


February 10, 2020

MEMORANDUM

To: Karen Hays, Air Branch Chief 

Through: Dika Kuoh, Assistant Branch Chief

From: DeAnna Oser, Ambient Monitoring Program Manager

RE: South DeKalb November 20, 2019 Sampling Results for Ethylene Oxide

Samples of Ethylene Oxide (EtO) were taken at our South DeKalb monitoring station on November 20, 2019. The sample was sent to Eastern Research Group (ERG) for analysis and then sent to EPA Region 4 laboratory for a comparison analysis.

Laboratory	Qualifier	EtO Concentration (ug/m ³)
ERG		0.75
EPA Region 4		1.17

The analytical methods for the quantification of ethylene oxide are challenging, particularly at the low levels measured away from known sources. The methodology in Compendium Method TO-15 *Determination of Volatile Organic Compounds (VOCs) in Air Collected in Specially-Prepared Canisters And Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS)* allows for flexibility in the method while meeting EPA's performance-based criteria. EPA has made improvements to the analytical procedures while maintaining this flexibility and is continuing their work to make further improvements. More inter laboratory comparisons are needed to assess the comparability of the laboratories.

If you have any questions, please let me know.

DGO/do



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4 Laboratory Services and Applied Science Division

980 College Station Road, Athens, Georgia 30605-2700

D.A.R.T. Id: 20-0100

Project: 20-0100, LSB QC Ethylene Oxide Screen for GAEPD - Reported by Kristin Trapp

December 23, 2019

4LSASD-LSB

MEMORANDUM

SUBJECT: FINAL Analytical Report
Project: 20-0100, LSB QC Ethylene Oxide Screen for GAEPD

FROM: Kristin Trapp
OCS Analyst

THRU: Jeffrey Hendel, Chief
LSB Organic Chemistry Section

TO: Stacie Masters

Attached are the final results for the analytical groups listed below. This report shall not be reproduced except in full without approval of the Region 4 laboratory. These analyses were performed in accordance with the Laboratory Services Branch's Laboratory Operations and Quality Assurance Manual (LSB LOQAM) found at www.epa.gov/region4/sesd/asbsop. Any unique project data quality objectives specified in writing by the data requestor have also been incorporated into the data unless otherwise noted in the Report Narrative. Chemistry data have been verified based on the LSB LOQAM specifications and have been qualified by this laboratory if the applicable quality control criteria were not met. Verification is defined in Chapter 5 of the LSB LOQAM. For a listing of specific data qualifiers and explanations, please refer to the Data Qualifier Definitions included in this report. The reported results are accurate within the limits of the method(s) and are representative only of the samples as received by the laboratory.

Analyses Included in this report:	Method Used:	Accreditations:
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Volatile Organics (VOA)		
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Volatile organic compounds		
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	EPA TO-15 (Air)	
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Report Narrative for Work Order: E195002

12/17/19 KT: Sample was analyzed as received- no pressurization or dilution.

Sample Disposal Policy

Due to limited space for long term sample storage, LSB's policy is to dispose of samples on a periodic schedule. Air samples collected in summa canisters will be disposed of 30 days following the issuance of this report. All other sample media including original samples, sample extracts and or digestates will be disposed of, in accordance with applicable regulations, 60 days from the date of this report.

This sample disposal policy does not apply to criminal samples which are held until the laboratory is notified by the criminal investigators that case development and litigation are complete.

These samples may be held in the laboratory's custody for a longer period of time. If samples require storage beyond the 60-day period, please contact the Sample Control Coordinator by e-mail at R4SampleCustody@epa.gov.



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SAMPLES INCLUDED IN THIS REPORT

Project: 20-0100, LSB QC Ethylene Oxide Screen for GAEPD

Sample ID	Laboratory ID	Matrix	Date Collected	Date Received
South Dekalb	E195002-01	Air	11/20/19 23:59	12/9/19 10:45



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DATA QUALIFIER DEFINITIONS

None

ACRONYMS AND ABBREVIATIONS

CAS Chemical Abstracts Service

Note: Analytes with no known CAS identifiers have been assigned codes beginning with "E", the EPA ID as assigned by the EPA Substance Registry System (www.epa.gov/srs), or beginning with "R4-", a unique identifier assigned by the EPA Region 4 laboratory.

MDL Method Detection Limit - The minimum concentration of a substance (an analyte) that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero.

MRL Minimum Reporting Limit - Analyte concentration that corresponds to the lowest demonstrated level of acceptable quantitation. The MRL is sample-specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments.

TIC Tentatively Identified Compound - An analyte identified based on a match with the instrument software's mass spectral library. A calibration standard has not been analyzed to confirm the compound's identification or the estimated concentration reported.

ACCREDITATIONS:

ISO ASB is accredited by ISO/IEC 17025, including an amplification for forensic accreditation through ANSI-ASQ National Accreditation Board.

Refer to the certificate and scope of accreditation AT-1644 at:

<http://www.epa.gov/aboutepa/about-region-4s-science-and-ecosystem-support-division-sesd>

NR The EPA Region 4 Laboratory has not requested accreditation for this test.



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Volatile Organics

Project: 20-0100, LSB QC Ethylene Oxide Screen for GAEPD

Sample ID: South Dekalb

Lab ID: E195002-01

Station ID: GA ETO

Matrix: Air

Date Collected: 11/20/19 23:59

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
75-21-8	Ethylene oxide	0.65		ppbv	0.040	11/20/19 23:59	12/10/19 14:03	EPA TO-15



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Volatile Organics (VOA) - Quality Control

US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1912019 - V TO-15 Air Canister										
Blank (1912019-BLK1)					Prepared: 11/12/19 Analyzed: 12/10/19					
EPA TO-15										
Ethylene oxide	U	0.040	ppbv							U
LCS (1912019-BS1)					Prepared: 12/05/19 Analyzed: 12/10/19					
EPA TO-15										
Ethylene oxide	2.1867		ppbv	2.0240		108	70-130			
LCS Dup (1912019-BSD1)					Prepared: 12/05/19 Analyzed: 12/10/19					
EPA TO-15										
Ethylene oxide	2.1511		ppbv	2.0240		106	70-130	1.64	25	
Duplicate (1912019-DUP2)					Source: E195002-01	Prepared: 11/20/19 Analyzed: 12/10/19				
EPA TO-15										
Ethylene oxide	0.76221	0.040	ppbv		0.65207			15.6	25	
MRL Verification (1912019-PS2)					Prepared: 12/05/19 Analyzed: 12/10/19					
EPA TO-15										
Ethylene oxide	0.038760		ppbv	0.040480		95.8	50-150			MRL-5



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Notes and Definitions for QC Samples

U The analyte was not detected at or above the reporting limit.

MRL-5 MRL verification for Air matrix