

Enbridge
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Stockbridge, MI 49285
517-851-6010 (office)
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Vector Pipeline

July 18, 2019

Michigan Department of Environment, Great Lakes and Energy
AQD - Technical Programs Unit
Constitution Hall, 2nd Floor South
525 West Allegan Street
Lansing, MI 48933



RE: Vector Pipeline, L.P. – Athens Compressor Station (SRN N8151)
Stack Emissions Test Report

Dear Sir or Madam:

Vector Pipeline, L.P. has completed emission testing for the natural gas-fired compressor turbine (EUTURBINE1) located at the Athens Compressor Station and permitted under MI-ROP-N8151-2016. The final Stack Emission Test Report is enclosed for your review. A signed Form EQP 5736 is also included herein, as noted in the Air Quality Division's March 2018 guidance for emission test submittals.

If you have any questions concerning this test plan, please contact me at (517) 851-6010 or via email at James.Snider@Enbridge.com.

Sincerely,


James Snider, P.E.
Environmental Specialist

Enclosure: Athens Compressor Station Emissions Test Report, July 8, 2019

c: Mr. Rex Lane, Kalamazoo District Supervisor, EGLE - AQD

Maces ✓

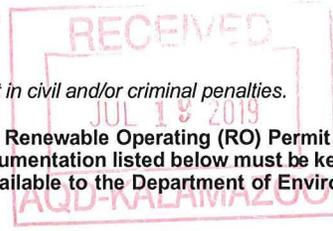


MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

**RENEWABLE OPERATING PERMIT
REPORT CERTIFICATION**

Authorized by 1994 P.A. 451, as amended. Failure to provide this information may result in civil and/or criminal penalties.

Reports submitted pursuant to R 336.1213 (Rule 213), subrules (3)(c) and/or (4)(c), of Michigan's Renewable Operating (RO) Permit program must be certified by a responsible official. Additional information regarding the reports and documentation listed below must be kept on file for at least 5 years, as described in General Condition No. 22 in the RO Permit and be made available to the Department of Environmental Quality, Air Quality Division upon request.



Source Name Vector Pipeline L.P., Athens Compressor Station County Calhoun

Source Address 4981 Two Mile Road City Athens

AQD Source ID (SRN) N8151 RO Permit No. MI-ROP-N8151-2016 RO Permit Section No. _____

Please check the appropriate box(es):

Annual Compliance Certification (General Condition No. 28 and No. 29 of the RO Permit)

Reporting period (provide inclusive dates): From _____ To _____

- 1. During the entire reporting period, this source was in compliance with ALL terms and conditions contained in the RO Permit, each term and condition of which is identified and included by this reference. The method(s) used to determine compliance is/are the method(s) specified in the RO Permit.
- 2. During the entire reporting period this source was in compliance with all terms and conditions contained in the RO Permit, each term and condition of which is identified and included by this reference, EXCEPT for the deviations identified on the enclosed deviation report(s). The method used to determine compliance for each term and condition is the method specified in the RO Permit, unless otherwise indicated and described on the enclosed deviation report(s).

Semi-Annual (or More Frequent) Report Certification (General Condition No. 23 of the RO Permit)

Reporting period (provide inclusive dates): From _____ To _____

- 1. During the entire reporting period, ALL monitoring and associated recordkeeping requirements in the RO Permit were met and no deviations from these requirements or any other terms or conditions occurred.
- 2. During the entire reporting period, all monitoring and associated recordkeeping requirements in the RO Permit were met and no deviations from these requirements or any other terms or conditions occurred, EXCEPT for the deviations identified on the enclosed deviation report(s).

Other Report Certification

Reporting period (provide inclusive dates): From _____ To _____

Additional monitoring reports or other applicable documents required by the RO Permit are attached as described:

This certification pertains to the attached Stack Emission Test Report for the natural gas fired turbine
that was stack tested on May 29, 2019.

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this report and the supporting enclosures are true, accurate and complete.

Belinda Friis	Chief Compliance Officer	(734) 462-7621
_____ Name of Responsible Official (print or type)	_____ Title	_____ Phone Number
<u>Belinda Friis</u>		<u>7/18/19</u>
_____ Signature of Responsible Official		_____ Date

COMPLIANCE STACK EMISSION TEST REPORT

NATURAL GAS-FIRED TURBINE (EUTURBINE1)

Determination of Nitrogen Oxides Emissions

Utilizing US EPA Methods 3A and 7E

Test Date(s): May 29, 2019

Facility ID: N8151

Facility Name: Vector Pipeline L.P. - Athens Compressor Station

Source Location: Athens, Michigan

Permit: EGLE Renewable Operating Permit

No. MI-ROP-N8151-2016

Prepared For:

Vector Pipeline L.P.

300 Mount Pleasant Road • Stockbridge, MI 49285

Prepared By:

Montrose Air Quality Services, LLC

4949 Fernlee Avenue • Royal Oak, MI 48073

Phone: (248) 548-8070

Document Number: M049AS-523671-RT-37R0

Document Date: July 8, 2019

Test Plan: 049AS-523673 dated 2/27/2019



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TEST RESULTS SUMMARY

Source Name:	Natural Gas-Fired Turbine
Source ID Number:	EUTURBINE1
Control Device:	Dry Low NO_x Burners
Test Date:	May 29, 2019
Sampling Location:	Turbine Exhaust Duct
Natural Gas Flowrates (MSCF/Day)*	1.97
NO_x Concentration (ppm)†	7.03
<i>Permit Limit - NO_x ppm †</i>	25
<i>Emission Results Below Permit Limit</i>	YES

Permit No. EGLE ROP No. MI-ROP-N8151-2016

* Production data was supplied by Vector Pipeline L.P. - Athens Compressor Station personnel.

† Corrected to 15% Oxygen

REVIEW AND CERTIFICATION

The results of the Compliance Test conducted on May 29, 2019 are a product of the application of the United States Environmental Protection Agency (US EPA) Stationary Source Sampling Methods listed in 40 CFR Part 60, Appendix A, that were in effect at the time of this test.

All work, calculations, and other activities and tasks performed and presented in this document were carried out by me or under my direction and supervision. I hereby certify that, to the best of my knowledge, Montrose operated in conformance with the requirements of the Montrose Quality Management System and ASTM D7036-04 during this test project.

Signature:  Date: 7-11-19
Name: Mason Sakshaug Title: Field Project Manager

I have reviewed, technically and editorially, details, calculations, results, conclusions, and other appropriate written materials contained herein. I hereby certify that, to the best of my knowledge, the presented material is authentic, accurate, and conforms to the requirements of the Montrose Quality Management System and ASTM D7036-04.

Signature:  Date: 7-11-19
Name: Randal Tysar Title: District Manager

1.0 INTRODUCTION

1.1 SUMMARY OF TEST PROGRAM

The Vector Pipeline L.P. - Athens Compressor Station (Facility ID: N8151), located in Athens, Michigan, contracted Montrose Air Quality Services, LLC (Montrose) of Detroit, Michigan, to conduct compliance stack emission testing for their Natural Gas-Fired Turbine (EUTURBINE1). Testing was performed to satisfy the emissions testing requirements pursuant to Michigan Department of Environment, Great Lakes and Energy (EGLE) Renewable Operating Permit No. MI-ROP-N6838-2016. Testing was performed on May 29, 2019.

Sampling was performed at the Turbine Exhaust Duct to measure the concentration of nitrogen oxides (NO_x) ppmvd corrected to 15% Oxygen (O₂). Testing was conducted during operations within ±25 percent of 100 percent peak load. During this test emissions from the turbine were controlled using dry low NO_x emission control (SoLoNO_x) technology.

The test methods that were conducted during this test were US EPA Methods 3A and 7E.

1.2 KEY PERSONNEL

The key personnel who coordinated this test program (and their phone numbers) were:

- James Snider, Environmental Specialist, Vector Pipeline, 218-269-0591
- Mason Sakshaug QI, Field Project Manager, Montrose, 989-323-0355

2.0 SUMMARY AND DISCUSSION OF TEST RESULTS

2.1 OBJECTIVES AND TEST MATRIX

The purpose of this test was to determine the emissions of NO_x at the Turbine Exhaust Duct during operations within ±25 percent of 100 percent peak load. Testing was performed to satisfy the emissions testing requirements pursuant to EGLE Renewable Operating Permit No. MI-ROP-N6838-2016.

The specific test objectives for this test were as follows:

- Measure the concentration of O₂ and NO_x at the Turbine Exhaust Duct.
- Utilize the above variables to determine the concentration of NO_x (ppm) corrected to 15% O₂ at the Turbine Exhaust Duct during operations within ±25 percent of 100 percent peak load.

Table 2.1 presents the sampling matrix log for this test.

2.2 FIELD TEST CHANGES AND PROBLEMS

No field test changes or problems occurred during the performance of this test that would bias the accuracy of the results of this test.

2.3 PRESENTATION OF RESULTS

A single sampling train was utilized during each run at the Turbine Exhaust Duct to determine the concentration of NO_x ppmvd corrected to 15% O₂. This sampling train measured the duct gas concentrations of O₂ and NO_x.

Table 2.2 displays the concentration of NO_x ppmvd corrected to 15% O₂ measured at the Turbine Exhaust Duct during operations within ±25 percent of 100 percent peak load.

Table 2.3 displays the results of the Stratification Test performed during Run 1 at the Turbine Exhaust Duct. As displayed, the difference between the individual diluent concentrations and the mean concentration met the Stratification Acceptance Criteria as specified in US EPA Method 7E, Section 8.1.2. For subsequent runs, a single point was utilized to perform sampling.

The graphs that present the raw, uncorrected concentration data measured in the field by the US EPA Method 3A and 7E sampling systems at the Turbine Exhaust Duct are located in the Field Data section of the Appendix.