TransCanada
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400 E. Kaliste Saloon Rd. Suite 4500, Lafayette, LA 70508
Phone: 337-241-0686
lacey_ivey@transcanada.com

March 6, 2018

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

RE: Construction/Modification Application (45CSR13) and
Significant Modification Application (Revision to Title V)
Columbia Gas Transmission, LLC
Adaline Compressor Station (Facility ID#051-00100)
Title V Permit No. R30-05100100-2017

Dear Mr. Durham,

Attached is an application for the use of significant modification procedures to revise Title V permit R30-05100100-2017 for the Columbia Gas Transmission, LLC (Columbia) – Adaline Compressor Station, located in Marshall County, West Virginia. This application consists of a Regulation 13 application package requesting the installation of a replacement flare associated with the three existing DEG dehydrator units at the Station. No changes to applicable requirements are necessitated by this modification.

Based on this change, the Station will continue to be classified as a major source under Title V regulations (annual potential emissions of NO_x and CO are more than 100 tons per year). The potential to emit from the proposed modification is less than Prevention of Significant Deterioration (PSD) significant emission levels.

This application package includes all of the applicable forms, calculations and a check for $1,000 for the application fee. Although the dehydration units the replacement flare is associated with is subject to NESHAP Subpart HHH, replacement of the flare will not affect the NESHAP Subpart HHH requirements. Therefore, Columbia believes that no fee should be assessed for NESHAP.

Should you have any questions or need additional information, please feel free to contact me at (337) 241-0686 or via email at lacey_ivey@transcanada.com.

Sincerely,

Lacey A. Ivey
Principal Air
TransCanada

Attachments

APPLICATION FOR 45 CSR 13
CONSTRUCTION PERMIT
AND
TITLE V PERMIT MODIFICATION

Columbia Gas Transmission, LLC
Adaline Compressor Station
Marshall County, West Virginia
Title V Permit No. R30-5100100-2017

March 2018

Table of Contents

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):*
Columbia Gas Transmission, LLC

2. Federal Employer ID No. ***(FEIN):***
310802435

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

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

5A. Applicant's mailing address:
Columbia Gas Transmission, LLC
1700 MacCorkle Ave, SE
Charleston, WV 25314

5B. Facility's present physical address:
18123 Fish Creek Rd.,
Cameron, WV 26033

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: Columbia Pipeline Group, 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: Application is for replacement of equipment at an existing natural gas compressor station which Columbia Gas owns and operates.

➪ 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 compressor station

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

11A. DAQ Plant ID No. (for existing facilities only):
051-00100

11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only):
R30-05100100-2017

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**.

12.B. New site address (if applicable):	12C. Nearest city or town: Cameron	12D. County: Marshall
12.E. UTM Northing (KM): 4,401.86	12F. UTM Easting (KM): 530.456	12G. UTM Zone: 17

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

Replacement of the dehydrator flare

14A. Provide the date of anticipated installation or change: 6 / 1 / 2018 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: 10/ 1 / 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:
24 Hours Per Day 7 Days Per Week 52 Weeks Per Year

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 One (1) dehydrator flare

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

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: Delegation of Authority Letter provided in lieu of Authority Form.

☐ 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 E Wood DATE: 2/20/18
(Please use blue ink) *(Please use blue ink)*

35B. Printed name of signee: Eugene Wood		35C. Title: Manager of Operations
35D. E-mail: ugene_wood@transcanada.com	36E. Phone: 724-223-2797	36F. FAX:
36A. Printed name of contact person (if different from above): Lacey Ivey		36B. Title: Principal Air
36C. E-mail: lacey_ivey@transcanada.com	36D. Phone: 337-247-0686	36E. FAX:

PLEASE CHECK ALL APPLICABLE ATTACHMENTS INCLUDED WITH THIS PERMIT APPLICATION:

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

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

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

- ☐ *Forward 1 copy of the application to the Title V Permitting Group and:*
- ☐ *For Title V Administrative Amendments:*
  - ☐ *NSR permit writer should notify Title V permit writer of draft permit,*
- ☐ *For Title V Minor Modifications:*
  - ☐ *Title V permit writer should send appropriate notification to EPA and affected states within 5 days of receipt,*
  - ☐ *NSR permit writer should notify Title V permit writer of draft permit.*
- ☐ *For Title V Significant Modifications processed in parallel with NSR Permit revision:*
  - ☐ *NSR permit writer should notify a Title V permit writer of draft permit,*
  - ☐ *Public notice should reference both 45CSR13 and Title V permits,*
  - ☐ *EPA has 45 day review period of a draft permit.*

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

Attachment A

Business Certificate

WEST VIRGINIA
STATE TAX DEPARTMENT
BUSINESS REGISTRATION CERTIFICATE

ISSUED TO:
COLUMBIA GAS TRANSMISSION LLC
5151 SAN FELIPE ST 2500
HOUSTON, TX 77056-3639

BUSINESS REGISTRATION ACCOUNT NUMBER: **1025-1555**

This certificate is issued on: 07/1/2011

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.

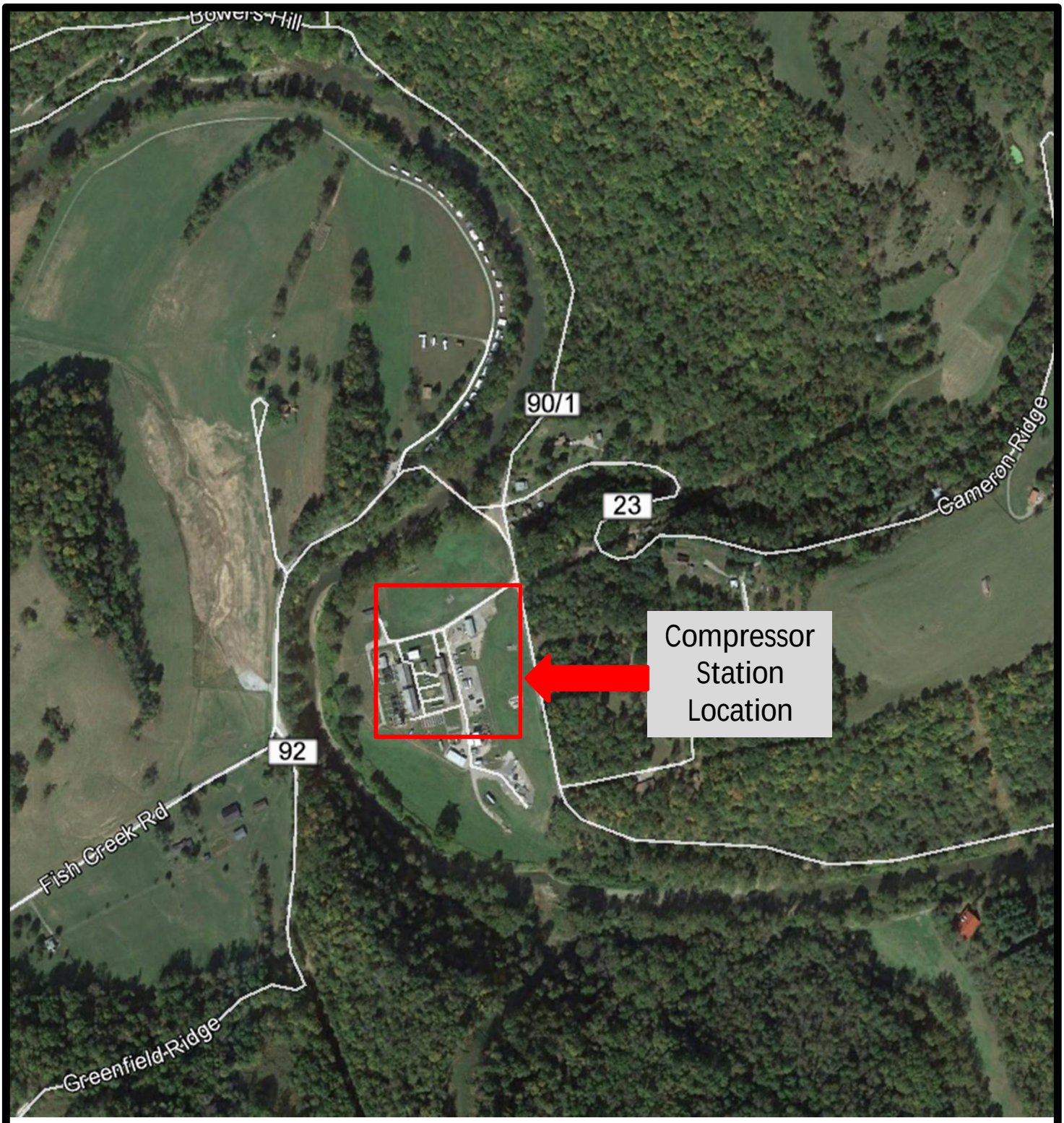
Change in name or change of location shall be considered a cessation of the business and a new certificate shall be required.

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.

atL006 v.4
L1430813824

Attachment B

Map



From intersection in Cameron, travel west a short distance to a "Y" intersection. Go left, cross bridge, then up a hill on a brick road. Proceed south along this road (Cameron Ridge Rd) for approximately 7 miles to station that is on left side of the road and partially visible.

	Attachment B
Date: March 2018	Facility Map Adaline Compressor Station

Attachment C

Installation and Start Up Schedule

Installation and Start Up Schedule

Emission Point	Change	Effective date of change	Start Up Date
FL1 – Dehydrator Flare	Removal	June 2018	
FL2 – Dehydrator Flare	Installation	June 2018	October 2018

Attachment D

Regulatory Discussion

1.0 INTRODUCTION

1.1 Summary and Conclusions

Columbia Gas Transmission, LLC (Columbia) operates the Adaline Compressor Station (the "Station") under Title V Permit No. R30-05100100-2017. Columbia is proposing to replace the dehydrator flare (FL1) associated with the three existing dehydration units. This equipment change (the "Project") is scheduled to occur in June 2018. This application package contains Columbia's application to:

- Remove the Natco flare (FL1) associated with the three existing dehydration units;
- Add a new ETI flare (FL2) to be used as the control device for the three existing dehydration units; and
- Modify the Station's Title V permit to reflect this change.

An analysis of federal and state regulations was performed to identify applicable air quality regulations. Federal and state regulations potentially applying to the proposed modifications are summarized in Section 3.

1.2 Report Organization

The existing Station and proposed Project are described in Section 2.0. An analysis of applicable regulations and proposed compliance procedures is presented in Section 3.0. Completed permit application forms, including emission estimating basis, emission calculations, and supporting data are contained within this application package.

2.0 PROJECT DESCRIPTION

2.1 Description of Existing Facility

Columbia's Adaline Compressor Station is located in Marshall County, West Virginia, between the towns of Cameron and Rockport. The Station receives natural gas via pipeline from an upstream compressor station, compresses it using reciprocating internal combustion engines (RICE) and a natural gas-fired turbine, and transmits it via pipeline to a downstream station. The Station is covered by Standard Industrial Classification (SIC) 4922 and operates under Title V Permit No. R30-05100100-2017. The Station has the potential to operate seven (7) days per week, twenty-four (24) hours per day.

The Station currently operates five (5) RICE and one (1) a natural gas-fired turbine, including:

- Three (3) 880-hp natural gas-fired, Clark HRA-8, 2-cycle, lean-burn RICE with installation dates in 1954 (2 units) and 1956;
- Two (1) 2,000-hp natural gas-fired, Clark TLA-6, 2-cycle, lean-burn RICE with installation dates in 1961; and
- One (1) 1,080-hp natural gas-fired, Solar Saturn T-1001 compressor turbine with installation date in 1966.

Auxiliary equipment at the Station includes one (1) 440-hp natural gas-fired Waukesha emergency generator, one (1) 1.00-MMBtu/hr natural gas-fired line heater, one (1) 3.48 MMBtu/hr heating system boiler, and numerous storage tanks for various low pressure liquids. Additionally, the Station operates three (3) DEG dehydration units with associated reboilers [three (3) at 0.55 MMBtu/hr each] and a common flare (FL1) rated at 2.5 MMBtu/hr.

A plot plan of the Station is provided as Attachment E.

Based on the current annual potential to emit (PTE) oxides of nitrogen (NO_x) and carbon monoxide (CO) as presented in Table N-1 of Attachment N, the existing Station is classified as a major source under New Source Review (NSR) regulations. Also provided in Table N-1 are the current potential emissions of volatile organic compounds (VOC), greenhouse gases as carbon dioxide equivalents (CO_2e), sulfur dioxide (SO_2), respirable particulate matter with an aerodynamic diameter of less than or equal to 10 microns (PM_{10}), fine particulate matter with an aerodynamic diameter of less than or equal to 2.5 microns ($PM_{2.5}$), formaldehyde [CH_2O, the primary hazardous air pollutant (HAP)], and total HAPs. The existing Station is a major source of HAPs. Although the aggregate of potential HAP emissions are currently less than 25 tons per year (tpy), potential emissions of CH_2O exceed the 10 tpy major source threshold for an individual HAP.

Marshall County is classified as attainment or unclassifiable for all National Ambient Air Quality Standards. There are no Class I areas located within 100 kilometers of the Station.

2.2 Proposed Modification

Columbia is proposing to:

- Remove the Natco flare (FL1) associated with the three existing dehydration units; and
- Add a new ETI flare (FL2) to be used as the control device for the three existing dehydration units; and

- The proposed flare is designated Emission Point ID FL2. Attachment F includes a process flow diagram showing the existing and Project equipment.

Potential emissions from the flare are based on AP-42 emission factors. Emissions from the DEG dehydrators and associated reboilers will remain unchanged. Additional flare emission factor data and calculations are presented in Attachment N.

No other changes in Station equipment are currently being proposed. The target date for starting construction is June 2018. Initial commercial operation is scheduled for October 2018.

3.0 REGULATORY ANALYSIS AND COMPLIANCE METHODS

This section reviews the applicability of state and federal regulations potentially affecting the new emission unit and proposed compliance procedures. Supporting calculations are included in Attachment N.

3.1 Prevention of Significant Deterioration

West Virginia implements the Prevention of Significant Deterioration (PSD) permitting program pursuant to the USEPA-approved West Virginia State Implementation Plan and in accordance with Regulation 14 (a.k.a., Series 14) of Title 45 of the Code of State Rules (45 CSR 14). Regulation 14 closely mirrors federal PSD regulations at 40 CFR §52.21. The Station is a major source under PSD rules per §45-14-2.43. For a major stationary source such as the existing Station, PSD requirements apply to projects that have the potential to increase annual emissions beyond defined significance levels. This potential is evaluated as a two-step process. First, any emissions increase associated with the project itself is evaluated. If the project will result in a significant emission increase (as defined at §45-14-2.74 and -2.75), then the net emission increase, considering all contemporaneous equipment changes must be evaluated based on the definition of net emission increase at §45-14-2.46.

Per §45-14-2.80.e.1, beginning July 1, 2011, new major stationary sources with the potential to emit greater than or equal to 100,000 tpy of CO_2e were required to meet the requirements set forth in the PSD program. The provisions of §45-14-2.80.f, however, clarify that this portion of the rule ceases to be effective under certain circumstances, including a federal court decision invalidating provisions of the rule. On June 23, 2014, the U.S. Supreme Court issued a decision that greenhouse gas emissions could not be a basis for PSD or Title V applicability, and this decision was followed by a July 24, 2014 memorandum from the USEPA that stated that the USEPA will comply with the Court's decision and will not apply or enforce regulations that would require a PSD permit where PSD would be applicable solely because of GHG emissions. Therefore, CO_2e emissions are no longer considered for PSD applicability.

Emissions calculations for the PSD applicability analysis are provided in Attachment N, and potential annual emissions associated with the Project are summarized in Table N-1. Project-related emissions of all PSD-regulated pollutants are below the PSD significant increase thresholds; therefore, PSD is not applicable to emissions increases at Step 1 of the PSD applicability procedure.

3.2 New Source Performance Standards

New Source Performance Standards (NSPS) apply to new, modified, or reconstructed stationary sources meeting criteria established in 40 CFR Part 60. This Section describes requirements that apply to the proposed units at the Adaline Compressor Station.

Subpart OOOO (Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution) is not applicable to the proposed new equipment (no affected facilities proposed) per 40 CFR §60.5365.

Columbia requests a permit shield for Subpart OOOO.

3.3 National Emission Standards for Hazardous Air Pollutants

National Emission Standards for Hazardous Air Pollutants (NESHAP) are promulgated under 40 CFR Part 63 for specific processes and HAP emissions. The Station is classified as a major source of HAP emissions and will remain so after the Project.[1]

3.3.1 Major Sources: Natural Gas Transmission and Storage Facilities (40 CFR 63 Subpart HHH)

The Station is subject to NESHAP for Natural Gas Transmission and Storage Facilities promulgated under 40 CFR 63 Subpart HHH, which applies to new and existing glycol dehydration units located at natural gas transmission and storage facilities that transport or store natural gas prior to entering to pipeline to a final end user and that are major sources of HAPs. The Station will continue to comply with the applicable requirements in this subpart as outlined in Title V Permit No. R30-05100100-2017.

3.4 Compliance Assurance Monitoring (40 CFR 64)

Compliance Assurance Monitoring (CAM) requirements in 40 CFR Part 64 are intended to assure that emission control equipment is properly operated and maintained. CAM applies to emissions units that:

1. have an emission limitation,
2. use a control device to comply with the emissions limit, and
3. have sufficient emissions to be classified as a major emission source under 40 CFR Part 70.

As defined in 40 CFR §64.1, "control device" means add-on control equipment other than inherent process equipment that is used to destroy or remove air pollutant(s) prior to discharge to the atmosphere. The definition also states that "a control device does not include use of combustion or other process design features or characteristics."

Exemptions specified in 40 CFR §64.2(b) include units complying with an emission limitation or standard proposed by the USEPA after November 15, 1990 pursuant to Section 111 or 112 of the Clean Air Act (NSPS or NESHAP).

Potential emissions from the dehydrators are less than the Part 70 major source threshold specified in §70.2. Additionally, they are subject to 40 CFR 63 Subpart HHH; therefore, CAM is not applicable.

3.5 Prevention and Control of Emission of Smoke and Particulate Matter (45 CSR 2)

West Virginia Regulation 45 CSR 2 requires that smoke and particulate matter emissions from any fuel-burning unit (providing heat or power by indirect heat transfer) not exceed opacity levels of 10 percent based on a six-minute block average (per §45-2-3.1). The proposed equipment (e.g., flare) is inherently compliant with this requirement by combusting only pipeline quality natural gas.

3.6 Prevention and Control of Emission of Sulfur Dioxide (45 CSR 10)

West Virginia Regulation 45 CSR 10 limits SO_2 emissions from fuel-burning units, manufacturing processes, and combustion of refinery or process gas streams. The flare is not considered a fuel-burning unit per the definition in §45-10-2. Additionally, the Station is not defined as a manufacturing process and does not combust refinery or process gas streams. Therefore, 45 CSR 10 does not apply to the Project.

[1] Per 40 CFR §63.2, a major source of HAPs is defined as a stationary source or group of sources with the potential to emit 10 tpy or more of any HAP or 25 tpy or more of any combination of HAPs.

3.7 Pre-construction Permitting under West Virginia Air Regulation 13 (45 CSR 13)

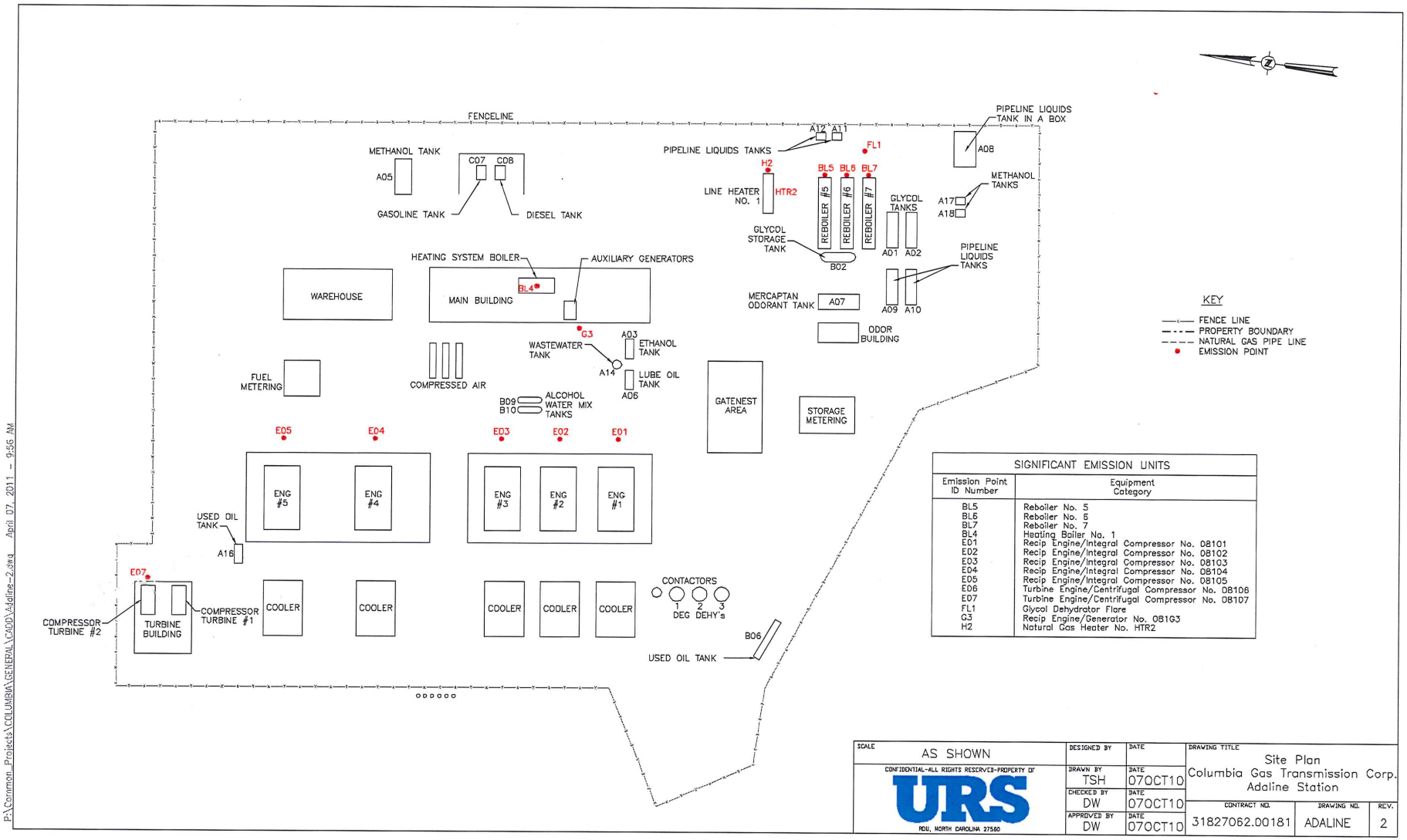
Because neither the potential increase in emissions nor the net emissions increase from the Project exceeds PSD significance levels, the Project is not classified as major for PSD purposes and is subject to the permitting requirements in 45 CSR 13. This document contains the information required by this permitting program.

3.8 Requirements for Operating Permits (45 CSR 30)

After this Project, the Adaline Compressor Station will continue to be classified as a major source under Title V regulations. A significant modification application to revise the Station's Title V permit is being submitted to WVDAQ as part of the application package.

Attachment E

Plot Plan



SIGNIFICANT EMISSION UNITS	
Emission Point ID Number	Equipment Category
BL5	Reboiler No. 5
BL6	Reboiler No. 6
BL7	Reboiler No. 7
BL4	Heating Boiler No. 1
ED1	Recip Engine/Integral Compressor No. DB101
ED2	Recip Engine/Integral Compressor No. DB102
ED3	Recip Engine/Integral Compressor No. DB103
ED4	Recip Engine/Integral Compressor No. DB104
ED5	Recip Engine/Integral Compressor No. DB105
ED6	Turbine Engine/Centrifugal Compressor No. DB106
ED7	Turbine Engine/Centrifugal Compressor No. DB107
FL1	Glycol Dehydrator Flare
G3	Recip Engine/Generator No. DB1G3
H2	Natural Gas Heater No. HTR2

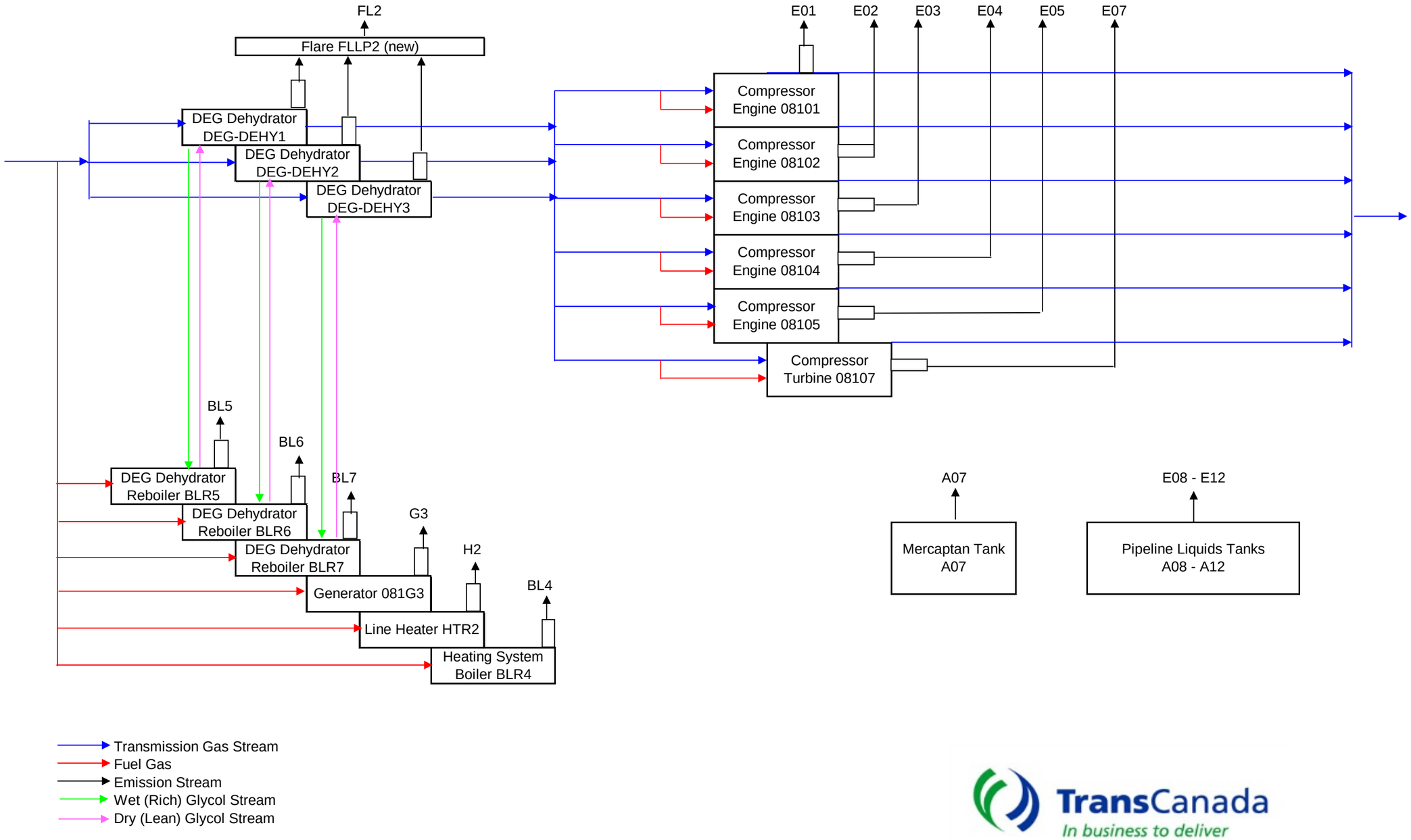
SCALE: AS SHOWN	DESIGNED BY	DATE	DRAWING TITLE: Site Plan Columbia Gas Transmission Corp. Adaline Station
CONFIDENTIAL-ALL RIGHTS RESERVED-PROPERTY OF URS ROU, NORTH CAROLINA 27560	DRAWN BY: TSH	DATE: 07OCT10	
	CHECKED BY: DW	DATE: 07OCT10	
	APPROVED BY: DW	DATE: 07OCT10	
	CONTRACT NO.: 31827062.00181	DRAWING NO.: ADALINE	REV.: 2

P:\Common_Projects\COLUMBIA\GENERAL\CADD\Adaline-2.dwg April 07, 2011 - 9:56 AM

Attachment F

Detailed Process Flow Diagram

ATTACHMENT F
ADALINE COMPRESSOR STATION PROCESS FLOW DIAGRAM



TransCanada
In business to deliver

Attachment G

Process Description

Process Description

Pipeline transmission of natural gas requires that the gas be compressed. At the Adaline Compressor Station, one (1) natural gas-fired turbine and five (5) reciprocating internal combustion engines (RICE) are used to drive centrifugal gas compressors. Auxiliary equipment at the Station includes one (1) natural gas-fired emergency generator, one (1) line heater, one (1) heating system boiler, and numerous insignificant tanks. Additionally, the Station operates three (3) DEG dehydration units with associated reboilers and a common flare.

This Project includes the replacement of the flare associated with the three DEG dehydration units with a new flare having a capacity of 6.0 MMBtu/hr. Consistent with the existing flare, the replacement flare will have a 98% control efficiency for volatile organic compounds and hazardous air pollutants. Additional information on emissions is provided in Attachment N to this application.

Attachment H

SDSs

No new processes or chemicals will be added to the compressor station as a result of this project. Therefore, the Department can continue to rely on the SDS package submitted with the prior application.

Attachment I

Emission Units 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]
BLR4	BL4	Heating System Boiler; American Standard Model #1-B-J-3	1961	3.48 MMBtu/hr	Existing, remains in service	-
HTR2	H2	Natural Gas Heater; BS&B Model #70S-2	1956	1.0 MMBtu/hr	Existing, remains in service	-
BLR5	BL5	DEG Dehydrator Reboiler	2010	0.55 MMBtu/hr	Existing, remains in service	-
BLR6	BL6	DEG Dehydrator Reboiler	2010	0.55 MMBtu/hr	Existing, remains in service	-
BLR7	BL7	DEG Dehydrator Reboiler	2010	0.55 MMBtu/hr	Existing, remains in service	-
08101	E01	Reciprocating Engine/Integral Compressor; Clark HRA-8; 2-cycle, lean burn	1954	880 hp	Existing, remains in service	-
08102	E02	Reciprocating Engine/Integral Compressor; Clark HRA-8; 2-cycle, lean burn	1954	880 hp	Existing, remains in service	-
08103	E03	Reciprocating Engine/Integral Compressor; Clark HRA-8; 2-cycle, lean burn	1956	880 hp	Existing, remains in service	-
08104	E04	Reciprocating Engine/Integral Compressor; Clark TLA-6; 2-cycle, lean burn	1961	2,000 hp	Existing, remains in service	-
08105	E05	Reciprocating Engine/Integral Compressor; Clark TLA-6; 2-cycle, lean burn	1961	2,000 hp	Existing, remains in service	-
081G3	G3	Reciprocating Engine/Generator; Waukesha VGF18GL; 4-cycle, lean burn; Emergency	1998	440 hp	Existing, remains in service	-
08107	E07	Turbine Engine/Centrifugal Compressor; Solar Saturn T-1001	1966	1,080 hp	Existing, remains in service	-

[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 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]
A07	A07	Mercaptan Odorant, Double Wall, Horiz., Above Ground Tank	1966	2,000 gal	Existing, remains in service	-
A11	E11	Pipeline Liquids Tank	1956	5,014 gal	Existing, remains in service	-
A12	E12	Pipeline Liquids Tank	1956	5,014 gal	Existing, remains in service	-
A08	E08	Pipeline Liquids Tank	1954	2,000 gal	Existing, remains in service	-
A09	E09	Pipeline Liquids Tank	1954	2,000 gal	Existing, remains in service	-
A10	E10	Pipeline Liquids Tank	1954	2,000 gal	Existing, remains in service	-
DEG-DEHY1	FL2	DEG Dehydrator; BS&B Contact Tower, 6-bubble cap trays	1985	117 MMscf/d	Existing, remains in service	FLLP2 ETI 6.0 MMBtu/hr
DEG-DEHY2	FL2	DEG Dehydrator; BS&B Contact Tower, 6-bubble cap trays	1984	117 MMscf/d	Existing, remains in service	FLLP2 ETI 6.0 MMBtu/hr
DEG-DEHY3	FL2	DEG Dehydrator; BS&B Contact Tower, 6-bubble cap trays	1984	117 MMscf/d	Existing, remains in service	FLLP2 ETI 6.0 MMBtu/hr
FLLP1	FL1	Dehydrator Flare; NATCO; Model # SHV-4.0	1998	2.5 MMBtu/hr	Removal, 2018	N/A
FLLP2	FL2	Dehydrator Flare; ETI	2018	6.0 MMBtu/hr	New, 2018	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] (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			
E01	Upward vertical stack	08101		-		-	-	NO_x	57.60	114.48			Gas	EE	
								CO	5.37	10.72			Gas	EE	
								VOC	1.10	4.39			Gas	EE	
								SO_2	0.53	0.03			Gas	EE	
								PM	0.44	1.77			Solid	EE	
								CH_2O	0.51	2.02			Gas	EE	
E02	Upward vertical stack	08102		-		-	-	NO_x	57.60	114.48			Gas	EE	
								CO	5.37	10.72			Gas	EE	
								VOC	1.10	4.39			Gas	EE	
								SO_2	0.53	0.03			Gas	EE	
								PM	0.44	1.77			Solid	EE	
								CH_2O	0.51	2.02			Gas	EE	
E03	Upward vertical stack	08103		-		-	-	NO_x	57.60	114.48			Gas	EE	
								CO	5.37	10.72			Gas	EE	
								VOC	1.10	4.39			Gas	EE	
								SO_2	0.53	0.03			Gas	EE	
								PM	0.44	1.77			Solid	EE	
								CH_2O	0.51	2.02			Gas	EE	
E04	Upward vertical stack	08104		-		-	-	NO_x	140.43	239.15			Gas	EE	
								CO	24.07	40.91			Gas	EE	
								VOC	2.59	8.83			Gas	EE	
								SO_2	1.23	0.05			Gas	EE	
								PM	1.04	3.55			Solid	EE	
								CH_2O	1.19	4.06			Gas	EE	
E05	Upward vertical stack	08105		-		-	-	NO_x	140.43	239.15			Gas	EE	
								CO	24.07	40.91			Gas	EE	
								VOC	2.59	8.83			Gas	EE	
								SO_2	1.23	0.05			Gas	EE	
								PM	1.04	3.55			Solid	EE	
								CH_2O	1.19	4.06			Gas	EE	

Attachment J
EMISSION POINTS DATA SUMMARY SHEET

Table 1: Emissions Data

Emission Point ID No. *(Must match Emission Units Table & Plot Plan)*	Emission Point Type[1]	Emission Unit Vented Through This Point *(Must match Emission Units Table & Plot Plan)*		Air Pollution Control Device *(Must match Emission Units Table & Plot Plan)*		Vent Time for Emission Unit *(chemical processes only)*		All Regulated Pollutants - Chemical Name/CAS[3] *(Speciate VOCs & HAPS)*	Maximum Potential Uncontrolled Emissions [4]		Maximum Potential Controlled Emissions [5]		Emission Form or Phase *(At exit conditions, Solid, Liquid or Gas/Vapor)*	Est. Method Used [6]	Emission Concentration [7] (ppmv or mg/m^3)
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
E07	Upward vertical stack	08107		-		-	-	NO_x	4.78	15.61			Gas	EE	
								CO	7.39	9.46			Gas	EE	
								VOC	3.28	2.40			Gas	EE	
								SO_2	1.13	0.05			Gas	EE	
								PM	0.13	0.50			Solid	EE	
								CH_2O	0.01	0.05			Gas	EE	
G3		081G3		-		-	-	NO_x	2.52	0.63			Gas	EE	
								CO	1.70	0.43			Gas	EE	
								VOC	0.73	0.18			Gas	EE	
								SO_2	0.20	0.0006			Gas	EE	
								PM	0.04	0.01			Solid	EE	
								CH_2O	0.19	0.05			Gas	EE	
H2		HTR2		-		-	-	NO_x	0.10	0.43			Gas	EE	
								CO	0.08	0.36			Gas	EE	
								VOC	0.01	0.02			Gas	EE	
								SO_2	0.06	0.003			Gas	EE	
								PM	0.01	0.03			Solid	EE	
								CH_2O	0.0001	0.0003			Gas	EE	
BL4		BLR4						NO_x	0.34	1.49			Gas	EE	
								CO	0.29	1.26			Gas	EE	
								VOC	0.02	0.08			Gas	EE	
								SO_2	0.20	0.01			Gas	EE	
								PM	0.03	0.11			Solid	EE	
								CH_2O	0.0003	0.001			Gas	EE	
BL5		BLR5		-		-	-	NO_x	0.05	0.24			Gas	EE	
								CO	0.05	0.20			Gas	EE	
								VOC	0.003	0.01			Gas	EE	
								SO_2	0.03	0.002			Gas	EE	
								PM	0.004	0.02			Solid	EE	
								CH_2O	0.00004	0.0002			Gas	EE	

Attachment J
EMISSION POINTS DATA SUMMARY SHEET

Table 1: Emissions Data

Emission Point ID No. *(Must match Emission Units Table & Plot Plan)*	Emission Point Type[1]	Emission Unit Vented Through This Point *(Must match Emission Units Table & Plot Plan)*		Air Pollution Control Device *(Must match Emission Units Table & Plot Plan)*		Vent Time for Emission Unit *(chemical processes only)*		All Regulated Pollutants - Chemical Name/CAS[3] *(Speciate VOCs & HAPS)*	Maximum Potential Uncontrolled Emissions [4]		Maximum Potential Controlled Emissions [5]		Emission Form or Phase *(At exit conditions, Solid, Liquid or Gas/Vapor)*	Est. Method Used [6]	Emission Concentration [7] (ppmv or mg/m^3)
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
BL6	Upward vertical stack	BLR6		-		-	-	NO_x	0.05	0.24			Gas	EE	
								CO	0.05	0.20			Gas	EE	
								VOC	0.003	0.01			Gas	EE	
								SO_2	0.03	0.002			Gas	EE	
								PM	0.004	0.02			Solid	EE	
								CH_2O	0.00004	0.0002			Gas	EE	
BL7		BLR7		-		-	-	NO_x	0.05	0.24			Gas	EE	
								CO	0.05	0.20			Gas	EE	
								VOC	0.003	0.01			Gas	EE	
								SO_2	0.03	0.002			Gas	EE	
								PM	0.004	0.02			Solid	EE	
								CH_2O	0.00004	0.0002			Gas	EE	
FL2		DEG-DEHY 1		FLLP 2	Flare	-	-	NO_x	-	-	-	-	Gas	EE	
								CO	-	-	-	-	Gas	EE	
								VOC	10.05	44.02	0.20	0.88	Gas	EE	
								SO_2	-	-	-	-	Gas	EE	
								PM	-	-	-	-	Solid	EE	
								CH_2O	-	-	-	-	Gas	EE	
FL2		DEG-DEHY 2		FLLP 2	Flare	-	-	NO_x	-	-	-	-	Gas	EE	
								CO	-	-	-	-	Gas	EE	
								VOC	10.05	44.02	0.20	0.88	Gas	EE	
								SO_2	-	-	-	-	Gas	EE	
								PM	-	-	-	-	Solid	EE	
								CH_2O	-	-	-	-	Gas	EE	
FL2		DEG-DEHY 3		FLLP 2	Flare	-	-	NO_x	-	-	-	-	Gas	EE	
								CO	-	-	-	-	Gas	EE	
								VOC	10.05	44.02	0.20	0.88	Gas	EE	
								SO_2	-	-	-	-	Gas	EE	
								PM	-	-	-	-	Solid	EE	
								CH_2O	-	-	-	-	Gas	EE	

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			
FL2		FLLP2		-		-	-	NO_x	0.41	1.79			Gas	EE	
								CO	1.86	8.15			Gas	EE	
								VOC	3.96	17.34			Gas	EE	
								SO_2	0.34	0.02			Gas	EE	
								PM	0.04	0.20			Solid	EE	
								CH_2O	0.0004	0.002			Gas	EE	
A07		A07		-		-	-	NO_x	-	-			Gas	EE	
								CO	-	-			Gas	EE	
								VOC	0.02	0.08			Gas	EE	
								SO_2	-	-			Gas	EE	
								PM	-	-			Solid	EE	
								CH_2O	-	-			Gas	EE	
E08		A08		-		-	-	NO_x	-	-			Gas	EE	
								CO	-	-			Gas	EE	
								VOC	0.05	0.22			Gas	EE	
								SO_2	-	-			Gas	EE	
								PM	-	-			Solid	EE	
								CH_2O	-	-			Gas	EE	
E09		A09		-		-	-	NO_x	-	-			Gas	EE	
								CO	-	-			Gas	EE	
								VOC	0.05	0.22			Gas	EE	
								SO_2	-	-			Gas	EE	
								PM	-	-			Solid	EE	
								CH_2O	-	-			Gas	EE	
E10		A10						NO_x	-	-			Gas	EE	
								CO	-	-			Gas	EE	
								VOC	0.05	0.22			Gas	EE	
								SO_2	-	-			Gas	EE	
								PM	-	-			Solid	EE	
								CH_2O	-	-			Gas	EE	

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			
E11		A11		-		-	-	NO_x	-	-			Gas	EE	
								CO	-	-			Gas	EE	
								VOC	0.11	0.46			Gas	EE	
								SO_2	-	-			Gas	EE	
								PM	-	-			Solid	EE	
								CH_2O	-	-			Gas	EE	
E12		A12		-		-	-	NO_x	-	-			Gas	EE	
								CO	-	-			Gas	EE	
								VOC	0.11	0.46			Gas	EE	
								SO_2	-	-			Gas	EE	
								PM	-	-			Solid	EE	
								CH_2O	-	-			Gas	EE	

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. (^{o}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
E01							4,401.9	530.5
E02							4,401.9	530.5
E03							4,401.9	530.5
E04							4,401.9	530.5
E05							4,401.9	530.5
E07							4,401.9	530.5
G3							4,401.9	530.5
H2							4,401.9	530.5
BL4							4,401.9	530.5
BL5							4,401.9	530.5
BL6							4,401.9	530.5
BL7							4,401.9	530.5
FL2							4,401.9	530.5
A07							4,401.9	530.5
E08							4,401.9	530.5
E09							4,401.9	530.5
E10							4,401.9	530.5
E11							4,401.9	530.5
E12							4,401.9	530.5

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

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 **NO NEW SOURCES ASSOCIATED WITH THIS APPLICATION** ☐ 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 **NO NEW SOURCES ASSOCIATED WITH THIS APPLICATION** ☐ 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."

FUGITIVE EMISSIONS SUMMARY	All Regulated Pollutants - Chemical Name/CAS [1]	Maximum Potential Uncontrolled Emissions [2]		Maximum Potential Controlled Emissions [3]		Est. Method Used [4]
		lb/hr	ton/yr	lb/hr	ton/yr	
Haul Road/Road Dust Emissions Paved Haul Roads						
Unpaved Haul Roads						
Storage Pile Emissions						
Loading/Unloading Operations						
Wastewater Treatment Evaporation & Operations						
Equipment Leaks						
General Clean-up VOC Emissions						
Other						

[1] 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.

[2] Give 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).

[3] Give 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).

[4] 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).

Attachment L

Emissions 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*):

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

   FLLP2 - 6.0 MMBtu/hr ETI dehydrator flare

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:

   N/A

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

   N/A

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

   Natural gas combustion products.

* 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 at a fuel usage of 5,882 scf/hr

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

Methane 84.838 All values in mole percent.
Ethane 8.503
Propane 3.120
I-Butane 0.531
N-Butane 0.828
I-Pentane 0.271
N-Pentane 0.190
Hexane 0.331
Carbon Dioxide 0.000 Nitrogen 1.388 ash - nil

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

@ °F and psia.

(d) Percent excess air:

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

6.0 MMBtu/hr

(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:

N/A

(g) Proposed maximum design heat input: 6.0 $\times 10^6$ 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:

@ °F and psia

a.	NO_X	0.41	lb/hr	grains/ACF
b.	SO_2	0.34	lb/hr	grains/ACF
c.	CO	1.86	lb/hr	grains/ACF
d.	PM_{10}	0.04	lb/hr	grains/ACF
e.	Hydrocarbons		lb/hr	grains/ACF
f.	VOCs	3.96	lb/hr	grains/ACF
g.	Pb	0.000003	lb/hr	grains/ACF
h.	Specify other(s)			
	CO2e	703	lb/hr	grains/ACF
	Formaldehyde	0.0004	lb/hr	grains/ACF
	Benzene	0.00001	lb/hr	grains/ACF
			lb/hr	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
In accordance with Title V Permit R30-05100100-2017.	In accordance with Title V Permit R30-05100100-2017.
REPORTING	**TESTING**
In accordance with Title V Permit R30-05100100-2017.	In accordance with Title V Permit R30-05100100-2017.

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

N/A

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): FLLP2

Equipment Information

1. Manufacturer: ETI

   Model No.

2. Method:
   - ☐ Elevated flare
   - ☒ Ground flare
   - ☐ Other

   Describe

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.

4. Method of system used:
   ☐ Steam-assisted ☐ Air-assisted ☐ Pressure-assisted ☒ Non-assisted

5. Maximum capacity of flare:
   - 98 scf/min
   - 5,882 scf/hr

6. Dimensions of stack:
   - Diameter 3.5 ft.
   - Height 34.7 ft.

7. Estimated combustion efficiency:
   (Waste gas destruction efficiency)
   - Estimated: 98 %
   - Minimum guaranteed: 98 %

8. Fuel used in burners:
   - ☒ Natural Gas
   - ☐ Fuel Oil, Number
   - ☐ Other, Specify:

9. Number of burners:
   Rating: 1 @ 6,000,000 BTU/hr

10. Will preheat be used? ☐ Yes ☒ No

11. Describe method of controlling flame:
    Natural draft burner with flame arrestor elements and manual louvers

12. Flare height: 34.7 ft

13. Flare tip inside diameter: 3.5 ft

14. Natural gas flow rate to flare pilot flame per pilot light:
    - 0.58 scf/min
    - 35 scf/hr

15. Number of pilot lights:
    Total 1 @ 35,700 BTU/hr

16. Will automatic re-ignition be used?
    ☒ Yes ☐ No

17. If automatic re-ignition will be used, describe the method:
    Flame rod detector on pilot and spark ignitors on each burner

18. Is pilot flame equipped with a monitor? ☒ Yes ☐ No
    If yes, what type?
    - ☐ Thermocouple
    - ☐ Infra-Red
    - ☐ Ultra Violet
    - ☐ Camera with monitoring control room
    - ☒ Other, Describe: Pilot gas burner (continuous pilot) with Sure-Fire combustion air arrestor; ETI PLC and 10” HMI touchscreen

19. Hours of unit operation per year: 8,760

Steam Injection

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

Characteristics of the Waste Gas Stream to be Burned

29.

Name	Quantity Grains of H_2S/100 ft^3	Quantity (LB/hr, ft^3/hr, etc)	Source of Material

30. Estimate total combustible to flare: LB/hr or ACF/hr (Maximum mass flow rate of waste gas) scfm	
31. Estimated total flow rate to flare including materials to be burned, carrier gases, auxiliary fuel, etc.: LB/hr or ACF/hr	
32. Give composition of carrier gases:	
33. Temperature of emission stream: °F Heating value of emission stream: BTU/ft^3 Mean molecular weight of emission stream: MW = lb/lb-mole	34. Identify and describe all auxiliary fuels to be burned. BTU/scf BTU/scf BTU/scf BTU/scf
35. Temperature of flare gas: 195 °F	36. Flare gas flow rate: scf/min
37. Flare gas heat content: 1,020 BTU/ft^3	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):	
42. Describe the collection material disposal system:	
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:	RECORDKEEPING:
In accordance with Title V Permit R30-05100100-2017.	In accordance with Title V Permit R30-05100100-2017.
REPORTING:	TESTING:
In accordance with Title V Permit R30-05100100-2017.	In accordance with Title V Permit R30-05100100-2017.

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.
100% VOC and BTEX

46. Manufacturer's Guaranteed Control Efficiency for each air pollutant.
98% VOC and BTEX

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

Attachment N

Supporting Emissions Calculations

Columbia Gas Transmission, LLC
Adaline Compressor Station

Table N-1 - Facility Total PTE

Source	Capacity	Annual Emissions (tpy)							
		NO_x	CO	CO_2e	$PM_{10}/PM_{2.5}$	VOC	SO_2	CH_2O	Total HAP
New Sources PTE		**1.79**	**8.15**	**3,077**	**0.20**	**17.34**	**0.02**	**1.93E-03**	**0.05**
FL2 - Dehydrator Flare	6.0 MMBtu/hr	1.79	8.15	3,077	0.20	17.34	0.02	1.93E-03	0.05
Current PTE[1]		**841.34**	**130.11**	**43,488**	**13.21**	**38.00**	**0.27**	**14.29**	**22.66**
BLR4 - Heating System Boiler	3.5 MMBtu/hr	1.49	1.26	1,785	0.11	0.08	0.01	1.12E-03	0.03
DEG-DEHY1 through DEG-DEHY3 - Dehydration units with reboilers & flare	117 MMscf/d each	1.45	4.65	2,128	0.14	2.83	0.01	1.34E-03	2.04
HTR2 - Fuel Gas Heater	1.0 MMBtu/hr	0.43	0.36	513	0.03	0.02	3.13E-03	3.22E-04	0.01
E04, E05 - Clark TLA-6 2SLB Reciprocating Engines	2,000 hp each	478.30	81.82	17,233	7.11	17.66	0.11	8.12	11.71
E01-E03 - Clark HRA-8 2SLB Reciprocating Engines	880 hp each	343.43	32.15	12,863	5.31	13.18	0.08	6.06	8.74
G3 - Waukesha Emergency Generator	440 hp	0.63	0.43	103	0.01	0.18	6.28E-04	0.05	0.06
E07 - Solar Saturn T-1001 Turbine	1,080 hp	15.61	9.46	8,863	0.50	2.40	0.05	0.05	0.08
Storage Tanks	Various					1.64			
Equipment Leaks[2]				23		1.01			
Changes to Current PTE		**-0.74**	**-4.05**	**-1,282**	**-0.08**	**-0.15**	**-0.01**	**-8.05E-04**	**-0.02**
FL1 - Dehydrator Flare	2.5 MMBtu/hr	-0.74	-4.05	-1,282	-0.08	-0.15	-0.01	-8.05E-04	-0.02
Change in PTE (new + changes)		**1.04**	**4.10**	**1,795**	**0.11**	**17.19**	**0.01**	**1.13E-03**	**0.03**
Proposed PTE[1]		**842.38**	**134.21**	**45,283**	**13.32**	**55.19**	**0.28**	**14.29**	**22.69**
PSD Significance Threshold		40	100	n/a[3]	15 / 10	40	40	n/a	n/a

1. Excludes fugitive emissions (compressor stations are not one of the names source categories that include fugitive emissions).
2. Fugitive emissions are not part of PSD applicability analysis.
3. Per 6-23-2014 Supreme Court decisions, applicability of PSD permitting cannot be triggered by GHG emisisons.

Columbia Gas Transmission, LLC
Adaline Compressor Station

Table N-2 - Dehydrator Total PTE with new flare

Source	Annual Emissions (tpy)							
	NO_x	CO	CO_2e	$PM_{10}/PM_{2.5}$	VOC	SO_2	CH_2O	Total HAP
Total	2.50	8.74	3,924	0.25	20.02	0.02	2.46E-03	2.07
DEHY1 Reboiler (BLR5)	0.24	0.20	282	0.02	0.01	1.72E-03	1.77E-04	4.46E-03
DEHY1 Dehy Emissions					0.88			0.67
DEHY2 Reboiler (BLR6)	0.24	0.20	282	0.02	0.01	1.72E-03	1.77E-04	4.46E-03
DEHY2 Dehy Emissions					0.88			0.67
DEHY3 Reboiler (BLR7)	0.24	0.20	282	0.02	0.01	1.72E-03	1.77E-04	4.46E-03
DEHY3 Dehy Emissions					0.88			0.67
DEHY1-3 Flare (FLLP2)	1.79	8.15	3,077	0.20	17.34	0.02	1.93E-03	0.05

Columbia Gas Transmission, LLC
Adaline Compressor Station

Table N-3 - DEG-DEHY1 - Dehydration unit #1 with reboiler and new flare

Reboiler Heat Input	0.55	MMBtu/hr
Flare Heat Input	6.0	MMBtu/hr
Total Heat Input	6.55	MMBtu/hr
Operating Hours	8,760	hr/yr
Natural Gas Heat Content	1,020	Btu/scf
Total Fuel Consumption	56.25	MMscf/yr
Reboiler Consumption	4.72	MMscf/yr
Flare Consumption	51.53	MMscf/yr
Total Fuel Consumption	6,421.6	scf/hr
Reboiler Consumption	539.2	scf/hr
Flare Consumption	5,882.4	scf/hr

Pollutant	Emission Factor			Emission Rate				
	Reboiler Combustion		Flare Combustion	Reboiler Combustion	Flare Combustion	Dehy Emissions (2% Emitted)	Total	Total
	lb/MMscf	lb/MMBtu	lb/MMBtu	lb/hr	lb/hr	lb/hr	lb/hr	ton/yr
NO_x	100	0.098	0.068	0.05	0.41		0.46	2.02
CO	84	0.082	0.31	0.05	1.86		1.91	8.35
GHG (CO_2e)		117.1	117.1	64	703		767	3,359
PM_{10}	7.6	0.007	0.007	4.10E-03	0.04		0.05	0.21
$PM_{2.5}$	7.6	0.007	0.007	4.10E-03	0.04		0.05	0.21
VOC	5.5	0.005	0.66	2.97E-03	3.96	0.20	4.16	18.24
SO_2 (Maximum Hourly)		0.0571	0.0571	0.03	0.34		0.37	
SO_2 (Average Annual)		0.000714	0.000714					0.02
Formaldehyde	0.075	0.00007	0.00007	4.04E-05	4.41E-04		4.82E-04	2.11E-03
Benzene	0.002	2.06E-06	2.06E-06	1.13E-06	1.24E-05	0.06	0.06	0.25
Total HAPs	1.89	0.00185	0.00185	1.02E-03	1.11E-02	0.15	0.17	0.72

Emission Factor References:
GHG (CO2e) - 40 CFR 98 Subpart C
SO2 (Maximum Hourly) - 20 gr S / 100 scf
SO2 (Average Annual) - 0.25 gr S / 100 scf
Reboiler Combustion - AP-42 Table 1.4-1 (7/98) - NOx, CO; AP-42 Table 1.4-2 (7/98) - PM10, PM2.5, VOC; AP-42 Table 1.4-3 (7/98) - HAPs
Flare Combustion - AP-42 Tables 13.5-1 and -2 (12/16) - NOx, CO, VOC; AP-42 Table 1.4-2 - PM10, PM2.5; AP-42 Table 1.4-3 & 4 (7/98) - HAPs
Dehy Emissions - GRI-GlyCalc

Columbia Gas Transmission, LLC
Adaline Compressor Station

Table N-4 - DEG-DEHY2 - Dehydration unit #2 with reboiler and new flare

Reboiler Heat Input	0.55	MMBtu/hr
Flare Heat Input	6.0	MMBtu/hr
Total Heat Input	6.55	MMBtu/hr
Operating Hours	8,760	hr/yr
Natural Gas Heat Content	1,020	Btu/scf
Total Fuel Consumption	56.25	MMscf/yr
Reboiler Consumption	4.72	MMscf/yr
Flare Consumption	51.53	MMscf/yr
Total Fuel Consumption	6,421.6	scf/hr
Reboiler Consumption	539.2	scf/hr
Flare Consumption	5,882.4	scf/hr

Pollutant	Emission Factor			Emission Rate				
	Reboiler Combustion		Flare Combustion	Reboiler Combustion	Flare Combustion	Dehy Emissions (2% Emitted)	Total	Total
	lb/MMscf	lb/MMBtu	lb/MMBtu	lb/hr	lb/hr	lb/hr	lb/hr	ton/yr
NO_x	100	0.098	0.068	0.05	0.41		0.46	2.02
CO	84	0.082	0.31	0.05	1.86		1.91	8.35
GHG (CO_2e)		117.1	117.1	64	703		767	3,359
PM_{10}	7.6	0.007	0.007	4.10E-03	0.04		0.05	0.21
$PM_{2.5}$	7.6	0.007	0.007	4.10E-03	0.04		0.05	0.21
VOC	5.5	0.005	0.66	2.97E-03	3.96	0.20	4.16	18.24
SO_2 (Maximum Hourly)		0.0571	0.0571	0.03	0.34		0.37	
SO_2 (Average Annual)		0.000714	0.000714					2.05E-02
Formaldehyde	0.075	0.00007	0.00007	4.04E-05	4.41E-04		4.82E-04	2.11E-03
Benzene	0.002	2.06E-06	2.06E-06	1.13E-06	1.24E-05	0.06	0.06	0.25
Total HAPs	1.89	0.00185	0.00185	1.02E-03	1.11E-02	0.15	0.17	0.72

Emission Factor References:
GHG (CO2e) - 40 CFR 98 Subpart C
SO2 (Maximum Hourly) - 20 gr S / 100 scf
SO2 (Average Annual) - 0.25 gr S / 100 scf
Reboiler Combustion - AP-42 Table 1.4-1 (7/98) - NOx, CO; AP-42 Table 1.4-2 (7/98) - PM10, PM2.5, VOC; AP-42 Table 1.4-3 (7/98) - HAPs
Flare Combustion - AP-42 Tables 13.5-1 and -2 (12/16) - NOx, CO, VOC; AP-42 Table 1.4-2 - PM10, PM2.5; AP-42 Table 1.4-3 & 4 (7/98) - HAPs
Dehy Emissions - GRI-GlyCalc

Columbia Gas Transmission, LLC
Adaline Compressor Station

Table N-5 - DEG-DEHY3 - Dehydration unit #3 with reboiler and new flare

Reboiler Heat Input	0.55	MMBtu/hr
Flare Heat Input	6.0	MMBtu/hr
Total Heat Input	6.55	MMBtu/hr
Operating Hours	8,760	hr/yr
Natural Gas Heat Content	1,020	Btu/scf
Total Fuel Consumption	56.25	MMscf/yr
Reboiler Consumption	4.72	MMscf/yr
Flare Consumption	51.53	MMscf/yr
Total Fuel Consumption	6,421.6	scf/hr
Reboiler Consumption	539.2	scf/hr
Flare Consumption	5,882.4	scf/hr

Pollutant	Emission Factor			Emission Rate				
	Reboiler Combustion		Flare Combustion	Reboiler Combustion	Flare Combustion	Dehy Emissions (2% Emitted)	Total	Total
	lb/MMscf	lb/MMBtu	lb/MMBtu	lb/hr	lb/hr	lb/hr	lb/hr	ton/yr
NO_x	100	0.098	0.068	0.05	0.41		0.46	2.02
CO	84	0.082	0.31	0.05	1.86		1.91	8.35
GHG (CO_2e)		117.1	117.1	64	703		767	3,359
PM_{10}	7.6	0.007	0.007	4.10E-03	0.04		0.05	0.21
$PM_{2.5}$	7.6	0.007	0.007	4.10E-03	0.04		0.05	0.21
VOC	5.5	0.005	0.66	2.97E-03	3.96	0.20	4.16	18.24
SO_2 (Maximum Hourly)		0.0571	0.0571	0.03	0.34		0.37	
SO_2 (Average Annual)		0.000714	0.000714					2.05E-02
Formaldehyde	0.075	0.00007	0.00007	4.04E-05	4.41E-04		4.82E-04	2.11E-03
Benzene	0.002	2.06E-06	2.06E-06	1.13E-06	1.24E-05	0.06	0.06	0.25
Total HAPs	1.89	0.00185	0.00185	1.02E-03	1.11E-02	0.15	0.17	0.72

Emission Factor References:
GHG (CO2e) - 40 CFR 98 Subpart C
SO2 (Maximum Hourly) - 20 gr S / 100 scf
SO2 (Average Annual) - 0.25 gr S / 100 scf
Reboiler Combustion - AP-42 Table 1.4-1 (7/98) - NOx, CO; AP-42 Table 1.4-2 (7/98) - PM10, PM2.5, VOC; AP-42 Table 1.4-3 (7/98) - HAPs
Flare Combustion - AP-42 Tables 13.5-1 and -2 (12/16) - NOx, CO, VOC; AP-42 Table 1.4-2 - PM10, PM2.5; AP-42 Table 1.4-3 & 4 (7/98) - HAPs
Dehy Emissions - GRI-GlyCalc

Columbia Gas Transmission, LLC
Adaline Compressor Station

Table N-6 - Dehydrator Total PTE with existing flare

Source	Annual Emissions (tpy)							
	NO_x	CO	CO_2e	$PM_{10}/PM_{2.5}$	VOC	SO_2	CH_2O	Total HAP
Total	1.45	4.65	2,128	0.14	2.83	0.01	1.34E-03	2.04
DEHY1 Reboiler (BLR5)	0.24	0.20	282	0.02	0.01	1.72E-03	1.77E-04	4.46E-03
DEHY1 Dehy Emissions					0.88			0.67
DEHY2 Reboiler (BLR6)	0.24	0.20	282	0.02	0.01	1.72E-03	1.77E-04	4.46E-03
DEHY2 Dehy Emissions					0.88			0.67
DEHY3 Reboiler (BLR7)	0.24	0.20	282	0.02	0.01	1.72E-03	1.77E-04	4.46E-03
DEHY3 Dehy Emissions					0.88			0.67
DEHY1-3 Flare (FLLP1)	0.74	4.05	1,282	0.08	0.15	0.01	8.05E-04	0.02

Columbia Gas Transmission, LLC
Adaline Compressor Station

Table N-7 - DEG-DEHY1 - Dehydration unit #1 with reboiler and existing flare

Reboiler Heat Input	0.55	MMBtu/hr
Flare Heat Input	2.5	MMBtu/hr
Total Heat Input	3.05	MMBtu/hr
Operating Hours	8,760	hr/yr
Natural Gas Heat Content	1,020	Btu/scf
Total Fuel Consumption	26.19	MMscf/yr
Reboiler Consumption	4.72	MMscf/yr
Flare Consumption	21.47	MMscf/yr
Total Fuel Consumption	2,990.2	scf/hr
Reboiler Consumption	539.2	scf/hr
Flare Consumption	2,451.0	scf/hr

Pollutant	Emission Factor			Emission Rate				
	Reboiler Combustion		Flare Combustion	Reboiler Combustion	Flare Combustion	Dehy Emissions (2% Emitted)	Total	Total
	lb/MMscf	lb/MMBtu	lb/MMBtu	lb/hr	lb/hr	lb/hr	lb/hr	ton/yr
NO_x	100	0.098	0.068	0.05	0.17		0.22	0.98
CO	84	0.082	0.37	0.05	0.93		0.97	4.25
GHG (CO_2e)		117.1	117.1	64	293		357	1,564
PM_{10}	7.6	0.007	0.007	4.10E-03	0.02		0.02	0.10
$PM_{2.5}$	7.6	0.007	0.007	4.10E-03	0.02		0.02	0.10
VOC	5.5	0.005	0.014	2.97E-03	0.04	0.20	0.24	1.05
SO_2 (Maximum Hourly)		0.0571	0.0571	0.03	0.14		0.17	
SO_2 (Average Annual)		0.000714	0.000714					9.54E-03
Formaldehyde	0.075	0.00007	0.00007	4.04E-05	1.84E-04		2.24E-04	9.82E-04
Benzene	0.002	2.06E-06	2.06E-06	1.13E-06	5.15E-06	0.06	0.06	0.25
Total HAPs	1.89	0.00185	0.00185	1.02E-03	4.63E-03	0.15	0.16	0.69

Emission Factor References:
GHG (CO2e) - 40 CFR 98 Subpart C
SO2 (Maximum Hourly) - 20 gr S / 100 scf
SO2 (Average Annual) - 0.25 gr S / 100 scf
Reboiler Combustion - AP-42 Table 1.4-1 (7/98) - NOx, CO; AP-42 Table 1.4-2 (7/98) - PM10, PM2.5, VOC; AP-42 Table 1.4-3 (7/98) - HAPs
Flare Combustion - AP-42 Table 13.5-1 (9/91) - NOx, CO, VOC (10% of THC); AP-42 Table 1.4-2 (7/98) - PM10, PM2.5; AP-42 Table 1.4-3 & 4 (7/98) - HAPs
Dehy Emissions - GRI-GlyCalc

Columbia Gas Transmission, LLC
Adaline Compressor Station

Table N-8 - DEG-DEHY2 - Dehydration unit #2 with reboiler and existing flare

Reboiler Heat Input	0.55	MMBtu/hr
Flare Heat Input	2.5	MMBtu/hr
Total Heat Input	3.05	MMBtu/hr
Operating Hours	8,760	hr/yr
Natural Gas Heat Content	1,020	Btu/scf
Total Fuel Consumption	26.19	MMscf/yr
Reboiler Consumption	4.72	MMscf/yr
Flare Consumption	21.47	MMscf/yr
Total Fuel Consumption	2,990.2	scf/hr
Reboiler Consumption	539.2	scf/hr
Flare Consumption	2,451.0	scf/hr

Pollutant	Emission Factor			Emission Rate				
	Reboiler Combustion		Flare Combustion	Reboiler Combustion	Flare Combustion	Dehy Emissions (2% Emitted)	Total	Total
	lb/MMscf	lb/MMBtu	lb/MMBtu	lb/hr	lb/hr	lb/hr	lb/hr	ton/yr
NO_x	100	0.098	0.068	0.05	0.17		0.22	0.98
CO	84	0.082	0.37	0.05	0.93		0.97	4.25
GHG (CO_2e)		117.1	117.1	64	293		357	1,564
PM_{10}	7.6	0.007	0.007	4.10E-03	0.02		0.02	0.10
$PM_{2.5}$	7.6	0.007	0.007	4.10E-03	0.02		0.02	0.10
VOC	5.5	0.005	0.014	2.97E-03	0.04	0.20	0.24	1.05
SO_2 (Maximum Hourly)		0.0571	0.0571	0.03	0.14		0.17	
SO_2 (Average Annual)		0.000714	0.000714					9.54E-03
Formaldehyde	0.075	0.00007	0.00007	4.04E-05	1.84E-04		2.24E-04	9.82E-04
Benzene	0.002	2.06E-06	2.06E-06	1.13E-06	5.15E-06	0.06	0.06	0.25
Total HAPs	1.89	0.00185	0.00185	1.02E-03	4.63E-03	0.15	0.16	0.69

Emission Factor References:
GHG (CO2e) - 40 CFR 98 Subpart C
SO2 (Maximum Hourly) - 20 gr S / 100 scf
SO2 (Average Annual) - 0.25 gr S / 100 scf
Reboiler Combustion - AP-42 Table 1.4-1 (7/98) - NOx, CO; AP-42 Table 1.4-2 (7/98) - PM10, PM2.5, VOC; AP-42 Table 1.4-3 (7/98) - HAPs
Flare Combustion - AP-42 Table 13.5-1 (9/91) - NOx, CO, VOC (10% of THC); AP-42 Table 1.4-2 (7/98) - PM10, PM2.5; AP-42 Table 1.4-3 & 4 (7/98) - HAPs
Dehy Emissions - GRI-GlyCalc

Columbia Gas Transmission, LLC
Adaline Compressor Station

Table N-9 - DEG-DEHY3 - Dehydration unit #3 with reboiler and existing flare

Reboiler Heat Input	0.55	MMBtu/hr
Flare Heat Input	2.5	MMBtu/hr
Total Heat Input	3.05	MMBtu/hr
Operating Hours	8,760	hr/yr
Natural Gas Heat Content	1,020	Btu/scf
Total Fuel Consumption	26.19	MMscf/yr
Reboiler Consumption	4.72	MMscf/yr
Flare Consumption	21.47	MMscf/yr
Total Fuel Consumption	2,990.2	scf/hr
Reboiler Consumption	539.2	scf/hr
Flare Consumption	2,451.0	scf/hr

Pollutant	Emission Factor			Emission Rate				
	Reboiler Combustion		Flare Combustion	Reboiler Combustion	Flare Combustion	Dehy Emissions (2% Emitted)	Total	Total
	lb/MMscf	lb/MMBtu	lb/MMBtu	lb/hr	lb/hr	lb/hr	lb/hr	ton/yr
NO_x	100	0.098	0.068	0.05	0.17		0.22	0.98
CO	84	0.082	0.37	0.05	0.93		0.97	4.25
GHG (CO_2e)		117.1	117.1	64	293		357	1,564
PM_{10}	7.6	0.007	0.007	4.10E-03	0.02		0.02	0.10
$PM_{2.5}$	7.6	0.007	0.007	4.10E-03	0.02		0.02	0.10
VOC	5.5	0.005	0.014	2.97E-03	0.04	0.20	0.24	1.05
SO_2 (Maximum Hourly)		0.0571	0.0571	0.03	0.14		0.17	
SO_2 (Average Annual)		0.000714	0.000714					9.54E-03
Formaldehyde	0.075	0.00007	0.00007	4.04E-05	1.84E-04		2.24E-04	9.82E-04
Benzene	0.002	2.06E-06	2.06E-06	1.13E-06	5.15E-06	0.06	0.06	0.25
Total HAPs	1.89	0.00185	0.00185	1.02E-03	4.63E-03	0.15	0.16	0.69

Emission Factor References:
GHG (CO2e) - 40 CFR 98 Subpart C
SO2 (Maximum Hourly) - 20 gr S / 100 scf
SO2 (Average Annual) - 0.25 gr S / 100 scf
Reboiler Combustion - AP-42 Table 1.4-1 (7/98) - NOx, CO; AP-42 Table 1.4-2 (7/98) - PM10, PM2.5, VOC; AP-42 Table 1.4-3 (7/98) - HAPs
Flare Combustion - AP-42 Table 13.5-1 (9/91) - NOx, CO, VOC (10% of THC); AP-42 Table 1.4-2 (7/98) - PM10, PM2.5; AP-42 Table 1.4-3 & 4 (7/98) - HAPs
Dehy Emissions - GRI-GlyCalc

Columbia Gas Transmission, LLC
Adaline Compressor Station

Table N-10 - BLR4 - Heating System Boiler

Heat Input	3.48	MMBtu/hr
Operating Hours	8760	hr/yr
Natural Gas Heat Content	1020	Btu/scf
Fuel Consumption	29.89	MMscf/yr
	3411.8	scf/hr

Pollutant	Emission Factor		Emission Rate		Emission Factor Reference
	lb/MMscf	lb/MMBtu	lb/hr	ton/yr	
NO_x	100	0.098	0.34	1.49	AP-42 Table 1.4-1 (7/98)
CO	84	0.082	0.29	1.26	AP-42 Table 1.4-1 (7/98)
CO_2e		117.1	408	1,785	40 CFR 98 Subpart C
PM_{10}	7.6	0.007	0.03	0.11	AP-42 Table 1.4-2 (7/98)
$PM_{2.5}$	7.6	0.007	0.03	0.11	AP-42 Table 1.4-2 (7/98)
VOC	5.5	0.005	0.02	0.08	AP-42 Table 1.4-2 (7/98)
SO_2 (Maximum Hourly)		0.0571	0.20		20 grains S / 100 scf
SO_2 (Average Annual)		0.000714		0.01	0.25 grains S / 100 scf
Formaldehyde	0.075	0.00007	2.56E-04	1.12E-03	AP-42 Table 1.4-3 (7/98)
Total HAPs	1.89	0.00185	0.01	0.03	AP-42 Table 1.4-3 & 4 (7/98)

Columbia Gas Transmission, LLC
Adaline Compressor Station

Table N-11 - HTR2 - Fuel Gas Heater

Heat Input	1.00	MMBtu/hr
Operating Hours	8760	hr/yr
Natural Gas Heat Content	1020	Btu/scf
Fuel Consumption	8.59	MMscf/yr
	980.4	scf/hr

Pollutant	Emission Factor		Emission Rate		Emission Factor Reference
	lb/MMscf	lb/MMBtu	lb/hr	ton/yr	
NO_x	100	0.098	0.10	0.43	AP-42 Table 1.4-1 (7/98)
CO	84	0.082	0.08	0.36	AP-42 Table 1.4-1 (7/98)
CO_2e		117.1	117	513	40 CFR 98 Subpart C
PM_{10}	7.6	0.007	0.01	0.03	AP-42 Table 1.4-2 (7/98)
$PM_{2.5}$	7.6	0.007	0.01	0.03	AP-42 Table 1.4-2 (7/98)
VOC	5.5	0.005	0.01	0.02	AP-42 Table 1.4-2 (7/98)
SO_2 (Maximum Hourly)		0.0571	0.06		20 grains S / 100 scf
SO_2 (Average Annual)		0.000714		3.13E-03	0.25 grains S / 100 scf
Formaldehyde	0.075	0.00007	7.35E-05	3.22E-04	AP-42 Table 1.4-3 (7/98)
Total HAPs	1.89	0.00185	1.85E-03	8.11E-03	AP-42 Table 1.4-3 & 4 (7/98)

Columbia Gas Transmission, LLC
Adaline Compressor Station

Table N-12 - E01 through E03 - Clark HRA-8 2SLB Reciprocating Engines

Horsepower	880	HP
Maximum Horsepower	968	HP
Brake Specific Fuel Consumption	9500	Btu/Bhp-hr
Total Heat Input	8.36	MMBtu/hr
Maximum Heat Input	9.20	MMBtu/hr
Operating Hours	8760	hr/yr
Natural Gas Heat Content	1020	Btu/scf
Fuel Consumption	71.80	MMscf/yr
	9,016	scf/hr based on maximum heat input
Quantity	3	

Pollutant	Emission Factor		Emission Rate			Emission Factor Reference
	lb/bhp-hr	lb/MMBtu	lb/hr[1]	ton/yr (1 engine)	ton/yr (3 engines)	
NO_x (Maximum Hourly)	5.95E-02		57.60			Stack Test-Based Emission Factor
NO_x (Average Annual)	2.97E-02			114.48	343.43	Stack Test-Based Emission Factor
CO (Maximum Hourly)	5.55E-03		5.37			Stack Test-Based Emission Factor
CO (Average Annual)	2.78E-03			10.72	32.15	Stack Test-Based Emission Factor
CO_2e		117.1	1,077	4,288	12,863	40 CFR 98 Subpart C
PM_{10}		0.048	0.44	1.77	5.31	AP-42 Table 3.2-1 (7/00) - 2SLB
$PM_{2.5}$		0.048	0.44	1.77	5.31	AP-42 Table 3.2-1 (7/00) - 2SLB
VOC		0.120	1.10	4.39	13.18	AP-42 Table 3.2-1 (7/00) - 2SLB
SO_2 (Maximum Hourly)		0.0571	0.53			20 grains S / 100 scf
SO_2 (Average Annual)		0.000714		0.03	0.08	0.25 grains S / 100 scf
Formaldehyde		0.0552	0.51	2.02	6.06	AP-42 Table 3.2-1 (7/00) - 2SLB
Total HAPs		0.07954	0.73	2.91	8.74	AP-42 Table 3.2-1 (7/00) - 2SLB

1. Maximum hourly emission rate based on maximum horsepower under optimum conditions (10% greater than site rating).

Columbia Gas Transmission, LLC
Adaline Compressor Station

Table N-13 - E04 & E05 - Clark TLA-6 2SLB Reciprocating Engines

Horsepower	2000	HP
Maximum Horsepower	2572	HP
Brake Specific Fuel Consumption	8400	Btu/Bhp-hr
Total Heat Input	16.80	MMBtu/hr
Maximum Heat Input	21.60	MMBtu/hr
Operating Hours	8760	hr/yr
Natural Gas Heat Content	1020	Btu/scf
Fuel Consumption	144.28	MMscf/yr
	21,181	scf/hr based on maximum heat input
Quantity	2	

Pollutant	Emission Factor		Emission Rate			Emission Factor Reference
	lb/bhp-hr	lb/MMBtu	lb/hr[1]	ton/yr (1 engine)	ton/yr (2 engines)	
NO_x (Maximum Hourly)	5.46E-02		140.43			Stack Test-Based Emission Factor
NO_x (Average Annual)	2.73E-02			239.15	478.30	Stack Test-Based Emission Factor
CO (Maximum Hourly)	9.36E-03		24.07			Stack Test-Based Emission Factor
CO (Average Annual)	4.67E-03			40.91	81.82	Stack Test-Based Emission Factor
CO_2e		117.1	2,530	8,617	17,233	40 CFR 98 Subpart C
PM_{10}		0.048	1.04	3.55	7.11	AP-42 Table 3.2-1 (7/00) - 2SLB
$PM_{2.5}$		0.048	1.04	3.55	7.11	AP-42 Table 3.2-1 (7/00) - 2SLB
VOC		0.120	2.59	8.83	17.66	AP-42 Table 3.2-1 (7/00) - 2SLB
SO_2 (Maximum Hourly)		0.0571	1.23			20 grains S / 100 scf
SO_2 (Average Annual)		0.000714		0.05	0.11	0.25 grains S / 100 scf
Formaldehyde		0.0552	1.19	4.06	8.12	AP-42 Table 3.2-1 (7/00) - 2SLB
Total HAPs		0.07954	1.72	5.85	11.71	AP-42 Table 3.2-1 (7/00) - 2SLB

1. Maximum hourly emission rate based on maximum horsepower under optimum conditions.

Columbia Gas Transmission, LLC
Adaline Compressor Station

Table N-14 - E07 - Solar Saturn T-1001 Turbine

Horsepower	1,080	HP
Maximum Horsepower	1,242	HP
Brake Specific Fuel Consumption	16000	Btu/Bhp-hr
Total Heat Input	17.28	MMBtu/hr
Maximum Heat Input	19.87	MMBtu/hr
Operating Hours	8760	hr/yr
Natural Gas Heat Content	1020	Btu/scf
Fuel Consumption	148.40	MMscf/yr
	19,482.4	scf/hr (based on maximum horsepower)

Pollutant	Emission Factor		Emission Rate		Emission Factor Reference
	lb/bhp-hr	lb/MMBtu	lb/hr[1]	ton/yr	
NO_x (Maximum Hourly)	3.85E-03		4.78		Vendor Data
NO_x (Average Annual)	3.30E-03			15.61	Vendor Data
CO (Maximum Hourly)	5.95E-03		7.39		Vendor Data
CO (Average Annual)	2.00E-03			9.46	Vendor Data
CO_2e		117.1	2,327	8,863	40 CFR 98 Subpart C
PM_{10}		0.0066	0.13	0.50	AP-42 Table 3.1-2a (4/00)
$PM_{2.5}$		0.0066	0.13	0.50	AP-42 Table 3.1-2a (4/00)
VOC (Maximum Hourly)	2.64E-03		3.28		Vendor Data
VOC (Average Annual)	5.07E-04			2.40	Vendor Data
SO_2 (Maximum Hourly)		0.0571	1.13		20 grains S / 100 scf
SO_2 (Average Annual)		0.000714		0.05	0.25 grains S / 100 scf
Formaldehyde		0.00071	0.01	0.05	AP-42 Table 3.1-3 (4/00)
Total HAPs		0.00103	0.02	0.08	AP-42 Table 3.1-3 (4/00)

1. Maximum hourly emission rate based on maximum horsepower under optimum conditions (15% greater than site rating).

Columbia Gas Transmission, LLC
Adaline Compressor Station

Table N-15 - G3 - Waukesha VGF18GL Emergency Generator

Horsepower	440	HP
Brake Specific Fuel Consumption	8000	Btu/Bhp-hr
Total Heat Input	3.52	MMBtu/hr
Operating Hours	500	hr/yr
Natural Gas Heat Content	1020	Btu/scf
Fuel Consumption	1.73	MMscf/yr
	3,451	scf/hr

Pollutant	Emission Factor		Emission Rate		Emission Factor Reference
	g/bhp-hr	lb/MMBtu	lb/hr	ton/yr	
NO_x	5.73E-03		2.52	0.63	Waulesha Performance Data
CO	3.85E-03		1.70	0.43	Waulesha Performance Data
CO_2e		117.1	412	103	40 CFR 98 Subpart C
PM_{10}		0.010	0.04	0.01	AP-42 Table 3.2-2 (7/00) - 4SLB
$PM_{2.5}$		0.010	0.04	0.01	AP-42 Table 3.2-2 (7/00) - 4SLB
VOC	1.65E-03		0.73	0.18	Waulesha Performance Data
SO_2 (Maximum Hourly)		0.0571	0.20		20 grains S / 100 scf
SO_2 (Average Annual)		0.000714		6.28E-04	0.25 grains S / 100 scf
Formaldehyde		0.05280	0.19	0.05	AP-42 Table 3.2-2 (7/00) - 4SLB
Total HAPs		0.07220	0.25	0.06	AP-42 Table 3.2-2 (7/00) - 4SLB

Columbia Gas Transmission, LLC
Adaline Compressor Station

Table N-16 - A07 through A12 - Storage Tanks

Emission Point	Contents	VOC emissions (lb/year)	VOC emissions (ton/year)
A07	Mercaptan Odorant	157.55	0.08
E08	Pipeline Liquids	430.07	0.22
E09	Pipeline Liquids	430.07	0.22
E10	Pipeline Liquids	430.07	0.22
E11	Pipeline Liquids	915.42	0.46
E12	Pipeline Liquids	915.42	0.46
Total		**3,279**	**1.64**

Attachment O

Monitoring / Recordkeeping / Reporting / Testing Plans

Monitoring/Recordkeeping/Reporting/Testing Plans

No major changes to the methods of operation of permitted equipment at the Adaline Compressor Station are occurring through this modification. Columbia will continue monitoring, recordkeeping, reporting, and testing per the current Title V Permit R30-05100100-2017.

Attachment P

Public Notice

AIR QUALITY PERMIT NOTICE
Notice of Application

Notice is given that Columbia Gas Transmission LLC has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a Permit Modification for its existing natural gas compression station located on 18123 Fish Creek Road, Cameron, in Marshall County, West Virginia. The latitude and longitude coordinates are: 39° 45' 55.70" N and 80° 38' 39.07" W.

The applicant estimates the increases in, if modification application is approved, potential to discharge the following Regulated Air Pollutants will be: Carbon Monoxide by 4.10 tons per year, Nitrogen Oxides by 1.04 tons per year, PM10 and PM2.5 by 0.11 tons per year, Sulfur Dioxide by 0.01 tons per year, Volatile Organic Compounds (VOC) by 17.19 tons per year, Carbon Dioxide Equivalents (CO2e) by 1,795 tons per year, and Formaldehyde by 0.001 tons per year.

Startup of operation is planned to begin on or about the 1st day of August, 2018. 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 8th day of February, 2018.

By: Columbia Gas Transmission LLC
Eugene Wood
Manager of Operations
455 Racetrack Road
Washington, PA 15301

MOUNDSVILLE DAILY ECHO
SINCE 1891

(304) 845-2660
P.O. BOX 369
MOUNDSVILLE
WEST VIRGINIA
26041

AFFIDAVIT OF PUBLICATION

STATE OF WEST VIRGINIA,
COUNTY OF MARSHALL, to wit

I, Melanie S. Murdock being first duly sworn upon my oath, do depose and say:

- that I am Legal Advertising Manager of the MOUNDSVILLE DAILY ECHO, a Republican newspaper;
- that I have been duly authorized to execute this affidavit;
- that such newspaper has been published for over 119 years, Is regularly published afternoons dally except Saturdays and Sundays, for at least fifty weeks during the calendar year, In the municipality of Moundsville, Marshall County, West Virginia.
- that such newspaper is a newspaper of "general circulation" as defined In Art. 3, Chap. 59 of the Code of West Virginia 1931 as amended, within Moundsville and Marshall County;
- that such newspaper averages In length four or more pages, exclusive of any cover, per Issue;
- that such newspaper Is circulated to the general public at a definite price or consideration;
- that such newspaper Is a newspaper to which the general public resorts far passing events of a political, religious, commercial and social nature and for current happenings, announcements, miscellaneous reading matters, advertisements and other notices;
- and that the annexed notice described as follows:

Legal Advertisement

PARTY(ies)

Air Quality Permit / Fish Creek Road

NATURE (and agency if heard before one)

CERTIF-BILL TO

AECOM
Jennifer Ehrhardt
510 Carnegie Center
Princeton, NJ 08540

WAS PUBLISHED IN-SAID NEWSPAPER AS FOLLOWS

Times	Dates
1	February 12, 2018

BY WORDS	PUBLICATION CHARGES
317.75	$38.54

(signed) Melanie S. Murdock

NOTARIZATION

Taken, sworn and subscribed before me this 13th day of February 2018

Notary Public

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
AMY M. McGLUMPHY
PO Box 369
Moundsville, WV 26041
My Commission Expires August 29, 2023

Amy M. McGlumphy

LEGAL ADVERTISEMENT

AIR QUALITY PERMIT NOTICE
Notice of Application

Notice is given that Columbia Gas Transmission LLC has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a Permit Modification for its existing natural gas compression station located on 18123 Fish Creek Road, Cameron, in Marshall County, West Virginia. The latitude and longitude coordinates are: 39° 45' 55.70" N and 80° 38' 39.07" W.

The applicant estimates the increases in, if modification application is approved, potential to discharge the following Regulated Air Pollutants will be: Carbon Monoxide by 4.10 tons per year, Nitrogen Oxides by 1.04 tons per year, PM10 and PM2.5 by 0.11 tons per year, Sulfur Dioxide by 0.01 tons per year, Volatile Organic Compounds (VOC) by 17.19 tons per year, Carbon Dioxide Equivalents (CO_2e) by 1,795 tons per year, and Formaldehyde by 0.001 tons per year.

Startup of operation is planned to begin on or about the 1st day of October, 2018. 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 8th day of February, 2018.

By: Columbia Gas Transmission LLC

Glenn Fyola
Manager of Operations
107 Spencer Road Bldg #1
Clendenin, WV 25045

PUBLISH: February 12, 2018.

Attachment R

Delegation of Authority

west virginia department of environmental protection

Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone: 304 926 0475 • FAX: 304 926 0479

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

July 27, 2011

CERTIFIED MAIL
91 7108 2133 3936 1583 6144

Mr. Victor M. Gaglio
Senior Vice-President of Operations
Columbia Gas Transmission
1700 MacCorkle Avenue, S.E.
Charleston, WV 25314

Re: Delegation of Authority Confirmation

Dear Mr. Gaglio:

Based on your letter, dated July 22, 2011, the Division of Air Quality (DAQ) hereby acknowledges the titles of Regional Director and Manager of Operations as delegated authorized representatives for the facilities listed below.

Company Name	Facility	Facility ID No.
Columbia Gas Transmission, LLC	Horse Creek Station	005-00039
Columbia Gas Transmission, LLC	Frametown Station	007-00100
Columbia Gas Transmission, LLC	Glenville Station	021-00001
Columbia Gas Transmission, LLC	Lost River Station	031-00002
Columbia Gas Transmission, LLC	Hardy Station	031-00031
Columbia Gas Transmission, LLC	Ripley Station	035-00003
Columbia Gas Transmission, LLC	Lanham Station	039-00047
Columbia Gas Transmission, LLC	Clendenin Station	039-00048
Columbia Gas Transmission, LLC	Coco Station	039-00049
Columbia Gas Transmission Corporation	Walgrove Station	039-00074
Columbia Gas Transmission Corporation	Cobb Station	039-00100
Columbia Gas Transmission Corporation	Hunt Station	039-00101
Columbia Gas Transmission Corporation	Charleston Office	039-00154
Columbia Gas Transmission Corporation	Clendenin Office	039-00546
Columbia Gas Transmission, LLC	Hubball Station	043-00002
Columbia Gas Transmission Corporation	Nye Station	043-00011
Columbia Gas Transmission, LLC	Hamlin Station	043-00027
Columbia Gas Transmission, LLC	Majorsville Station	051-00025
Columbia Gas Transmission, LLC	Adaline Station	051-00100

Company Name	Facility	Facility ID No.
Columbia Gas Transmission, LLC	Seneca Station	071-00008
Columbia Gas Transmission, LLC	Terra Alta Station	077-00017
Columbia Gas Transmission, LLC	Glady Station	083-00017
Columbia Gas Transmission, LLC	Files Creek Station	083-00019
Columbia Gas Transmission, LLC	Flat Top Station	089-00004
Columbia Gas Transmission, LLC	Cleveland Station	097-00009
Columbia Gas Transmission, LLC	Ceredo Station	099-00013
Columbia Gas Transmission, LLC	Kenova Station	099-00014
Columbia Gas Transmission, LLC	Smithfield Station	103-00010
Columbia Gas Transmission, LLC	Rockport Station	107-00100
Columbia Gas Transmission, LLC	Huff Creek Station	109-00021

Should you have any questions or comments, please feel free to contact our office at the address or telephone number listed above.

Sincerely,

John A. Benedict
Director

JAB/seh

c: Joe Morgan
Megan Murphy
File Room

Attachment S

Title V Permit Revision Information

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)_____)	☒ Section 112(d) MACT standards (Subpart(s)_HHH_____)
☐ 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). If this box is not checked, please explain why **Compliance Assurance Monitoring** is not applicable:

This regulation does not apply because there are no add-on controls at this facility with the exception of the dehys, which are subject to 40 CFR 63 Subpart HHH.

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.

40 CFR 60 Subpart OOOO – The proposed unit is not affected an facility listed under 40 CFR §60.5365

☒ **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
	MM/DD/YYYY	
	/ /	
	/ /	

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
	MM/DD/YYYY	
	/ /	
	/ /	

6. Change in Potential Emissions

Pollutant	Change in Potential Emissions (+ or -), TPY
NO_x	+1.04
CO	+4.10
VOC	+17.19
PM_{10}	+0.11
SO_2	+0.01
Formaldehyde	+0.001

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:	/ / *(Please use blue ink)*
Named (typed):	**Eugene Wood**	Title:	**Manager of Operations**

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.

Application Fee