. F
Exhaust Gas Mass Flow Rate		lb/hr
Exhaust Gas Mass Flow Rate	945	acfm

Exhaust Stack Height	137	inches
	8.67	feet

Exhaust Stack Inside Diameter	5	inches
	0.417	feet

Exhaust Stack Velocity	115.5	ft/sec
	6,930.5	ft/min

$$\frac{4}{3.1416} \times \frac{\text{acfm}}{(\text{stack diameter})^2}$$

**Mills Wetzel Pad 3
Wetzel County**

Potential Emission Rates

Source VCU-1A

Enclosed Vapor Combustor #1A

Destruction Efficiency 98.0 %
 Gas Heat Content (HHV) 1774.0 Btu/scf
 Max Flow to T-E 50,065 scf/day 7.9 MMCF/Yr
 Max BTUs to Flare 3.7 MMBTU/Hr 14,015 MMBTU/Yr

NOx	0.25	lbs/hr	0.48	tpy
CO	1.37	lbs/hr	2.59	tpy
CO2	432.57	lbs/hr	819.08	tpy
CO2e	433.07	lb/hr	820.04	tpy
VOC	0.89	lb/hr	3.9010	tpy
PM (total)	0.02	lb/hr	0.0300	tpy
Benzene	0.0000	lb/hr	0.0000	tpy
Toluene	0.0000	lb/hr	0.0000	tpy
CH4	0.01	lbs/hr	0.0154	tpy
N2O	0.0008	lbs/hr	0.0015	tpy

Factors Used

AP-42 Table 13.5-1 NOx 0.068 Lbs/MMBTU
 AP-42 Table 13.5-1 CO 0.37 Lbs/MMBTU
 40 CFR 98 Table C-1 CO2 116.89 Lbs/MMBTU
 40 CFR 98 Table C-2 CH4 0.0022 Lbs/MMBTU
 40 CFR 98 Table C-2 N2O 0.00022 Lbs/MMBTU
 AP-42 Table 1.4-2 PM 7.6 lb/MMSCF
 AP-42 Table 1.4-3 Benzene 0.0021 lb/MMSCF
 AP-42 Table 1.4-3 Toluene 0.0034 lb/MMSCF

VOC emissions equals non-combusted NMNEHC

**Mills Wetzel Pad 3
Wetzel County**

Potential Emission Rates

Source VCU-1B

Enclosed Vapor Combustor #1B

Destruction Efficiency	98.0 %	
Gas Heat Content (HHV)	1774.0 Btu/scf	
Max Flow to T-E	50,065 scf/day	7.9 MMCF/Yr
Max BTUs to Flare	3.7 MMBTU/Hr	14,015 MMBTU/Yr

NOx	0.25	lbs/hr	0.48	tpy
CO	1.37	lbs/hr	2.59	tpy
CO2	432.57	lbs/hr	819.08	tpy
CO2e	433.07	lb/hr	820.04	tpy
VOC	0.89	lb/hr	3.9010	tpy
PM (total)	0.02	lb/hr	0.0300	tpy
Benzene	0.0000	lb/hr	0.0000	tpy
Toluene	0.0000	lb/hr	0.0000	tpy
CH4	0.01	lbs/hr	0.0154	tpy
N2O	0.0008	lbs/hr	0.0015	tpy

Factors Used

AP-42 Table 13.5-1	NOx	0.068 Lbs/MMBTU
AP-42 Table 13.5-1	CO	0.37 Lbs/MMBTU
40 CFR 98 Table C-1	CO2	116.89 Lbs/MMBTU
40 CFR 98 Table C-2	CH4	0.0022 Lbs/MMBTU
40 CFR 98 Table C-2	N2O	0.00022 Lbs/MMBTU
AP-42 Table 1.4-2	PM	7.6 lb/MMSCF
AP-42 Table 1.4-3	Benzene	0.0021 lb/MMSCF
AP-42 Table 1.4-3	Toluene	0.0034 lb/MMSCF

VOC emissions equals non-combusted NMNEHC

**Mills Wetzel Pad 3
Wetzel County**

Potential Emission Rates

Source VCU-2

Enclosed Vapor Combustor (Flare) #2

Destruction Efficiency 98.0 %
 Gas Heat Content (HHV) 1774.0 Btu/scf
 Max Flow to T-E 730 scf/day 0.2670 MMCF/Yr
 Max BTUs to Flare 0.11 MMBTU/Hr 474 MMBTU/Yr

NOx	0.01	lbs/hr	0.02	tpy
CO	0.04	lbs/hr	0.09	tpy
CO2	12.61	lbs/hr	27.68	tpy
CO2e	12.63	lb/hr	27.71	tpy
VOC	0.15	lb/hr	0.3204	tpy
PM (total)	0.00	lb/hr	0.0010	tpy
Benzene	0.0000	lb/hr	0.0000	tpy
Toluene	0.0000	lb/hr	0.0000	tpy
CH4	0.00	lbs/hr	0.0005	tpy
N2O	0.0000	lbs/hr	0.0001	tpy

Factors Used

AP-42 Table 13.5-1 NOx 0.068 Lbs/MMBTU
 AP-42 Table 13.5-1 CO 0.37 Lbs/MMBTU
 40 CFR 98 Table C-1 CO2 116.89 Lbs/MMBTU
 40 CFR 98 Table C-2 CH4 0.0022 Lbs/MMBTU
 40 CFR 98 Table C-2 N2O 0.00022 Lbs/MMBTU
 AP-42 Table 1.4-2 PM 7.6 lb/MMSCF
 AP-42 Table 1.4-3 Benzene 0.0021 lb/MMSCF
 AP-42 Table 1.4-3 Toluene 0.0034 lb/MMSCF

VOC emissions equals non-combusted NMNEHC

Stone Energy Corporation

Mills Wetzel Pad 3
Wetzel County

Fugitive VOC Emissions

Volatile Organic Compounds, non-methane and non-ethane from gas analysis: 16.92
 Methane from gas analysis: 58.75 weight percent
 Carbon Dioxide from gas analysis: 0.41 weight percent

Emission Source:	Number	Oil & Gas Production*	VOC %	VOC, lb/hr	VOC TPY	CO2 lb/Hr	CO2 TPY	CH4 lb/hr	CH4 TPY	CO2e
Valves:										
Gas/Vapor:	36	0.02700 lb/hr	16.9	0.164	0.720	0.004	0.018	0.571	2.5012	52.5419
Light Liquid:	12	0.05000 lb/hr	100.0	0.600	2.628					
Heavy Liquid (Oil):	-	0.00050 lb/hr	100.0	0.000	0.000					
Relief Valves:	12	0.04000 lb/hr	16.9	0.081	0.356	0.002	0.009	0.282	1.2351	25.9466
Open-ended Lines, gas:	-	0.06100 lb/hr	16.9	0.000	0.000					
Open-ended Lines, liquid:	-	0.05000 lb/hr	100.0	0.000	0.000					
Pump Seals:										
Gas:	4	0.00529 lb/hr	16.9	0.004	0.016	0.000	0.000	0.000	0.0000	0
Light Liquid:	4	0.02866 lb/hr	100.0	0.115	0.502					
Heavy Liquid (Oil):	-	0.00133 lb/hr	100.0	0.000	0.000					
Compressor Seals, Gas:	8	0.01940 lb/hr	16.9	0.026	0.115	0.001	0.003	0.091	0.3994	8.3894
Connectors:										
Gas:	48	0.00300 lb/hr	16.9	0.024	0.107	0.001	0.003	0.085	0.3705	7.78398
Light Liquid:	32	0.00700 lb/hr	100.0	0.224	0.981					
Heavy Liquid (Oil):	-	0.00030 lb/hr	100.0	0.000	0.000					
Flanges:										
Gas:	64	0.00086 lb/hr	16.9	0.009	0.041	0.000	0.001	0.032	0.1416	2.97521
Light Liquid:	24	0.00300 lb/hr	100.0	0.072	0.315					
Heavy Liquid:	0	0.0009 lb/hr	100.0	0.000	0.000					

	lb/hr	t/y
VOC	1.320	5.781
CH4	1.061	4.648
CO2	0.007	0.033
CO2e	22.292	97.64

Notes: *Factors are from 40 CFR 98, Table W-1A, where available. Remaining are API

Stone Energy Corporation
GAS ANALYSIS INFORMATION

Inlet Gas Composition Information: New Station

	Fuel Gas mole %	Fuel M.W. lb/lb-mole	Fuel S.G.	Fuel Wt. %	LHV, dry Btu/scf	HHV, dry Btu/scf	AFR vol/vol	VOC NM / NE	Z Factor	
Nitrogen, N2	0.647	0.181	0.006	0.872			-		0.0065	
Carbon Dioxide, CO2	0.195	0.086	0.003	0.413			-		0.0019	
Hydrogen Sulfide, H2S	-	-	-	-			-		-	
Helium, He	-	-	-	-			-		-	
Oxygen, O2	-	-	-	-			-		-	
Methane, CH4	76.153	12.217	0.422	58.749	692.5	769.1	7.257		0.7600	
Ethane, C2H6	15.940	4.793	0.165	23.049	258.0	282.1	2.659		0.1581	
Propane	5.042	2.223	0.077	10.692	116.7	126.9	1.201	10.692	0.0495	
Iso-Butane	0.416	0.242	0.008	1.163	12.5	13.5	0.129	1.163	0.0040	
Normal Butane	1.041	0.605	0.021	2.910	31.3	34.0	0.322	2.910	0.0101	
Iso Pentane	0.158	0.114	0.004	0.548	5.8	6.3	0.060	0.548	0.0016	
Normal Pentane	0.207	0.149	0.005	0.718	7.7	8.3	0.079	0.718	0.0021	
Hexanes	0.120	0.103	0.004	0.497	5.3	5.7	0.054	0.497	0.0012	
Heptane +	0.081	0.081	0.003	0.390	4.1	4.5	0.042	0.390	0.0008	
	100.000	20.796	0.718		1,134.0	1,250.4	11.804	16.918	0.9958	-

Ideal Gross (HHV)	1,250.4
Ideal Gross (sat'd)	1,229.4
	-
Real Gross (HHV)	1,255.6
Real Net (LHV)	1,138.8

ATTACHMENT O

**Monitoring, Recordkeeping,
Reporting and Testing Plan**

ATTACHMENT O
STONE ENERGY CORPORATION
Mills-Wetzel Well Pad 3
MODIFICATION

Monitoring, Recordkeeping, Reporting and Testing Plan

I. Monitoring

Engines

As with the existing permit and equipment, Stone Energy Corporation (Stone) will track hours of operation on a daily basis for the additional generator engine. Additionally, Stone will monitor the amount of gas managed by the additional Vapor Combustor Unit (VCU-1B). Together, this additional monitoring information will allow the company to fully determine emissions for each source, utilizing the appropriate emission factors.

II. Recordkeeping

As stipulated in the current permit, Stone will maintain accurate operating records of all engines and other combustion sources for each calendar year. Records will include monthly fuel consumption (facility-wide), hours of operation for the generators and the amount of gas managed by the facility and the amount of waste gases combusted in each combustor unit. These records will be signed and dated by an authorized representative.

All inspections, preventive maintenance, failures, duration of failure events, replacements and/or other repair will be recorded, signed and dated by an authorized representative.

All records will be kept either on site or at the nearest office location for a period of at least five (5) years.

III. Testing

No testing is proposed for the small engines driving the generators as these engines do not require testing under 40 CFR 60, Subpart JJJJ due to their low horsepower rating (25 and 51 Hp).

IV. Reporting

Stone will submit certified emission statements on an annual basis in accordance with WVDEP, Division of Air Quality requirements.

ATTACHMENT P

Public Notice Affidavit

**Affidavit Notice Will Be Submitted
Upon Receipt**

Wetzel Chronicle Print Ad Proof

ADNo: 12067 Customer Number: L00411
Customer Name: Company: SE TECHNOLOGIES LLC
Address: 98 VANADIUM ROAD BUI
City/St/Zip: BRIDGEVILLE, PA 15017
Phone: (412) 221-1100 Solicitor: DW
Category: 10 Class: 1000 Rate: LE-0 Start: 6-18-2014 Stop: 6-18-2014
Lines: 45 Inches: 4.38 Words: 234

Credit Card: Expire:
Order Number:
Cost: 44.35 Extra Charges: .00 Adjustments: .00
Payments: .00 Discount: .00
Balance: 44.35

AIR QUALITY PERMIT NOTICE

Notice of Application

Notice is given that Stone Energy Corporation has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a Modification to the Permit for its Mills-Wetzel Pad 3 equipment located off of an access road from Buffalo Creek Road approximately 0.6 miles southeast of the community of Jacksonburg, in Wetzel County, West Virginia (Lat. 39.51667, Long. -80.65631)

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

0.71 tons of Nitrogen Oxides per year
1.43 tons of Carbon Monoxide per year
0.50 tons of Volatile Organics per year
0.00 tons of Sulfur Dioxide per year
0.06 tons of Particulate Matter per year
0.07 tons of Formaldehyde per year
380 tons of Greenhouse Gases per year

Startup of the additional equipment is planned to begin on or about the 1st day of August, 2014. 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 1227, during normal business hours.

Dated this the 18th day of June, 2014.

By:
Mr. Rick Toothman
Stone Energy Corporation
6000 Hampton Center
Morgantown, WV 26505
WC-06-18 12067