

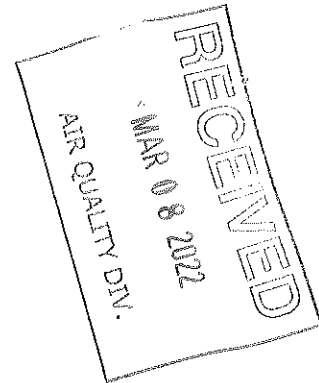
**SOURCE TEST REPORT
2021 COMPLIANCE EMISSIONS TESTING**

**BLACK GOLD TRANSPORT, INC.
WAYLAND, MICHIGAN**

HOT MIX ASPHALT PLANT (EUHMAPLANT)

Prepared For:

Black Gold Transport, Inc.
4237 Dorr Commerce Drive
Wayland, MI 49437



For Submittal To:

EGLE
525 W. Allegan Street
Lansing, MI 48933

Prepared By:

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Test Date: **August 17, 2021**
Submittal Date: **September 30, 2021**



REVIEW AND CERTIFICATION

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: Todd Wessel Date: 09 / 10 / 2021

Name: Todd Wessel Title: Client 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: *M Young* Date: 09 / 13 / 2021

Name: Matthew Young Title: District Manager

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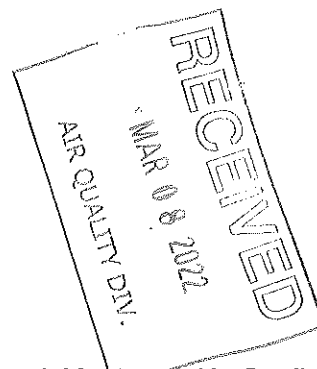
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1.0 INTRODUCTION

1.1 SUMMARY OF TEST PROGRAM

Black Gold Transport, Inc. (State Registration No.: P1138) contracted Montrose Air Quality Services, LLC (Montrose) to perform a compliance test program on the Hot Mix Asphalt Plant (EUHMAPLANT) at the Black Gold Transport, Inc. facility located in Wayland, Michigan. Testing was performed on August 17, 2021, for the purpose of satisfying the emission testing requirements pursuant to Michigan Department of Environment, Great Lakes, and Energy (EGLE) Permit-to-Install (PTI) No. 83-20.

The specific objectives were to:

- Verify the emissions of filterable particulate matter (FPM) at the baghouse exhaust stack (SVHMAPLANT) serving EUHMAPLANT
- Conduct the test program with a focus on safety

Montrose performed the tests to measure the emission parameters listed in Table 1-1.

**TABLE 1-1
SUMMARY OF TEST PROGRAM**

Test Date(s)	Unit ID/ Source Name	Activity/ Parameters	Test Methods	No. of Runs	Duration (Minutes)
8/17/2021	EUHMAPLANT	Velocity/Volumetric Flow Rate	EPA 1 & 2	3	60
8/17/2021	EUHMAPLANT	O ₂ , CO ₂	EPA 3	3	60
8/17/2021	EUHMAPLANT	Moisture	EPA 4	3	60
8/17/2021	EUHMAPLANT	FPM	EPA 5	3	60

To simplify this report, a list of Units and Abbreviations is included in Appendix D.1. Throughout this report, chemical nomenclature, acronyms, and reporting units are not defined. Please refer to the list for specific details.

This report presents the test results and supporting data, descriptions of the testing procedures, descriptions of the facility and sampling locations, and a summary of the quality assurance procedures used by Montrose. The average emission test results are summarized and compared to their respective permit limits in Table 1-2. Detailed results for individual test runs can be found in Section 4.0. All supporting data can be found in the appendices.

The testing was conducted by the Montrose personnel listed in Table 1-3. The tests were conducted according to the Test Plan dated June 17, 2021 that was submitted to the EGLE.

**TABLE 1-2
SUMMARY OF AVERAGE COMPLIANCE RESULTS -
EUHMAPLANT
AUGUST 17, 2021**

Parameter/Units	Average Results	Emission Limits
Filterable Particulate Matter (FPM)		
gr/dscf	0.0054	0.04
lb/ton	0.0035	0.02

1.2 KEY PERSONNEL

A list of project participants is included below:

Facility Information

Source Location:	Black Gold Transport, Inc. 4237 Dorr Commerce Drive Wayland, MI 49438	
Project Contact:	Rahn Bentley	Zach Steensma
Role:	Plant Manager	Plant Operator
Company:	Black Gold Transport, Inc.	Black Gold Transport, Inc.
Telephone:	616-292-1536	616-644-2929
Email:	rahn@blackgoldpavinginc.com	tower@blackgoldpavinginc.com

Agency Information

Regulatory Agency: EGLE
Agency Contact: Karen Kajiya-Mills
Telephone: 517-335-3122
Email: kajiya-millk@michigan.gov

Testing Company Information

Testing Firm:	Montrose Air Quality Services, LLC	
Contact:	Matthew Young	Todd Wessel
Title:	District Manager	Client Project Manager
Telephone:	248-548-8070	248-548-8070
Email:	myoung@montrose-env.com	twessel@montrose-env.com

Laboratory Information

Laboratory: Montrose Royal Oak
City, State: Royal Oak, MI
Method: EPA Method 5

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Test personnel and observers are summarized in Table 1-3.

**TABLE 1-3
TEST PERSONNEL AND OBSERVERS**

Name	Affiliation	Role/Responsibility
Todd Wessel	Montrose	Client Project Manager, QI
Shane Rabideau	Montrose	Field Technician
Rahn Bentley	Black Gold Transport, Inc.	Observer/Client Liaison/Test Coordinator
Trevor Drost	EGLE	Observer
Cody Yazzie	EGLE	Observer

2.0 PLANT AND SAMPLING LOCATION DESCRIPTIONS

2.1 PROCESS DESCRIPTION, OPERATION, AND CONTROL EQUIPMENT

The Hot Mix Asphalt (HMA) (EUHMAPLANT) plant includes aggregate conveyors, 400 ton per hour counter flow drum, and a fabric filter dust collector. Particulate emissions are controlled by a baghouse. Satisfactory operation of the baghouse requires a pressure drop range between two and ten inches of water column. EUHMAPLANT was in operation for this test event.

2.2 FLUE GAS SAMPLING LOCATION

Information regarding the sampling location is presented in Table 2-1.

**TABLE 2-1
SAMPLING LOCATION**

Sampling Location	Stack Inside Diameter (in.)	Distance from Nearest Disturbance		Number of Traverse Points
		Downstream EPA "B" (in./dia.)	Upstream EPA "A" (in./dia.)	
EUHMAPLANT Baghouse Exhaust Stack	60.5	144.0 / 2.4	240.0 / 4.0	Isokinetic: 24 (12/port)

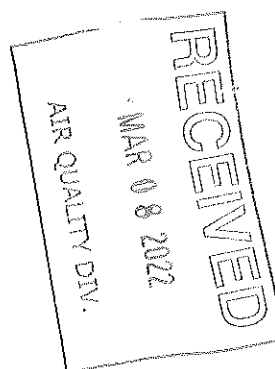
The sampling location was verified in the field to conform to EPA Method 1. Acceptable cyclonic flow conditions were confirmed prior to testing using EPA Method 1, Section 11.4. See Appendix A.1 for more information.

2.3 OPERATING CONDITIONS AND PROCESS DATA

Emission tests were performed while the EUHMAPLANT and baghouse were operating at the conditions required by the permit.

Plant personnel were responsible for establishing the test conditions and collecting all applicable unit-operating data. The process data that was provided is presented in Appendix B. Data collected includes the following parameters:

- Pressure drop, in-H₂O
- Hot mix asphalt production, tons/hr



3.0 SAMPLING AND ANALYTICAL PROCEDURES

3.1 TEST METHODS

The test methods for this test program were presented previously in Table 1-1. Additional information regarding specific applications or modifications to standard procedures is presented below.

3.1.1 EPA Method 1, Sample and Velocity Traverses for Stationary Sources

EPA Method 1 is used to assure that representative measurements of volumetric flow rate are obtained by dividing the cross-section of the stack or duct into equal areas, and then locating a traverse point within each of the equal areas. Acceptable sample locations must be located at least two stack or duct equivalent diameters downstream from a flow disturbance and one-half equivalent diameter upstream from a flow disturbance.

The sample port and traverse point locations are detailed in Appendix A.1.

3.1.2 EPA Method 2, Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube)

EPA Method 2 is used to measure the gas velocity using an S-type pitot tube connected to a pressure measurement device, and to measure the gas temperature using a calibrated thermocouple connected to a thermocouple indicator. Typically, Type S (Stausscheibe) pitot tubes conforming to the geometric specifications in the test method are used, along with an inclined manometer. The measurements are made at traverse points specified by EPA Method 1.

3.1.3 EPA Method 3, Gas Analysis for the Determination of Dry Molecular Weight

EPA Method 3 is used to calculate the dry molecular weight of the stack gas using one of three methods. The first choice is to measure the percent O₂ and CO₂ in the gas stream. A gas sample is extracted from a stack by one of the following methods: (1) single-point, grab sampling; (2) single-point, integrated sampling; or (3) multi-point, integrated sampling. The gas sample is analyzed for percent CO₂ and percent O₂ using either an Orsat or a Fyrite analyzer. The second choice is to use stoichiometric calculations to calculate dry molecular weight.

3.1.4 EPA Method 4, Determination of Moisture Content in Stack Gas

EPA Method 4 is a manual, non-isokinetic method used to measure the moisture content of gas streams. Gas is sampled at a constant sampling rate through a probe and impinger train. Moisture is removed using a series of pre-weighed impingers containing methodology-specific liquids and silica gel immersed in an ice water bath. The impingers are weighed after each run to determine the percent moisture.

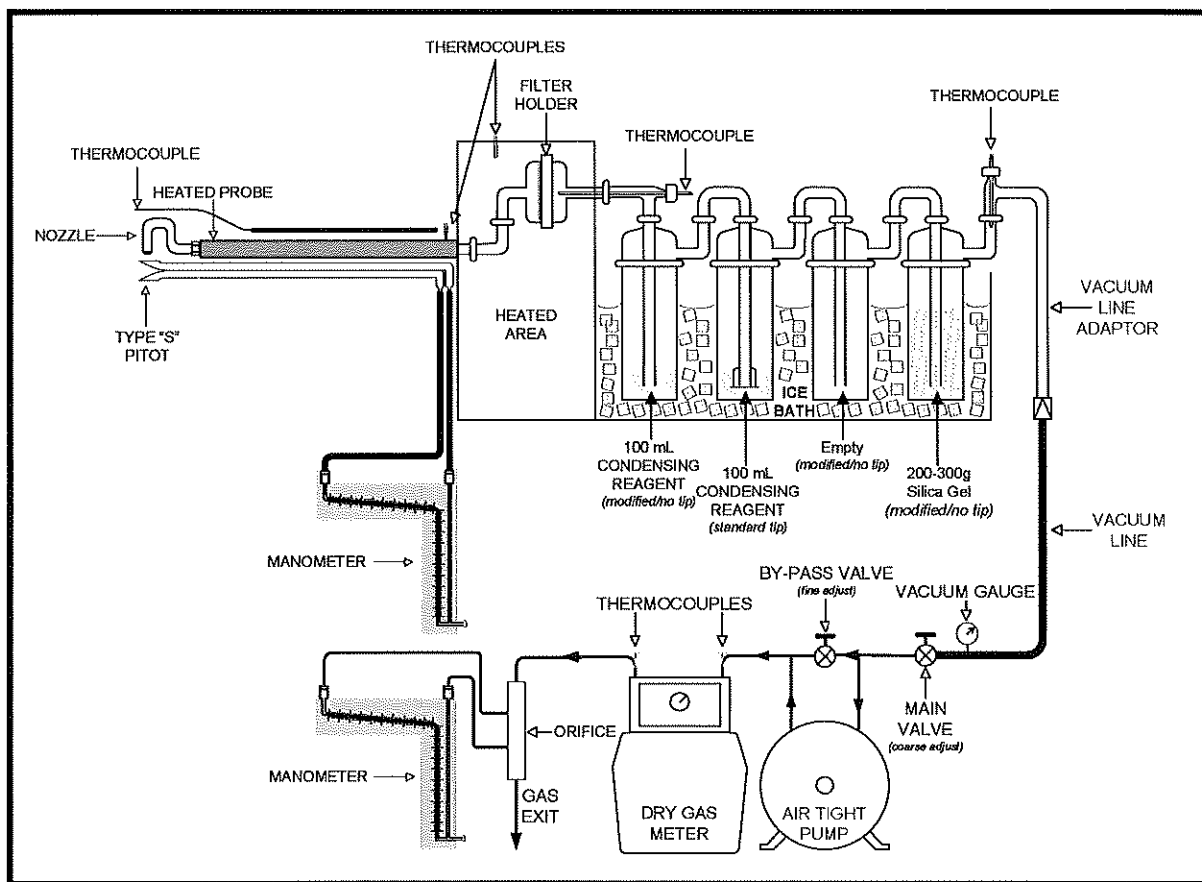
The typical sampling system is detailed in Figure 3-1.

3.1.5 EPA Method 5, Determination of Particulate Matter from Stationary Sources

EPA Method 5 is a manual, isokinetic method used to measure FPM emissions. The samples are analyzed gravimetrically. This method is performed in conjunction with EPA Methods 1 through 4. The stack gas is sampled through a nozzle, probe, filter, and impinger train. FPM results are reported in emission concentration and emission rate units.

The typical sampling system is detailed in Figure 3-1.

**FIGURE 3-1
EPA METHOD 5 SAMPLING TRAIN**



3.2 PROCESS TEST METHODS

The test plan did not require that process samples be collected during this test program; therefore, no process sample data are presented in this test report.

4.0 TEST DISCUSSION AND RESULTS

4.1 FIELD TEST DEVIATIONS AND EXCEPTIONS

No field deviations or exceptions from the test plan or test methods occurred during this test program.

4.2 PRESENTATION OF RESULTS

The average results are compared to the permit limits in Table 1-2. The results of individual compliance test runs performed are presented in Table 4-1. Emissions are reported in units consistent with those in the applicable regulations or requirements. Additional information is included in the appendices as presented in the Table of Contents.

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**TABLE 4-1
FPM EMISSIONS RESULTS -
EUHMAPLANT**

Run Number	1	2	3	Average
Date	8/17/2021	8/17/2021	8/17/2021	--
Time	8:16-9:23	10:17-11:21	12:27-13:30	--
Process Data *				
Production Rate, tons/hr	389	401	394	395
Baghouse Pressure Drop, in-H ₂ O	2.5	3.2	3.0	3.0
Flue Gas Parameters				
O ₂ , % volume dry	13.00	13.00	13.00	13.00
CO ₂ , % volume dry	6.00	6.00	6.00	6.00
flue gas temperature, °F	185.3	190.6	194.9	190.3
moisture content, % volume	32.61	33.43	33.47	33.17
volumetric flow rate, dscfm	29,524	29,049	30,263	29,612
Filterable Particulate Matter (FPM)				
gr/dscf	0.0052	0.0052	0.0058	0.0054
lb/hr	1.33	1.29	1.50	1.37
lb/ton	0.0034	0.0032	0.0038	0.0035

*Process data was provided by Black Gold Transport personnel.

5.0 INTERNAL QA/QC ACTIVITIES

5.1 QA/QC AUDITS

The meter box and sampling train used during sampling performed within the requirements of their respective methods. All post-test leak checks, minimum metered volumes, minimum sample durations, and percent isokinetics met the applicable QA/QC criteria.

Fyrite analyzer audits were performed during this test in accordance with EPA Method 3, Section 10.1 requirements. The results were within $\pm 0.5\%$ of the respective audit gas concentrations.

EPA Method 5 analytical QA/QC results are included in the laboratory report. The method QA/QC criteria were met, except if noted in Section 5.2. An EPA Method 5 reagent blank was analyzed. The maximum allowable amount that can be subtracted is 0.001% of the weight of the acetone blank. The blank did not exceed the maximum residue allowed.

5.2 QA/QC DISCUSSION

All QA/QC criteria were met during this test program.

5.3 QUALITY STATEMENT

Montrose is qualified to conduct this test program and has established a quality management system that led to accreditation with ASTM Standard D7036-04 (Standard Practice for Competence of Air Emission Testing Bodies). Montrose participates in annual functional assessments for conformance with D7036-04 which are conducted by the American Association for Laboratory Accreditation (A2LA). All testing performed by Montrose is supervised on site by at least one Qualified Individual (QI) as defined in D7036-04 Section 8.3.2. Data quality objectives for estimating measurement uncertainty within the documented limits in the test methods are met by using approved test protocols for each project as defined in D7036-04 Sections 7.2.1 and 12.10. Additional quality assurance information is included in the report appendices. The content of this report is modeled after the EPA Emission Measurement Center Guideline Document (GD-043).