Dominion Resources Services, Inc.
5000 Dominion Boulevard, Glen Allen, VA 23060

Web Address: www.dom.com

November 19, 2015

BY: OVERNIGHT MAIL

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

RE: Modification Application (45CSR13)
Hastings Compressor Station (Facility ID#~~017-00003~~ 103-00006)

Dear Mr. Durham,

Dominion Resources, Inc. is proposing to expand its interstate natural gas pipeline system that currently extends from Western Pennsylvania into West Virginia as part of the Supply Header Project. Enclosed is an application for the modification of Hastings Compressor Station, located in Wetzel County, West Virginia. Dominion Transmission, Inc. plans to make the following modifications to the Hastings Compressor Station:

- Abandon in place of the two (2) Cooper GMXE-6 Reciprocating Engines, each rated at 500 hp;
- Installation of one (1) Ajax DPC-2803LE Reciprocating Engine rated at 600 hp; and
- Installation of one (1) Ajax DPC-2802LE Reciprocating Engine rated at 384 hp.

Enclosed with this permit application is a check for the fee in the amount of $2,000.

Two copies of the application on discs will be submitted under separate cover.

A legal advertisement will be published in the next few days and proof of publication will be forwarded as soon as it is received.

Should you have any questions or need additional information, please feel free to contact William Scarpinato at (804) 273-3019 or via email at william.a.scarpinato@dom.com.

Sincerely,

Robert M. Bisha

Robert M. Bisha
Project Director, Supply Header Project
Dominion Environmental Services

Dominion Transmission, Inc.

Permit Modification
Hastings Compressor Station
R13-3249

Pine Grove, West Virginia

Prepared By:

ENVIRONMENTAL RESOURCES MANAGEMENT, INC.

November 2015

INTRODUCTION

Dominion Transmission, Inc. (Dominion) is submitting this application to the West Virginia Department of Air Quality for the addition of new sources to the Hastings Compressor Station (Station) located in Wetzel County, West Virginia. The facility currently operates under Title V operating permit R30-10300006-2011(SM02), which was issued on July 11, 2011 to Dominion Transmission, Inc. and revised to reflect the addition of an emergency generator on November 27, 2012. Other related permits include the Rule 13 construction permit R13-3249, which was recently issued for the replacement of a dehydration unit, reboiler, and associated controls. The addition of the new sources in this application is viewed as a modification of the R13-3249 permit.

The Hastings Compressor Station operates as a production gathering facility. This application addresses the installation of two (2) new compression engines (EN03 and EN04). The two (2) existing compression engines (EN01 and EN02) will be abandoned in place after the new engines commence operation. The equipment included in this application is displayed below in Table 1.

Table 1: Proposed New Equipment

Emission Unit Name	Emission Unit ID
Ajax Reciprocating Engine	EN03
Ajax Reciprocating Engine	EN04

FACILITY DESCRIPTION

The Hastings Compressor Station is located off Route 20 in Pine Grove, Wetzel County, WV. The facility receives gas from nearby well sites and provides compression and dehydration of the gas. Hastings Compressor Station is classified as a production facility in its construction permit. The Title V operating permit for the site is aggregated with the nearby Mockingbird Hill Compressor Station and the Lewis Wetzel Compressor Station.

The Hastings Compressor Station has the authority to operate the following equipment:

- Two (2) Cooper GMXE-6 engines each rated at 500 hp;
- One (1) Generac QT080 Auxiliary Generator rated at 128 hp (80 kW);
- One (1) Natco Dehydration Unit rated at 7.5 MMscf/day;
- One (1) Natco Reboiler rated at 0.55 MMBtu/hr;
- One (1) Natco Heater rated at 10.0 MMBtu/hr;

- One (1) Dehydration Unit Flare rate at 2 MMBtu/hr; and
- One (1) 5,000 gallon ethylene glycol and water tank;
- One (1) 2,000 gallon used oil tank.
- One (1) 1,000 gallon produced fluids tank.

The Hastings Compressor Station currently operates two (2) Cooper GMXE-6 engines. The two new engines covered in this application are intended to replace these existing Cooper engines. Since the Cooper engines were installed prior to the promulgation of New Source Review Permitting, they are considered grandfathered sources that were not required to receive an authority to construct. Following start-up of the new engines (EN03 and EN04), Dominion will surrender the authority to operate the Cooper engines, noted as EN01 and EN02, and they will be abandoned in place.

With this submission, Dominion is seeking approval to construct the following sources:

- One (1) Ajax DPC-2803LE Reciprocating Engine rated at 542 hp;
- One (1) Ajax DPC-2802LE Reciprocating Engine rated at 347 hp.

A process flow diagram is included in this application in Attachment D.

EXISTING PERMIT STATUS

The aggregation of the Hastings Station, Mockingbird Hill Station, and Lewis Wetzel Station results in total Potential to Emit (PTE) that exceed the major source threshold for Nitrogen Oxides (NO_x), Volatile Organic Compounds (VOCs), Carbon Monoxide (CO) and the PSD threshold NO_x and VOCs.

REGULATORY DISCUSSION

This section outlines the State air quality regulations that could be reasonably expected to apply to the Hastings Compressor Station and makes an applicability determination for each regulation based on activities conducted at the Station and the emissions of regulated air pollutants associated with this project. This review is presented to supplement and add clarification to the information provided in the WVDAQ permit modification forms.

The West Virginia State Regulations address federal regulations, including Prevention of Significant Deterioration permitting, Title V permitting, New Source Performance Standards, and National Emission Standards for Hazardous Air Pollutants. The regulatory requirements in reference to the Hastings Compressor Station are described in detail in the below section.

WEST VIRGINIA STATE AIR REGULATIONS

45 CSR 02 – To Prevent and Control Particulate Air Pollution From Combustion of Fuel in Indirect Heat Exchangers

The units included with this submittal do not qualify as indirect heat exchangers and therefore are not subject to the requirements of this Rule.

45 CSR 04 – To Prevent and Control the Discharge of Air Pollutants into the Air Which Causes or Contributes to an Objectionable Odor

Operations conducted at the Hastings Compressor Station are subject to this requirement.

45 CSR 06 – Control of Air Pollution from the Combustion of Refuse

The units included with this submittal do not combust refuse, and therefore are not subject to the requirements of this Rule.

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

Natural gas combustion devices will be operated in accordance with the sulfur dioxide concentration limitation.

45 CSR 13 – Permits for Construction, Modification, Relocation And Operation of Stationary Sources of Air Pollutants

This permit modification is being submitted to the WVDAQ to seek authorization to construct additional stationary sources at the Hastings Compressor Station.

45 CSR 14 – Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration

The potential emissions from equipment at the Hastings Compressor Station, when aggregated with the Lewis Wetzel Station and Mockingbird Hill Station, exceed the Prevention of Significant Deterioration (PSD) emission thresholds for NO_2 and VOCs. As such, the facility is a major source under PSD and any modifications must be reviewed to determine if they are considered major modifications under the 45 CSR 14. Per 45 CSR 14-2.74, a modification is considered to be major if it results in a net emission increase that would equal or exceed any of the following rates:

Pollutant	Pollutant Emission Rate (tons/year)
Carbon monoxide:	100 tpy
Nitrogen oxides:	40 tpy
Sulfur dioxide:	40 tpy
Particulate matter:	25 tpy
PM_{10}:	15 tpy
$PM_{2.5}$:	10 tpy of direct $PM_{2.5}$ emissions
$PM_{2.5}$:	40 tpy of SO_2 emissions
$PM_{2.5}$:	40 tpy of NO_X emissions (unless demonstrated not to be a $PM_{2.5}$ precursor under subsection 2.66).
Ozone:	40 tpy of VOC or NO_X
Lead:	0.6 tpy
Fluorides:	3 tpy
Sulfuric acid mist:	7 tpy
Hydrogen sulfide (H_2S):	10 tpy
Total reduced sulfur (including H_2S):	10 tpy
Reduced sulfur compounds (including H_2S):	10 tpy

Per 45 CSR 14-3.4, the determination of whether a project is a major modification is a two-step process. A project is a major modification for a regulated pollutant if it causes two types of emissions increases -- a significant emissions increase (as defined in subsection 2.75), and a significant net emissions increase (as defined in subsections 2.46 and 2.74).

Emissions calculations used to determine the PTE's are included in the permit application as Attachment I. Vendor Guaranteed Emission Rates, EPA AP-42 emission factors, and 40 CFR 98 Subpart C emission factors are utilized to calculate the PTE from the two (2) compressor engines.

The proposed modification results in the overall increase in the PTEs for regulated air pollutants. The table featured below displays the change to the potential to emit for the proposed changes. The corresponding calculations for both of the compressor engines are featured in Attachment N.

Hastings Compressor Station
Net Increase to PTEs through Permit Modification

Emission Unit	Ajax Compressor DPC-2803 LE (EN03)		Ajax Compressor DPC-2802 LE (EN04)		Total	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
VOC's	0.84	3.66	0.54	2.35	1.37	6.01
CO	2.39	10.47	1.53	6.70	3.92	17.17
NOx	1.19	5.23	0.77	3.35	1.96	8.58
$PM_{FIL}/PM_{10}/PM_{2.5}$	0.16	0.72	0.11	0.47	0.27	1.19
PM_{CON}	0.04	0.19	0.03	0.12	0.07	0.31
SO_2	0.003	0.01	0.002	0.007	0.00	0.02
CO_2	501.76	2,197.71	323.63	1,417.51	825.39	3,615.22
CH_4	0.01	0.04	0.006	0.03	0.02	0.07
N_2O	0.001	0.004	<0.001	0.003	0.001	0.007
Total HAPs	0.20	0.87	0.35	1.51	0.54	2.39
Total CO_2e	502.28	2,199.98	323.96	1,418.97	826.24	3,618.95

Since the proposed project does not cause a significant emissions increase, the proposed construction of two (2) compression engines qualifies as a minor permitting action and is not subject to the requirements of this rule.

45 CSR 16 - Standards of Performance for New Stationary Sources (NSPS)

45 CSR 16 applies to all registrants that are subject to any of the NSPS requirements codified in 40 CFR 60. A discussion of NSPS that could be reasonably anticipated to apply at the Station is provided in the Federal Regulatory Discussion.

45 CSR 19 – Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution which Cause or Contributed to Non-attainment

Wetzel County, WV is in attainment for all pollutants with a National Ambient Air Quality Standard (NAAQS). Therefore, this regulation would not apply to the Hastings Compressor Station.

45 CSR 25 – Control of Air Pollution from Hazardous Waste Treatment, Storage, and Disposal Facilities

This Site does not qualify as a waste treatment, storage, and disposal facility and no hazardous waste will be burned at this Site; therefore, it is not subject to this hazardous waste rule.

45 CSR 30 – Requirements for Operating Permits

45 CSR 30 codifies the requirements of the federal Title V operating permit program (40 CFR 70) for West Virginia. The major source thresholds for the Title

V operating permit program regulations are 10 tons per year (tpy) of a single hazardous air pollutant (HAP), 25 tpy of any combination of HAPs, or 100 tpy of all other regulated pollutants.

In aggregate, the emissions from the Hastings Station, Lewis Wetzel Station, and Mockingbird Hill Station are above threshold values for the Title V program. The PTEs of VOCs, NOx, and CO are above the corresponding major source thresholds.

The submission of this permit modification application will serve as the application for modification for the facilities' Title V Operating Permit. The Title V permitting action for the installation of two (2) compression engine is a significant modification, since the engines are subject to the New Source Performance Standards of Subpart JJJJ. An additional electronic copy of this application is included with this submission for distribution to the WVDAQ Title V Permitting Group.

45 CSR 34 – National Emission Standards for Hazardous Air Pollutants (NESHAP)

45 CSR 34 applies to all registrants that are subject to any of the NESHAP requirements. A discussion of NESHAP that could be reasonably anticipated to apply at the Station is provided in the Federal Regulatory Discussion.

FEDERAL REGULATIONS

40 CFR 60, Subpart OOOO (Standards of Performance for Crude oil and Natural Gas Production, Transmission and Distribution)

Subpart OOOO establishes emission standards and compliance schedules for the control of volatile organic compounds (VOC) and sulfur dioxide (SO_2) emissions from certain affected facilities that commence construction, modification or reconstruction after August 23, 2011.

The compressor engines proposed with this modification qualify as reciprocating compressor affected facilities, since the engines operate between the wellhead and point of custody transfer, but are not proposed at a well site. Dominion will comply with this Rule by replacing the rod packing prior to 26,000 hours of operation or at 36 months, whichever comes first. Hours of operations will be continuously monitored and an initial annual report will be submitted, compliant with the requirements of this Rule.

It is noted that EPA has proposed 40 CFR 60, Subpart OOOOa which, if promulgated is expected to be the governing regulation for the new compressors. The relevant proposed provisions of Subpart OOOOa with respect

to reciprocating compressor are unchanged relative to Subpart OOOO. As such, Dominion's compliance obligations will be unchanged.

40 CFR 60, Subpart JJJJ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines)

Subpart JJJJ established standards and compliance schedules for the control of volatile organic compounds (VOC), Nitrogen Oxides (NOx), and Carbon Monoxide (CO) emissions from affected facilities that commence construction, modification, or reconstruction after June 12, 2006. The compression engines proposed at the Hastings Compressor Station were constructed in 2015 and are subject to the requirements of this Rule.

The compressor engine, denoted in this application as EN01, is an Ajax DPC-2803 LE 2-stroke lean burn engine with a brake horsepower rating of 542. This engine combusts natural gas and does not qualify as an emergency engine. This unit is subject to an emission standard of 1.0 g/hp-hr NO_x, 2.0 g/hp-hr CO, and 0.7 g/hp-hr VOCs, as outlined in Table 1 of this Rule. The Ajax engine does not qualify as an EPA certified engine. Dominion will demonstrate compliance with this emission standard by keeping a maintenance plan, keeping records of conducted maintenance, and operating the engine in a manner consistent with good air pollution control practices. Performance tests will be conducted initially, within one year of engine startup, will be conducted to demonstrate compliance with the emission limitations. Subsequent performance tests, conducted once every (3) three years or 8,760 hours of operation, whichever comes first, will be conducted to demonstrate compliance.

The compressor engine, denoted in this application as EN02, is an Ajax DPC-2802 LE 2-stroke lean burn engine with a brake horsepower rating of 347. This engine combusts natural gas and does not qualify as an emergency engine. This unit is subject to an emissions standard of 2.0 g/hp-hr NO_x, 4.0 g/hp-hr CO, and 1.0 g/hp-hr VOCs, as outlined in Table 1 of this Rule. The Ajax engine does not qualify as an EPA certified engine. Dominion will demonstrate compliance with this emission standard by keeping a maintenance plan, keeping records of conducted maintenance, and operating the engine in a manner consistent with good air pollution control practices. An initial performance test, conducted within one year of engine startup, will be conducted to demonstrate compliance with the NO_x limitation.

40 CFR 63 Subpart HH (National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities).

The compression engines included in this Rule 13 permit application do not qualify as affected units under this Rule. Dominion does operate a dehydration unit at this site that qualifies for the benzene exemption under this Rule; however, the dehydration unit is not affected by this proposed modification.

40 CFR 63 Subpart ZZZZ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines).

This permit modification seeks the authority to install two (2) Ajax reciprocating compressor engines. The proposed engines will qualify as new engines with respect to Subpart ZZZZ. Dominion will comply with this Rule by complying with the requirements of 40 CFR 60 Subpart JJJJ.

CAM Applicability Requirements Summary

40 CFR Part 64 applies to pollutant specific emissions at a major source. An applicability determination has been made as a part of this permit application.

The Hastings Compressor Station qualifies under 40 CFR §64.2(a) as a unit that is located at a major source that is required to obtain a Title V permit. The Station also is subject to an emissions limit or standard for an applicable pollutant (40 CFR §64.2(a)(1)), uses a control device to achieve compliance with an applicable limitation or standard(40 CFR §64.2(a)(2)), and the potential pre-control emissions of the applicable pollutant from the unit is greater than 100 tpy of VOCs.

The Hastings Compressor Station, however, is exempt from the requirements of 40 CFR Part 64 since §64.2(b)(i) states that the requirements of Part 64 do not apply if, *"Emission limitations or standards proposed by the Administrator after November 15, 1990 pursuant to section 111 or 112 of the Act."* The Hastings Compressor Station currently operates under Title V Permit R30-10300006-2011, where CAM rule non-applicability was determined during the Title V operating permit renewal application. The proposed modifications included in this permit application will not have an effect on the CAM applicability for the Hastings Compressor Station.

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):*
Dominion Transmission, Inc.

2. Federal Employer ID No. ***(FEIN):***
550629203

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

Currently, the Hastings Compressor Station Title V Permit aggregates the emissions from the Hastings Compressor Station, Mockingbird Hill Station, and the Lewis Wetzel Compressor Station. This permit application is for a modification proposed at the Hastings Compressor Station.

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

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5A. Applicant's mailing address:

925 White Oaks Blvd.
Bridgeport, WV 23660

5B. Facility's present physical address:

P.O. Box 450, Route 20
Pine Grove, WV 26419

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: **Dominion Resources Inc.**

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: **The applicant is the owner of 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.): **Natural Gas Transmission Facility (Note: Hastings Compressor operations are considered production equipment with regards to MACT Rules)**	10. North American Industry Classification System **(NAICS)** code for the facility: **486210**

11A. DAQ Plant ID No. (for existing facilities only): **103-00006**	11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only): **R30-10300006-2011, Issued July, 11 2011 – Updated Nov. 27, 2012** **R13-2555B, Issued September, 17 2012 (Mockingbird Hill)** **R13-2870, Issued February, 14 2011 (Lewis Wetzel)** **R13-3249, Issued October, 13 2015 (Hastings)**

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 Clarksburg, take Rt. 20 North for 37 miles to Hastings. The Station entrance is on the left side of the road.

12.B. New site address (if applicable): **N/A**	12C. Nearest city or town: **Pine Grove**	12D. County: **Wetzel**
12.E. UTM Northing (KM): **4,377.66**	12F. UTM Easting (KM): **528.64**	12G. UTM Zone: **17**

13. Briefly describe the proposed change(s) at the facility:
The proposed changes at the facility include the addition of two reciprocating compression engines (EN03 and EN 04) to replace two grandfathered source compression engines at the site. Proposed replacement equipment includes a 600hp Ajux DPC-2803 LE compressor (EN03) and a 384hp Ajux DPC-2802 LE compressor (EN04).

14A. Provide the date of anticipated installation or change: **January 2018** – If this is an **After-The-Fact** permit application, provide the date upon which the proposed change did happen: **N/A**	14B. Date of anticipated Start-Up if a permit is granted: **January 2018**

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	☐ Haul Road Emissions	☐ Quarry
☐ Chemical Processes	☐ Hot Mix Asphalt Plant	☐ Solid Materials Sizing, Handling and Storage Facilities
☐ Concrete Batch Plant	☐ Incinerator	☐ Storage Tanks
☐ Grey Iron and Steel Foundry	☐ Indirect Heat Exchanger	
☒ General Emission Unit, specify – RICE Engines		

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	☐ Baghouse	☐ Flare
☐ Adsorption Systems	☐ Condenser	☐ Mechanical Collector
☐ Afterburner	☐ Electrostatic Precipitator	☐ Wet Collecting System

☐ Other Collectors, specify **N/A**

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: 11/19/15 *(Please use blue ink)*

35B. Printed name of signee: **Leslie Hartz**		35C. Title: **Vice President, Pipeline Construction**
35D. E-mail: **Leslie.Hartz@dom.com**	36E. Phone: **(804) 771-4468**	36F. FAX:
36A. Printed name of contact person (if different from above): **William Scarpinato**		36B. Title: **Manager-Environmental Services**
36C. E-mail: **William.A.Scapinato@dom.com**	36D. Phone: **(804) 273-3019**	36E. FAX:

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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.

Table of Contents

Attachment A

BUSINESS CERTIFICATE

WEST VIRGINIA
STATE TAX DEPARTMENT
BUSINESS REGISTRATION CERTIFICATE

ISSUED TO:
DOMINION TRANSMISSION INC
445 W MAIN ST
CLARKSBURG, WV 26301-2843

BUSINESS REGISTRATION ACCOUNT NUMBER: **1038-3470**

This certificate is issued on: 06/8/2011

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

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

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

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

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

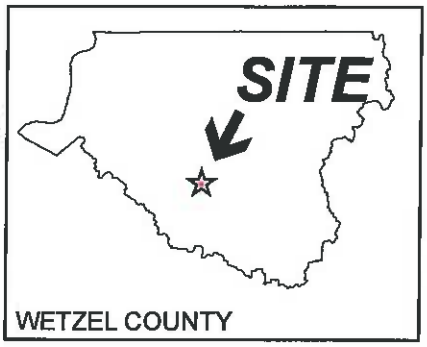
TRAVELING/STREET VENDORS: Must carry a copy of this certificate in every vehicle operated by them. CONTRACTORS, DRILLING OPERATORS, TIMBER/LOGGING OPERATIONS: Must have a copy of this certificate displayed at every job site within West Virginia.

alL006 v.4
L0228957312

Attachment B

LOCATION MAP

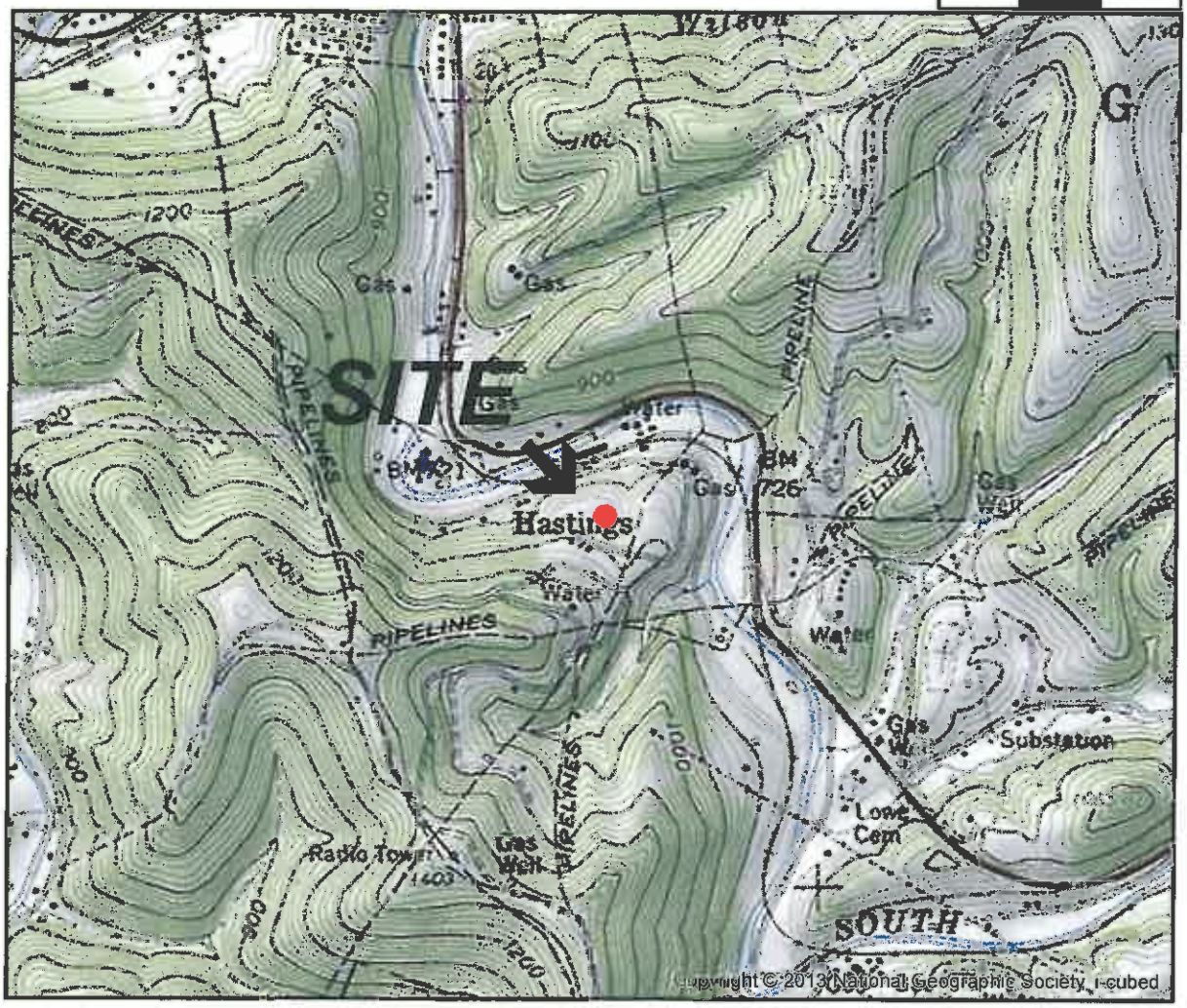
WEST VIRGINIA



N
W E
S

LAT. 39.550105 LONG. -80.672666
CITY OF PINE GROVE
WETZEL COUNTY
WEST VIRGINIA

0 1,000 2,000
FEET



SITE LOCATION MAP

USGS 24K QUAD GRID
PINE GROVE

ERM	**Dominion Transmission, Inc.** **Hastings Compressor Station** P.O. BOX 450, ROUTE 20 PINE GROVE, WV 26419	Review GM CHK'D GM 0285603
Drawn By FB 2/24/15	Environmental Resources Management	ATTACHMENT B

Attachment C

Schedule of Changes

Attachment C
Schedule of Installation

The Hastings Station is scheduled to commence construction on the proposed modification in January 2018. The anticipated start-up date is January 2018.

Attachment D

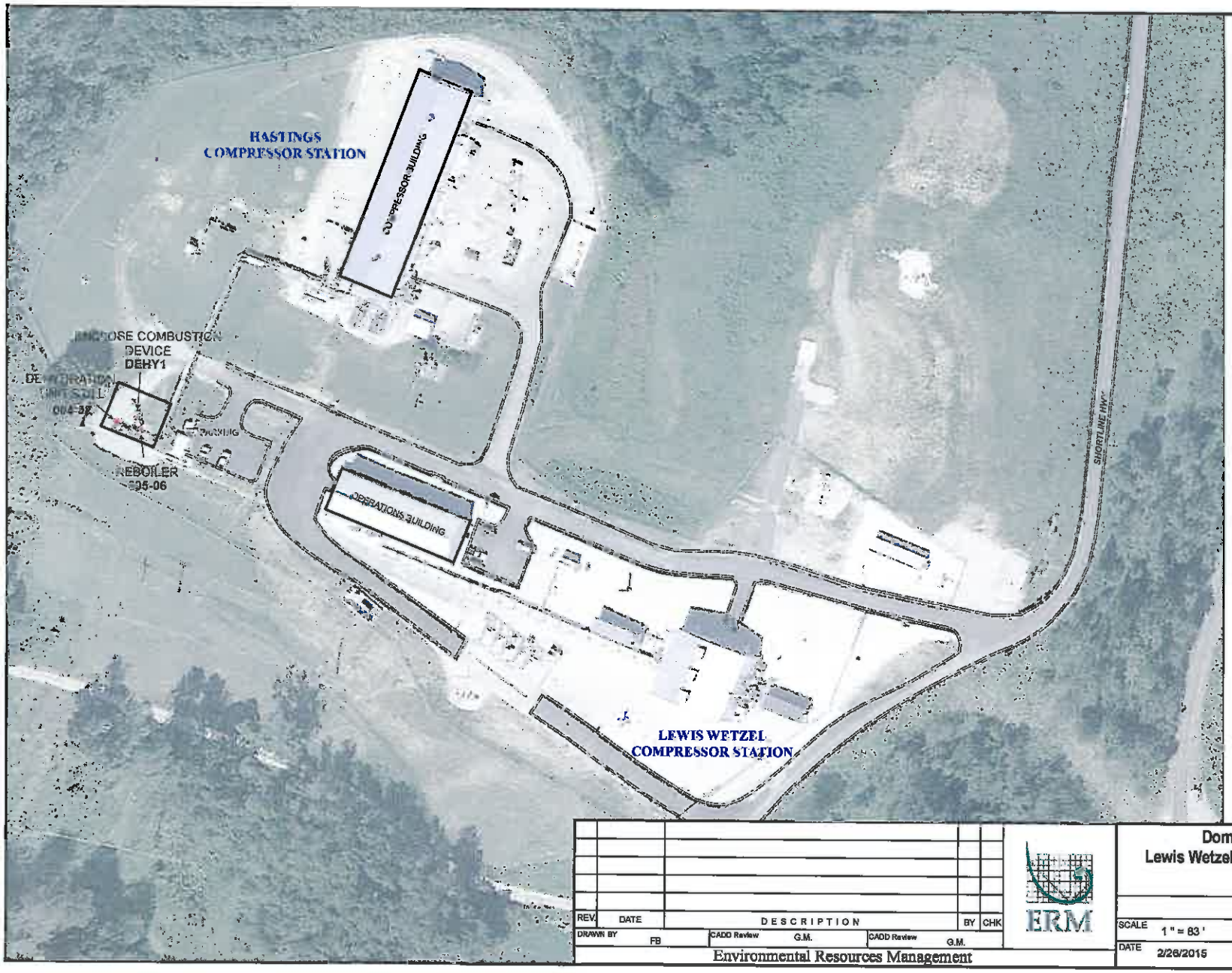
REGULATORY DISCUSSION

Attachment D
Regulatory Discussion

Dominion Transmission, Inc. has included a State and Federal Regulatory discussion in the introduction to this permit application.

Attachment E

PLOT PLAN



REV.	DATE	DESCRIPTION	BY	CHK

DRAWN BY FB | CADD Review G.M. | CADD Review G.M.

Environmental Resources Management

Dominion Transmission, Inc.
Lewis Wetzel & Hastings Compressor Station
P.O. BOX 450, ROUTE 20
PINE GROVE, WV 26419

PLOT PLAN

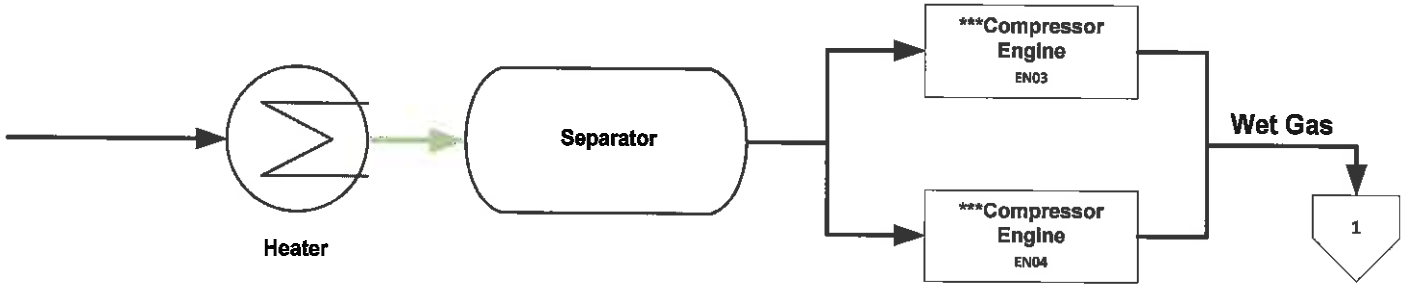
SCALE	PROJECT NUMBER	
1 " = 83 '	0285603	ATTACHMENT E
DATE 2/26/2015		

Document Path: F:\Projects\Spencer's Projects\Drawings\Dominion Transmission, Inc\FIGURE2.mxd

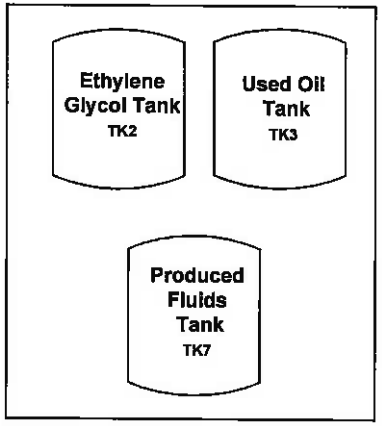
Attachment F

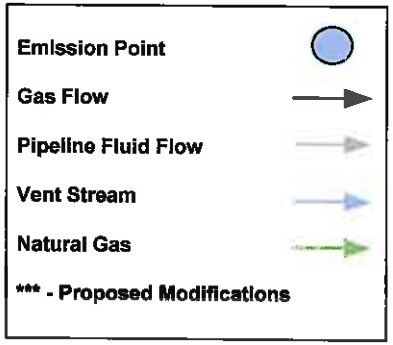
DETAILED PROCESS FLOW DIAGRAM

Attachment F – Detailed Process Flow Diagram
Dominion Transmission, Inc. – Hastings Station – Proposed Modifications



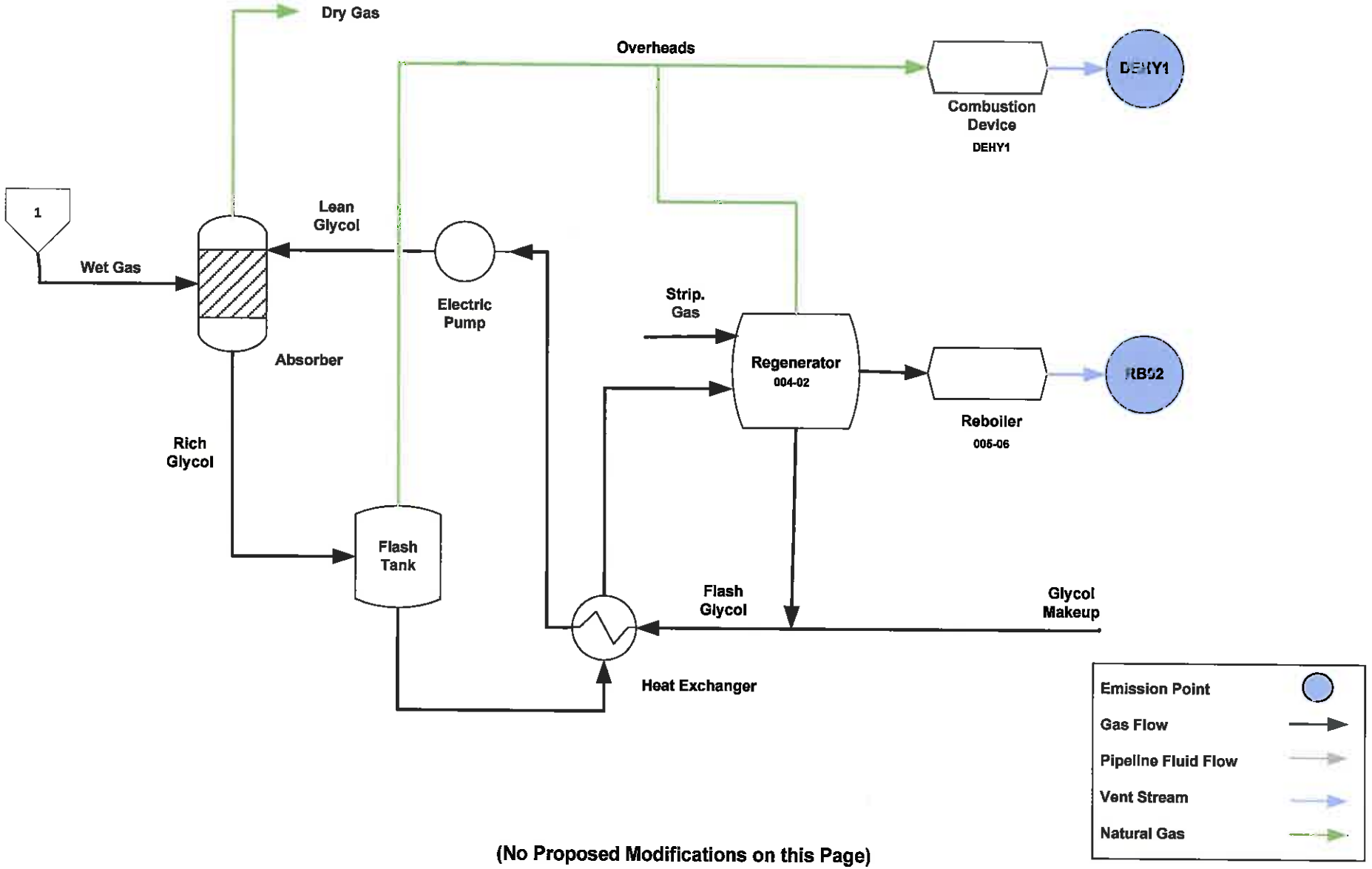
Auxiliary Generator
AUX01





EN03 and EN04 will replace existing engines EN01 and EN02.

Attachment F – Detailed Process Flow Diagram
Dominion Transmission, Inc. – Hastings Station – Proposed Modifications



(No Proposed Modifications on this Page)

Attachment G

PROCESS DESCRIPTION

Attachment G
Process Description

Dominion Transmission, Inc. is submitting this Rule 13 Permit Application Modification for the Hastings Compressor Station to comply with the permitting requirements of the state of West Virginia. This permit modification deals with the addition of two reciprocating compression engines (EN03 and EN04) to replace two (2) grandfathered compressor engines. The two (2) existing compression engines (EN01 and EN02) will be abandoned in place after the new engines commence operation.

The wet gas, after being compressed by the new compressor engines (EN03 and EN04), is first routed through an absorber, which uses lean glycol to remove water from the gas. Dry gas from the absorber leaves the station via pipeline. Rich glycol from the absorber flows to an uncontrolled flash gas tank and then to a heat exchanger. The exchanger transfers heat from both the flashed glycol and the Reboiler Heater (RBR02) to the lean and makeup glycol stream. The flashed glycol continues to the Regenerator, which separates the overheads (moisture and any absorbed hydrocarbons) from the glycol. Overheads are released as off gas from the Dehy Unit and routed to the Enclosed Combustion Device (DEHY1) for incineration. Glycol leaving the Regenerator is pumped and returned to the absorber after passing through the heat exchanger.

A process flow diagram is included as Attachment F.

Attachment H

MATERIAL SAFETY DATA SHEETS

(NOT INCLUDED)

Attachment I

EQUIPMENT LIST FORM

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]
Proposed New Units						
EN03	**EN03**	**Reciprocating Engine**	**2018**	**542 bhp**	**New**	**N/A**
EN04	**EN04**	**Reciprocating Engine**	**2018**	**347 bhp**	**New**	**N/A**
Proposed Abandoned in Placed Units						
EN01	**EN01**	**Reciprocating Engine**	**1968**	**500 bhp**	**Removal**	**N/A**
EN02	**EN02**	**Reciprocating Engine**	**1968**	**500 bhp**	**Removal**	**N/A**

[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

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] (mg/m^3)
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
EN03	**Upward Vertical Stack**	**EN03**	**Recip**	**NA**	**NA**	**NA**	**NA**	**CO**	**2.39**	**10.47**	**2.39**	**10.47**	**Gas**	**AP-42, Vendor Guarantees**	**NA**
								NO_x	**1.19**	**5.23**	**1.19**	**5.23**			
								SO_2	**<0.01**	**0.01**	**<0.01**	**0.01**			
								Total VOCs	**0.84**	**3.66**	**0.84**	**3.66**			
								$PM_{Filterable}$	**0.16**	**0.72**	**0.16**	**0.72**			
								$PM_{Condensable}$	**0.04**	**0.19**	**0.04**	**0.19**			
								Total HAPs	**0.20**	**0.87**	**0.20**	**0.87**			
								Formaldehyde	**0.10**	**0.42**	**0.10**	**0.42**			
								CO_2	**501.76**	**2,197.71**	**501.76**	**2,197.71**			
								CH_4	**0.01**	**0.04**	**0.01**	**0.04**			
								CO_2e	**502.28**	**2,199.98**	**502.28**	**2,199.98**			
EN04	**Upward Vertical Stack**	**EN04**	**Recip**	**NA**	**NA**	**NA**	**NA**	**CO**	**1.53**	**6.70**	**1.53**	**6.70**	**Gas**	**AP-42, Vendor Guarantees**	**NA**
								NO_x	**0.77**	**3.35**	**0.77**	**3.35**			
								SO_2	**0.002**	**0.01**	**0.002**	**0.01**			
								Total VOCs	**0.54**	**2.35**	**0.54**	**2.35**			
								$PM_{Filterable}$	**0.11**	**0.47**	**0.11**	**0.47**			
								$PM_{Condensable}$	**0.03**	**0.12**	**0.03**	**0.12**			
								Total HAPs	**0.13**	**0.56**	**0.13**	**0.56**			
								Formaldehyde	**0.06**	**0.27**	**0.06**	**0.27**			
								CO_2	**323.63**	**1,417.51**	**323.63**	**1,417.51**			
								CH_4	**<0.01**	**0.03**	**<0.01**	**0.03**			
								CO_2e	**323.81**	**1,418.97**	**323.81**	**1,418.97**			

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 J
EMISSION POINTS DATA SUMMARY SHEET

Table 2: Release Parameter Data

Emission Point ID No. *(Must match Emission Units Table)*	Inner Diameter (ft.)	Exit Gas			Emission Point Elevation (ft)		UTM Coordinates (km)	
		Temp. (°F)	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
EN03	1.44	574	4,473	45.93	788 ft	20.08	4,377.66	528.64
EN04	1.11	577	2,836	49.35	788 ft	21.67	4,377.66	528.64

Attachment K

FUGITIVE EMISSIONS DATA SUMMARY SHEET

Attachment K

FUGITIVE EMISSIONS DATA SUMMARY SHEET

The FUGITIVE EMISSIONS SUMMARY SHEET provides a summation of fugitive emissions. Fugitive emissions are those emissions which could not reasonably pass through a stack, chimney, vent or other functionally equivalent opening. Note that uncaptured process 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).

APPLICATION FORMS CHECKLIST - FUGITIVE EMISSIONS
1.) Will there be haul road activities? ☐ Yes ☒ No ☐ If YES, then complete the HAUL ROAD EMISSIONS UNIT DATA SHEET.
2.) Will there be Storage Piles? ☐ Yes ☒ No ☐ If YES, complete Table 1 of the NONMETALLIC MINERALS PROCESSING EMISSIONS UNIT DATA SHEET.
3.) Will there be Liquid Loading/Unloading Operations? ☐ Yes ☒ No ☐ If YES, complete the BULK LIQUID TRANSFER OPERATIONS EMISSIONS UNIT DATA SHEET.
4.) Will there be emissions of air pollutants from Wastewater Treatment Evaporation? ☐ Yes ☒ No ☐ If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.
5.) Will there be Equipment Leaks (e.g. leaks from pumps, compressors, in-line process valves, pressure relief devices, open-ended valves, sampling connections, flanges, agitators, cooling towers, etc.)? ☐ Yes ☒ No ☐ If YES, complete the LEAK SOURCE DATA SHEET section of the CHEMICAL PROCESSES EMISSIONS UNIT DATA SHEET.
6.) Will there be General Clean-up VOC Operations? ☐ Yes ☒ No ☐ If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.
7.) Will there be any other activities that generate fugitive emissions? ☐ Yes ☒ No ☐ If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET or the most appropriate form.
If you answered "NO" to all of the items above, it is not necessary to complete the following table, "Fugitive Emissions Summary."

Attachment L

EMISSION UNIT DATA SHEETS

Attachment L
EMISSIONS UNIT DATA SHEET
GENERAL

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): **EN03**

1. Name or type and model of proposed affected source:

   Reciprocating Internal Combustion Engine – EN03
   Ajax Compressor DPC-2083 LE
   542 hp

2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.

3. Name(s) and maximum amount of proposed process material(s) charged per hour:

   NA

4. Name(s) and maximum amount of proposed material(s) produced per hour:

   NA

5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants:

   NA

* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable):

(a) Type and amount in appropriate units of fuel(s) to be burned:

Natural Gas Fuel – As Required

(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:

NA

(c) Theoretical combustion air requirement (ACF/unit of fuel):

NA @ **NA** °F and **NA** psia.

(d) Percent excess air: **NA**

(e) Type and BTU/hr of burners and all other firing equipment planned to be used:

NA

(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:

NA

(g) Proposed maximum design heat input: **NA** $\times 10^6$ BTU/hr.

7. Projected operating schedule:

Hours/Day	**24**	Days/Week	**7**	Weeks/Year	**52**

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:

@ NA °F and Ambient psia

a.	NO_X	1.19	lb/hr	NA	grains/ACF
b.	SO_2	0.003	lb/hr	NA	grains/ACF
c.	CO	2.39	lb/hr	NA	grains/ACF
d.	$PM/PM_{10}/PM_{2.5}$	0.16	lb/hr	NA	grains/ACF
e.	Hydrocarbons	NA	lb/hr	NA	grains/ACF
f.	VOCs	0.84	lb/hr	NA	grains/ACF
g.	Pb	NA	lb/hr	NA	grains/ACF
h.	Specify other(s)				
	CO_{2e}	502.03	lb/hr	NA	grains/ACF
	Total HAPs	0.20	lb/hr	NA	grains/ACF
			lb/hr	NA	grains/ACF
			lb/hr	NA	grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. 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	RECORDKEEPING
See Attachment O	**See Attachment O**
REPORTING	TESTING
See Attachment O	**See Attachment O**

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 OPERATION/AIR POLLUTION CONTROL DEVICE.

RECORDKEEPING. PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

REPORTING. PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

TESTING. PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

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

NA

Attachment L
EMISSIONS UNIT DATA SHEET
GENERAL

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): **EN04**

1. Name or type and model of proposed affected source: **Reciprocating Internal Combustion Engine – EN04** **Ajax Compressor DPC-2082 LE** **347 hp**
2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.
3. Name(s) and maximum amount of proposed process material(s) charged per hour: **NA**
4. Name(s) and maximum amount of proposed material(s) produced per hour: **NA**
5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants: **NA**

* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable):

(a) Type and amount in appropriate units of fuel(s) to be burned:

Natural Gas Fuel – As Required

(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:

NA

(c) Theoretical combustion air requirement (ACF/unit of fuel):

NA @ **NA** °F and **NA** psia.

(d) Percent excess air: **NA**

(e) Type and BTU/hr of burners and all other firing equipment planned to be used:

NA

(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:

NA

(g) Proposed maximum design heat input: **NA** $\times 10^6$ BTU/hr.

7. Projected operating schedule:

Hours/Day	**24**	Days/Week	**7**	Weeks/Year	**52**

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:

@ **NA** °F and **Ambient** psia

a.	NO_X	**0.77**	lb/hr	**NA**	grains/ACF
b.	SO_2	**0.002**	lb/hr	**NA**	grains/ACF
c.	CO	**1.53**	lb/hr	**NA**	grains/ACF
d.	$PM/PM_{10}/PM_{2.5}$	**0.11**	lb/hr	**NA**	grains/ACF
e.	Hydrocarbons	**NA**	lb/hr	**NA**	grains/ACF
f.	VOCs	**0.54**	lb/hr	**NA**	grains/ACF
g.	Pb	**NA**	lb/hr	**NA**	grains/ACF
h.	Specify other(s)				
	CO_{2e}	**323.81**	lb/hr	**NA**	grains/ACF
	Total HAPs	**0.13**	lb/hr	**NA**	grains/ACF
			lb/hr	**NA**	grains/ACF
			lb/hr	**NA**	grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. 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	RECORDKEEPING
See Attachment O	**See Attachment O**
REPORTING	TESTING
See Attachment O	**See Attachment O**

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 OPERATION/AIR POLLUTION CONTROL DEVICE.

RECORDKEEPING. PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

REPORTING. PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

TESTING. PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

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

NA

Attachment M

AIR POLLUTION CONTROL DEVICE SHEETS

Attachment N

SUPPORTING EMISSIONS CALCULATIONS

Compressor DPC-2803 LE (EN03)

Pollutant	Emission Factor	Emission Factor Units	Emission Factor Basis / Source	Engine Rating (bhp)	BSFC (Btu/Bhph)	Annual Operating Hours	Max. Hourly Emissions (lb/hr)	Max. Annual Emissions (tpy)
VOC's	0.70	g/bhp-hr	Vendor Guarantee	542	7,914	8,760	0.84	3.66
CO	2.0	g/bhp-hr	Vendor Guarantee	542	7,914	8,760	2.39	10.47
NOx	1.0	g/bhp-hr	Vendor Guarantee	542	7,914	8,760	1.19	5.23
$PM_{FIL}/PM_{10}/PM_{2.5}$	3.84E-02	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	0.16	0.72
PM_{CON}	9.91E-03	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	0.04	0.19
SO_2	5.88E-04	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	0.003	0.01
CO_2	53.06	kg CO2 / MMBtu	40 CFR 98 Subpart C	542	7,914	8,760	501.76	2,197.71
CH_4	0.001	kg CH4 / MMBtu	40 CFR 98 Subpart C	542	7,914	8,760	0.009	0.04
N_2O	0.0001	kg N2O / MMBtu	40 CFR 98 Subpart C	542	7,914	8,760	0.001	0.004
Total CO_2e							502.03	2,199.98

Pollutant	HAP?	Emission Factor	Emission Factor Units	Emission Factor Basis / Source	Engine Rating (bhp)	BSFC (Btu/Bhph)	Annual Operating Hours	Max. Hourly Emissions (lb/hr)	Max. Annual Emissions (tpy)
1,1,2,2-Tetrachloroethane	Yes	6.63E-05	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	2.84E-04	1.25E-03
1,1,2-Trichloroethane	Yes	5.27E-05	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	2.26E-04	9.90E-04
1,1-Dichloroethane	No	3.91E-05	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	1.68E-04	7.35E-04
1,2,3-Trimethylbenzene	No	3.54E-05	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	1.52E-04	6.65E-04
1,2,4-Trimethylbenzene	No	1.11E-04	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	4.76E-04	2.09E-03
1,2-Dichloroethane	No	4.22E-05	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	1.81E-04	7.93E-04
1,2-Dichloropropane	No	4.46E-05	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	1.91E-04	8.38E-04
1,3,5-Trimethylbenzene	No	1.80E-05	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	7.72E-05	3.38E-04
1,3-Butadiene	Yes	8.20E-04	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	3.52E-03	1.54E-02
1,3-Dichloropropene	Yes	4.38E-05	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	1.88E-04	8.23E-04
2,2,4-Trimethylpentane	Yes	8.46E-04	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	3.63E-03	1.59E-02
2-Methylnaphthalene	Yes	2.14E-05	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	9.18E-05	4.02E-04
Acenaphthene	Yes	1.33E-06	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	5.70E-06	2.50E-05
Acenaphthylene	Yes	3.17E-06	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	1.36E-05	5.96E-05
Acetaldehyde	Yes	7.76E-03	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	3.33E-02	1.46E-01
Acrolein	Yes	7.78E-03	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	3.34E-02	1.46E-01
Anthracene	Yes	7.18E-07	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	3.08E-06	1.35E-05
Benz(a)anthracene	Yes	3.36E-07	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	1.44E-06	6.31E-06
Benzene	Yes	1.94E-03	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	8.32E-03	3.64E-02
Benzo(a)pyrene	Yes	5.68E-09	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	2.44E-08	1.07E-07
Benzo(b)fluoranthene	Yes	8.51E-09	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	3.65E-08	1.60E-07
Benzo(e)pyrene	Yes	2.34E-08	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	1.00E-07	4.40E-07
Benzo(g,h,i)perylene	Yes	2.48E-08	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	1.06E-07	4.66E-07
Benzo(k)fluoranthene	Yes	2.16E-06	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	9.28E-06	4.07E-05
Biphenyl	Yes	3.95E-06	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	1.69E-05	7.42E-05

Butane	No	4.75E-03	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	2.04E-02	8.92E-02
Butyr/Isobutyraldehyde	No	4.37E-04	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	1.87E-03	8.21E-03
Carbon Tetrachloride	Yes	6.07E-05	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	2.60E-04	1.14E-03
Chlorobenzene	Yes	4.44E-05	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	1.90E-04	8.34E-04
Chloroform	Yes	4.71E-05	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	2.02E-04	8.85E-04
Chrysene	Yes	6.72E-07	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	2.88E-06	1.26E-05
Cyclohexane	No	3.08E-04	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	1.32E-03	5.79E-03
Cyclopentane	No	9.47E-05	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	4.06E-04	1.78E-03
Ethane	No	7.09E-02	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	3.04E-01	1.33E+00
Ethylbenzene	Yes	1.08E-04	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	4.63E-04	2.03E-03
Ethylene Dibromide	Yes	7.34E-05	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	3.15E-04	1.38E-03
Fluoranthene	Yes	3.61E-07	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	1.55E-06	6.78E-06
Fluorene	Yes	1.69E-06	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	7.25E-06	3.18E-05
Formaldehyde	Yes	8.00E-02	g/bhp-hr	Vendor Guarantee	542	7,914	8,760	9.56E-02	4.19E-01
Hexane (or n-Hexane)	Yes	4.45E-04	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	1.91E-03	8.36E-03
Indeno(1,2,3-c,d)pyrene	Yes	9.93E-09	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	4.26E-08	1.87E-07
Isobutane	No	3.75E-03	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	1.61E-02	7.05E-02
Methanol	Yes	2.48E-03	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	1.06E-02	4.66E-02
Methylcyclohexane	No	3.38E-04	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	1.45E-03	6.35E-03
Methylene Chloride	Yes	1.47E-04	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	6.31E-04	2.76E-03
n-Nonane	No	3.08E-05	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	1.32E-04	5.79E-04
n-Octane	No	7.44E-05	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	3.19E-04	1.40E-03
Naphthalene	Yes	9.63E-05	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	4.13E-04	1.81E-03
PAH	Yes	1.34E-05	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	5.75E-05	2.52E-04
Pentane (or n-Pentane)	No	1.53E-03	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	6.56E-03	2.87E-02
Perylene	Yes	4.97E-09	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	2.13E-08	9.34E-08
Phenanthrene	Yes	3.53E-06	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	1.51E-05	6.63E-05
Phenol	Yes	4.21E-05	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	1.81E-04	7.91E-04
Propane	No	2.87E-02	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	1.23E-01	5.39E-01
Pyrene	No	5.84E-07	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	2.51E-06	1.10E-05
Styrene	Yes	5.48E-05	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	2.35E-04	1.03E-03
Toluene	Yes	9.63E-04	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	4.13E-03	1.81E-02
Vinyl Chloride	Yes	2.47E-05	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	1.06E-04	4.64E-04
Xylene	Yes	2.68E-04	lb/MMBtu	AP-42 Chapter 3.2	542	7,914	8,760	1.15E-03	5.04E-03
Total HAPs								0.20	0.87

Notes:

- AP-42, Chapter 3.2 references are from the July 2000 revision.
- Greenhouse Gas Emissions are calculated using 40 CFR 98 Subpart C Table C-1 and C-2 emission factors.
- Max. Annual Emissions based upon Max. Hourly Emissions @ 8760 hr/yr.
- CO_2 equivalency solved for using Global Warming Potentials found in 40CFR98 Table A-1 (Updated January 2014). GWP CO_2=1, GWP CH_4=25, GWP N_2O=298

Example Equations:

Max. Hourly Emission Rate (lb/hr) = Emission Factor (lb/MMBtu) x Engine Rating (bhp) x BSFC (Btu/bhph) x 1 / 1,000,000 (MMBtu/Btu)

Compressor DPC-2802 LE (EN04)

Pollutant	Emission Factor	Emission Factor Units	Emission Factor Basis / Source	Engine Rating (bhp)	BSFC (Btu/Bhph)	Annual Operating Hours	Max. Hourly Emissions (lb/hr)	Max. Annual Emissions (tpy)
VOC's	0.70	g/bhp-hr	Vendor Guarantee	347	7,973	8,760	0.54	2.35
CO	2.0	g/bhp-hr	Vendor Guarantee	347	7,973	8,760	1.53	6.70
NOx	1.0	g/bhp-hr	Vendor Guarantee	347	7,973	8,760	0.77	3.35
$PM_{FIL}/PM_{10}/PM_{2.5}$	3.84E-02	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	0.11	0.47
PM_{CON}	9.91E-03	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	0.03	0.12
SO_2	0.001	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	0.002	0.01
CO_2	53.06	kg CO_2 / MMBtu	40 CFR 98 Subpart C	347	7,973	8,760	323.63	1,417.51
CH_4	0.001	kg CH_4 / MMBtu	40 CFR 98 Subpart C	347	7,973	8,760	0.008	0.03
N_2O	0.0001	kg N_2O / MMBtu	40 CFR 98 Subpart C	347	7,973	8,760	0.001	0.003
Total CO_2e							323.81	1,418.97

Pollutant	HAP?	Emission Factor	Emission Factor Units	Emission Factor Basis / Source	Engine Rating (bhp)	BSFC (Btu/Bhph)	Annual Operating Hours	Max. Hourly Emissions (lb/hr)	Max. Annual Emissions (tpy)
1,1,2,2-Tetrachloroethane	Yes	6.63E-05	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	1.83E-04	8.03E-04
1,1,2-Trichloroethane	Yes	5.27E-05	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	1.46E-04	6.39E-04
1,1-Dichloroethane	No	3.91E-05	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	1.08E-04	4.74E-04
1,2,3-Trimethylbenzene	No	3.54E-05	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	9.79E-05	4.29E-04
1,2,4-Trimethylbenzene	No	1.11E-04	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	3.07E-04	1.35E-03
1,2-Dichloroethane	No	4.22E-05	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	1.17E-04	5.11E-04
1,2-Dichloropropane	No	4.46E-05	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	1.23E-04	5.40E-04
1,3,5-Trimethylbenzene	No	1.80E-05	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	4.98E-05	2.18E-04
1,3-Butadiene	Yes	8.20E-04	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	2.27E-03	9.94E-03
1,3-Dichloropropene	Yes	4.38E-05	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	1.21E-04	5.31E-04
2,2,4-Trimethylpentane	Yes	8.48E-04	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	2.34E-03	1.03E-02
2-Methylnaphthalene	Yes	2.14E-05	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	5.92E-05	2.59E-04
Acenaphthene	Yes	1.33E-06	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	3.68E-06	1.61E-05
Acenaphthylene	Yes	3.17E-06	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	8.77E-06	3.84E-05
Acetaldehyde	Yes	7.76E-03	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	2.15E-02	9.40E-02
Acrolein	Yes	7.78E-03	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	2.15E-02	9.43E-02
Anthracene	Yes	7.18E-07	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	1.99E-06	8.70E-06
Benz(a)anthracene	Yes	3.36E-07	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	9.30E-07	4.07E-06
Benzene	Yes	1.94E-03	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	5.37E-03	2.35E-02
Benzo(a)pyrene	Yes	5.68E-09	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	1.57E-08	6.88E-08
Benzo(b)fluoranthene	Yes	8.51E-09	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	2.35E-08	1.03E-07
Benzo(e)pyrene	Yes	2.34E-08	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	6.47E-08	2.84E-07
Benzo(g,h,i)perylene	Yes	2.48E-08	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	6.86E-08	3.01E-07
Benzo(k)fluoranthene	Yes	2.16E-06	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	5.99E-06	2.62E-05

Biphenyl	Yes	3.95E-06	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	1.09E-05	4.79E-05
Butane	No	4.75E-03	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	1.31E-02	5.76E-02
Butyr/Isobutyraldehyde	No	4.37E-04	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	1.21E-03	5.30E-03
Carbon Tetrachloride	Yes	6.07E-05	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	1.68E-04	7.36E-04
Chlorobenzene	Yes	4.44E-05	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	1.23E-04	5.38E-04
Chloroform	Yes	4.71E-05	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	1.30E-04	5.71E-04
Chrysene	Yes	6.72E-07	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	1.86E-06	8.14E-06
Cyclohexane	No	3.08E-04	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	8.52E-04	3.73E-03
Cyclopentane	No	9.47E-05	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	2.62E-04	1.15E-03
Ethane	No	7.09E-02	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	1.96E-01	8.59E-01
Ethylbenzene	Yes	1.08E-04	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	2.99E-04	1.31E-03
Ethylene Dibromide	Yes	7.34E-05	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	2.03E-04	8.89E-04
Fluoranthene	Yes	3.61E-07	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	9.99E-07	4.37E-06
Fluorene	Yes	1.69E-06	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	4.68E-06	2.05E-05
Formaldehyde	Yes	8.00E-02	g/bhp-hr	Vendor Guarantee	347	7,973	8,760	6.12E-02	2.68E-01
Hexane (or n-Hexane)	Yes	4.45E-04	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	1.23E-03	5.39E-03
Indeno(1,2,3-c,d)pyrene	Yes	9.93E-09	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	2.75E-08	1.20E-07
Isobutane	No	3.75E-03	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	1.04E-02	4.54E-02
Methanol	Yes	2.48E-03	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	6.86E-03	3.01E-02
Methylcyclohexane	No	3.38E-04	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	9.35E-04	4.10E-03
Methylene Chloride	Yes	1.47E-04	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	4.07E-04	1.78E-03
n-Nonane	No	3.08E-05	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	8.52E-05	3.73E-04
n-Octane	No	7.44E-05	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	2.06E-04	9.02E-04
Naphthalene	Yes	9.63E-05	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	2.66E-04	1.17E-03
PAH	Yes	1.34E-05	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	3.71E-05	1.62E-04
Pentane (or n-Pentane)	No	1.53E-03	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	4.23E-03	1.85E-02
Perylene	Yes	4.97E-09	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	1.38E-08	6.02E-08
Phenanthrene	Yes	3.53E-06	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	9.77E-06	4.28E-05
Phenol	Yes	4.21E-05	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	1.16E-04	5.10E-04
Propane	No	2.87E-02	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	7.94E-02	3.48E-01
Pyrene	No	5.84E-07	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	1.62E-06	7.08E-06
Styrene	Yes	5.48E-05	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	1.52E-04	6.64E-04
Toluene	Yes	9.63E-04	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	2.66E-03	1.17E-02
Vinyl Chloride	Yes	2.47E-05	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	6.83E-05	2.99E-04
Xylene	Yes	2.68E-04	lb/MMBtu	AP-42 Chapter 3.2	347	7,973	8,760	7.41E-04	3.25E-03
Total HAPs								0.13	0.56

Notes:

- AP-42, Chapter 3.2 references are from the July 2000 revision.
- Greenhouse Gas Emissions are calculated using 40 CFR 98 Subpart C Table C-1 and C-2 emission factors.
- Max. Annual Emissions based upon Max. Hourly Emissions @ 8760 hr/yr.
- CO_2 equivalency solved for using Global Warming Potentials found in 40CFR98 Table A-1 (Updated January 2014). GWP CO_2=1, GWP CH_4=25, GWP N_2O=298

Example Equations:

Max. Hourly Emission Rate **(lb/hr)** = Emission Factor **(lb/MMBtu)** x Engine Rating **(bhp)** x BSFC **(Btu/bhph)** x 1 / 1,000,000 **(MMBtu/Btu)**

Hastings Compressor Station

Net Increase to PTEs through Permit Modification

Emission Unit	Ajax Compressor DPC-2803 LE (EN03)		Ajax Compressor DPC-2802 LE (EN04)		Total	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
VOC's	0.84	3.66	0.54	2.35	1.37	6.01
CO	2.39	10.47	1.53	6.70	3.92	17.17
NOx	1.19	5.23	0.77	3.35	1.96	8.58
$PM_{FIL}/PM_{10}/PM_{2.5}$	0.16	0.72	0.11	0.47	0.27	1.19
PM_{CON}	0.04	0.19	0.03	0.12	0.07	0.31
SO_2	0.003	0.01	0.002	0.007	0.00	0.02
CO_2	501.76	2,197.71	323.63	1,417.51	825.39	3,615.22
CH_4	0.01	0.04	0.006	0.03	0.02	0.07
N_2O	0.001	0.004	<0.001	0.003	0.001	0.007
Formaldehyde	0.10	0.42	0.06	0.27	0.16	0.69
Total HAPs	0.20	0.87	0.13	0.56	0.33	1.44
Total CO_2e	502.28	2,199.98	323.96	1,418.97	826.24	3,618.95

GE Oil & Gas
Reciprocating Compression

Manufacturer's Expected Exhaust Emissions and Performance Data

Date: July 28, 2015

Prepared For: Dominion Hastings - LE Max load emissions

Engine: DPC-2802 LE

Ajax, Fuel Injected, Spark Ignited, Naturally Aspirated, 2-stroke lean burn (2SLB)

Specified Conditions:

Site Altitude (FASL)		: 788	
Site Fuel Composition		: Itemized on Page 2	
Ambient Temp For Defining Maximum Load		: 100	Degrees F
Average Ambient Temp For Defining Exhaust Emissions		: 100	Degrees F
Bore x Stroke (in)		: 15 x 16	
No. of Cylinders		: 2	
Site Rated Speed (RPM)		:	440
Exhaust System		:	Premium Catalyst*
Site Rated Load (BHP) (BHP available at engine)		:	347
Site Rated Load (BMEP, psi)		:	55.2
NOx	g/bhp-hr	:	1.0
	ppmvd @ 15% O2	:	69
	lb/hr	:	0.77
	Tpy	:	3.4
CO	g/bhp-hr	:	2.0
	ppmvd @ 15% O2	:	228
	lb/hr	:	1.53
	Tpy	:	6.7
VOC	g/bhp-hr	:	0.7
	ppmvd @ 15% O2	:	51
	lb/hr	:	0.54
	Tpy	:	2.4
H2CO	g/bhp-hr	:	0.08
	ppmvd @ 15% O2	:	8
	lb/hr	:	0.06
	Tpy	:	0.30
BSFC - Btu/Bhph		:	7973
Exhaust Stack Inside Diameter - in		:	13.3
Exhaust Stack Height - in		:	260.00
Exhaust Gas Temp @ Stack - °F		:	577
Exh. Velocity @ Stack - ft /min		:	2961
Exhaust Gas Flow @ Stack - acfm		:	2836
Exhaust Gas Flow @ Stack - lb/min		:	114.6
Exhaust Oxygen Concentration (vol%, dry)		:	14.7
Exhaust Gas Moisture Content (% H2O)		:	6.5

Manufacturer's Expected Exhaust Emissions and Performance Data

Fuel Composition:

Compound	Formula	Mole %
Nitrogen	N2	0.2796
Carbon Dioxide	CO2	0.2476
Oxygen	O2	0.0000
Helium	He	0.0000
Hyd. Sulfide	H2S	0.0000
Methane	CH4	95.1116
Ethane	C2H6	3.9371
Propane	C3H8	0.3289
Iso – Butane	i-C4	0.0406
n - Butane	n-C4	0.0262
Iso - Pentane	i-C5H12	0.0063
n - Pentane	n-C5h12	0.0090
n-Hexane	C6H14	0.0130
n-Heptane	n-C7H16	0.0000
n-Octane	n-C8H18	0.0000
	Total Volume % =	100.00
	NBN =	1.81

The above emissions and performance data is contingent on:

1.) Using a GE supplied Oxidation Catalyst, when specified, and using Catalyst Friendly oil as specified Ajax instruction manual.
2.) Insulated exhaust pipes and Silencer insulated up to the Catalyst.
3.) No changes in the as quoted site conditions per specified site conditions and fuel composition above.
4.) GE Engine must be maintained in good working order per operating specifications outlined in GE engineering specification ES 4019.
5.) GE Engineering approved engine upgrades must meet Ajax specifications and installation guidelines.
6.) Engine operating parameters must be consistent with those specified in the Ajax instruction manual.
7.) Performance tests shall be conducted at 100% of the site rated load (+/-10%)
8.) Test data shall be taken from test ports located in the tailpipe of GE supplied exhaust silencer
9.) Emissions Test protocol shall follow:
    a.) NOx emissions: 40 CFR Part 60, Appendix A, Method 7e
    b.) CO emissions: 40 CFR Part 60, Appendix A, Method 10
    c.) VOC (NMNEHC) emissions: 40 CFR Part 60, Methods 25A and 18 or 40 CFR Part 60 Method 25A and 40 CFR Part 63 Method 320
    d.) HCHO emissions: 40 CFR Part 63, Appendix A, Method 320 or Method 328
10.) Remediation of reported non-conformance to be mutually agreed upon between GE and purchaser.

Manufacturer's Expected Exhaust Emissions and Performance Data

Definition of Terms

NOx = Nitrogen Oxide as NO2
CO = Carbon Monoxide
VOC = Non-methane, Non-ethane and Non-formaldehyde concentration reported as Propane
Note: VOC definition is according to 40 CFR 60 Subpart JJJJ (Spark Ignited NSPS)
H2CO = Formaldehyde
g/bhp-hr = Grams per brake horsepower-hour
ppmvd = Parts per million volume on a dry basis corrected to 15% oxygen
Tpy= Tons per year @ 8760 hrs per year & 1 Ton = 2000 lbs
FASL = Feet Above Sea Level
ACFM = Actual Cubic Feet Per Minute
BSFC = Brake Specific Fuel Consumption, Btu / Bhp-hr, based on LHV
BMEP = Brake Mean Effective Pressure, psi
NBN = Normal Butane Number

*Catalyst Performance is guaranteed for one year.

For additional information, please contact Application Engineering at (405) 670-4121
GE Oil & Gas - Reciprocating Compression, 2101 SE 18th Street Oklahoma City, OK USA

GE Oil & Gas
Reciprocating Compression

Manufacturer's Expected Exhaust Emissions and Performance Data

Date: July 28, 2015

Prepared For: Dominion Hastings - LE maximum load emissions

Engine: DPC-2803 LE

Ajax, Fuel Injected, Spark Ignited, Naturally Aspirated, 2-stroke lean burn (2SLB)

Specified Conditions:

Site Altitude (FASL)		: 788	
Site Fuel Composition		: Itemized on Page 2	
Ambient Temp For Defining Maximum Load		: 100	Degrees F
Average Ambient Temp For Defining Exhaust Emissions		: 100	Degrees F
Bore x Stroke (in)		: 15 x 16	
No. of Cylinders		: 3	
Site Rated Speed (RPM)		:	440
Exhaust System		:	Premium Catalyst*
Site Rated Load (BHP) (BHP available at engine)		:	542
Site Rated Load (BMEP, psi)		:	57.5
NOx	g/bhp-hr	:	1.0
	ppmvd @ 15% O2	:	70
	lb/hr	:	1.19
	Tpy	:	5.2
CO	g/bhp-hr	:	2.0
	ppmvd @ 15% O2	:	230
	lb/hr	:	2.39
	Tpy	:	10.5
VOC	g/bhp-hr	:	0.7
	ppmvd @ 15% O2	:	51
	lb/hr	:	0.84
	Tpy	:	3.7
H2CO	g/bhp-hr	:	0.08
	ppmvd @ 15% O2	:	8
	lb/hr	:	0.10
	Tpy	:	0.40
BSFC - Btu/Bhph		:	7914
Exhaust Stack Inside Diameter - in		:	17.3
Exhaust Stack Height - in		:	241.00
Exhaust Gas Temp @ Stack - °F		:	574
Exh. Velocity @ Stack - ft /min		:	2756
Exhaust Gas Flow @ Stack - acfm		:	4473
Exhaust Gas Flow @ Stack - lb/min		:	171.9
Exhaust Oxygen Concentration (vol%, dry)		:	14.5
Exhaust Gas Moisture Content (% H2O)		:	6.7

Manufacturer's Expected Exhaust Emissions and Performance Data

Fuel Composition:

Compound	Formula	Mole %
Nitrogen	N2	0.2796
Carbon Dioxide	CO2	0.2476
Oxygen	O2	0.0000
Helium	He	0.0000
Hyd. Sulfide	H2S	0.0000
Methane	CH4	95.1116
Ethane	C2H6	3.9371
Propane	C3H8	0.3289
Iso – Butane	i-C4	0.0406
n - Butane	n-C4	0.0262
Iso - Pentane	i-C5H12	0.0063
n - Pentane	n-C5h12	0.0090
n-Hexane	C6H14	0.0130
n-Heptane	n-C7H16	0.0000
n-Octane	n-C8H18	0.0000
	Total Volume % =	100.00
	NBN =	1.81

The above emissions and performance data is contingent on:

1.) Using a GE supplied Oxidation Catalyst, when specified, and using Catalyst Friendly oil as specified Ajax instruction manual.
2.) Insulated exhaust pipes and Silencer insulated up to the Catalyst.
3.) No changes in the as quoted site conditions per specified site conditions and fuel composition above.
4.) GE Engine must be maintained in good working order per operating specifications outlined in GE engineering specification ES 4019.
5.) GE Engineering approved engine upgrades must meet Ajax specifications and installation guidelines.
6.) Engine operating parameters must be consistent with those specified in the Ajax instruction manual.
7.) Performance tests shall be conducted at 100% of the site rated load (+/-10%)
8.) Test data shall be taken from test ports located in the tailpipe of GE supplied exhaust silencer
9.) Emissions Test protocol shall follow:
    a.) NOx emissions: 40 CFR Part 60, Appendix A, Method 7e
    b.) CO emissions: 40 CFR Part 60, Appendix A, Method 10
    c.) VOC (NMNEHC) emissions: 40 CFR Part 60, Methods 25A and 18 or 40 CFR Part 60 Method 25A and 40 CFR Part 63 Method 320
    d.) HCHO emissions: 40 CFR Part 63, Appendix A, Method 320 or Method 328
10.) Remediation of reported non-conformance to be mutually agreed upon between GE and purchaser.

Manufacturer's Expected Exhaust Emissions and Performance Data

Definition of Terms

NOx = Nitrogen Oxide as NO2
CO = Carbon Monoxide
VOC = Non-methane, Non-ethane and Non-formaldehyde concentration reported as Propane
Note: VOC definition is according to 40 CFR 60 Subpart JJJJ (Spark Ignited NSPS)
H2CO = Formaldehyde
g/bhp-hr = Grams per brake horsepower-hour
ppmvd = Parts per million volume on a dry basis corrected to 15% oxygen
Tpy= Tons per year @ 8760 hrs per year & 1 Ton = 2000 lbs
FASL = Feet Above Sea Level
ACFM = Actual Cubic Feet Per Minute
BSFC = Brake Specific Fuel Consumption, Btu / Bhp-hr, based on LHV
BMEP = Brake Mean Effective Pressure, psi
NBN = Normal Butane Number

*Catalyst Performance is guaranteed for one year.

For additional information, please contact Application Engineering at (405) 670-4121
GE Oil & Gas - Reciprocating Compression, 2101 SE 18th Street Oklahoma City, OK USA

Attachment O

MONITORING, REPORTING, AND RECORDKEEPING PLAN

Attachment O

Monitoring, Recordkeeping, Reporting, Testing Plans.

Dominion Transmission, Inc. will comply all of the monitoring, recordkeeping, reporting, and testing requirements established in the issued permit for Hastings Compressor Station.

Attachment P

PUBLIC NOTICE

AIR QUALITY PERMIT NOTICE
Notice of Application

Notice is given that Dominion Transmission, Inc. has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a Modification to a Rule 13 Permit for a compressor station operation located in Pine Grove, Wetzel County, West Virginia. The latitude and longitude coordinates are: 39.54989 and -80.67244.

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

Carbon Monoxide (CO) = 17.17 tpy
Nitrogen Oxides (NO_x) = 8.58 tpy
Particulate Matter (PM_{10}) = 1.19 tpy
Sulfur Dioxide (SO_2) = 0.02 tpy
Volatile Organic Compounds (VOC) = 6.01 tpy
Hazardous Air Pollutants (HAPs) = 1.44 tpy
Formaldehyde = 0.69 tpy
Carbon Dioxide Equivalents (CO_2e) = 3,618.95 tpy

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 XXth day of November, 2015.

By: Dominion Transmission, Inc.
Leslie Hartz
Vice President, Pipeline Construction
500 Dominion Blvd.
Glen Allen, VA 23060

Attachment Q

BUSINESS CONFIDENTIAL CLAIMS

(NOT INCLUDED)

Attachment R

AUTHORITY FORMS

(NOT INCLUDED)

Attachment S

TITLE V PERMIT

Attachment S

Title V Permit Revision Information

1. New Applicable Requirements Summary	
Mark all applicable requirements associated with the changes involved with this permit revision:	
☐ SIP	☐ FIP
☒ Minor source NSR (45CSR13)	☐ PSD (45CSR14)
☐ NESHAP (45CSR15)	☐ Nonattainment NSR (45CSR19)
☒ Section 111 NSPS (Subpart(s) Subpart JJJJ)	☐ Section 112(d) MACT standards (Subpart(s)_
☐ Section 112(g) Case-by-case MACT	☐ 112(r) RMP
☐ Section 112(i) Early reduction of HAP	☐ Consumer/commercial prod. reqts., section 183(e)
☐ Section 129 Standards/Reqts.	☐ Stratospheric ozone (Title VI)
☐ Tank vessel reqt., section 183(f)	☐ Emissions cap 45CSR§30-2.6.1
☐ NAAQS, increments or visibility (temp. sources)	☐ 45CSR27 State enforceable only rule
☒ 45CSR4 State enforceable only rule	☐ Acid Rain (Title IV, 45CSR33)
☐ Emissions Trading and Banking (45CSR28)	☐ Compliance Assurance Monitoring (40CFR64) (1)
☐ NO_x Budget Trading Program Non-EGUs (45CSR1)	☐ NO_x Budget Trading Program EGUs (45CSR26)
(1) If this box is checked, please include **Compliance Assurance Monitoring (CAM) Form(s)** for each Pollutants Specific Emission Unit (PSEU) (See Attachment H to Title V Application).	

2. Non Applicability Determinations

List all requirements, which the source has determined not applicable to this permit revision and for which a permit shield is requested. The listing shall also include the rule citation and a rationale for the determination.

See Introduction for complete state and federal applicability determination.

☐ **Permit Shield Requested** *(not applicable to Minor Modifications)*

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

3. Suggested Title V Draft Permit Language

Are there any changes involved with this Title V Permit revision outside of the scope of the NSR Permit revision? ☐ Yes ☒ No If Yes, describe the changes below.

Also, please provide **Suggested Title V Draft Permit language** for the proposed Title V Permit revision (including all applicable requirements associated with the permit revision and any associated monitoring /recordkeeping/ reporting requirements), OR attach a marked up pages of current Title V Permit. Please include appropriate citations (Permit or Consent Order number, condition number and/or rule citation (e.g. 45CSR§7-4.1)) for those requirements being added / revised.

4. Active NSR Permits/Permit Determinations/Consent Orders Associated With This Permit Revision

Permit or Consent Order Number	Date of Issuance	Permit/Consent Order Condition Number
R30-10300006-2011	07/11/2012	N/A
R13-2555B	09/17/2012	N/A
R13-2870	02/14/2011	N/A
R13-3249	10/13/2015	N/A

5. Inactive NSR Permits/Obsolete Permit or Consent Orders Conditions Associated With This Revision

Permit or Consent Order Number	Date of Issuance	Permit/Consent Order Condition Number
NA	/ /	

6. Change in Potential Emissions

Pollutant	Change in Potential Emissions (+ or -), TPY
CO	17.17
NOx	8.58
PM_{FIL}	1.19
PM_{CON}	0.31
SO2	0.02
Total VOC	6.01
Total HAP	1.44

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

7. Certification For Use Of Minor Modification Procedures ***(Required Only for Minor Modification Requests)***

Note	*This certification must be signed by a responsible official. Applications without a signed certification will be returned as incomplete. The criteria for allowing the use of Minor Modification Procedures are as follows.*

i. Proposed changes do not violate any applicable requirement;

ii. Proposed changes do not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the permit;

iii. Proposed changes do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient air quality impacts, or a visibility increment analysis;

iv. Proposed changes do not seek to establish or change a permit term or condition for which there is no underlying applicable requirement and which permit or condition has been used to avoid an applicable requirement to which the source would otherwise be subject (synthetic minor). Such terms and conditions include, but are not limited to a federally enforceable emissions cap used to avoid classification as a modification under any provision of Title I or any alternative emissions limit approved pursuant to regulations promulgated under § 112(j)(5) of the Clean Air Act;

v. Proposed changes do not involve preconstruction review under Title I of the Clean Air Act or 45CSR14 and 45CSR19;

vi. Proposed changes are not required under any rule of the Director to be processed as a significant modification;

Notwithstanding subparagraph 45CSR§30-6.5.a.1.A. (items i through vi above), minor permit modification procedures may be used for permit modifications involving the use of economic incentives, marketable permits, emissions trading, and other similar approaches, to the extent that such minor permit modification procedures are explicitly provided for in rules of the Director which are approved by the U.S. EPA as a part of the State Implementation Plan under the Clean Air Act, or which may be otherwise provided for in the Title V operating permit issued under 45CSR30.

Pursuant to 45CSR§30-6.5.a.2.C., the proposed modification contained herein meets the criteria for use of Minor permit modification procedures as set forth in Section 45CSR§30-6.5.a.1.A. The use of Minor permit modification procedures are hereby requested for processing of this application.

(Signed): _____ *(Please use blue ink)* Date: 11 / 19 / 15 *(Please use blue ink)*

Named (typed): **Leslie Hartz** Title: **Vice President, Pipeline Construction**

Note: Please check if the following included (if applicable):

☐	Compliance Assurance Monitoring Form(s)
☐	Suggested Title V Draft Permit Language

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