SECTION 5 - Public Hearing Notices

Randy Mosier -MDE- <randy.mosier@maryland.gov>

MDE - Notice of Public Hearing Comment Period - COMAR 26.11.08 Control of Incinerators

Randy Mosier -MDE- <randy.mosier@maryland.gov> Fri, Aug 17, 2018 at 1:33 PM
To: Randy Mosier <Randy.Mosier@maryland.gov>
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Notice of public hearing/comment concerning the following proposed actions: (1) amend Regulation .01 under COMAR 26.11.01 - General Administrative Provisions, (2) amend Regulations .01, .02, .04, .05, .07, and .08-2, repeal Regulation .08-1, and adopt new Regulation .10 under COMAR 26.11.08 Control of Incinerators; and (3) Amend Regulation .08 under COMAR 26.11.09 Control of Fuel-Burning Equipment, Stationary Internal Combustion Engines, and Certain Fuel-Burning Installations.

The Maryland Department of the Environment gives notice of the following public hearing/comment period: The purpose of this action is to repeal nitrogen oxide (NOx) reasonable available control technology (RACT) requirements under COMAR 26.11.09.08H and establish new NOx RACT and analysis of possible additional NOx emission control requirements under COMAR 26.11.08.10 for large municipal waste combustors (MWCs). Additionally, this action amends opacity requirements under 26.11.01, adds definitions, repeals 26.11.08.08-1 and updates references to 26.11.08.08-2, which is the current emission standards and requirements for hospital, medical and infectious waste incinerators (HMIWIs).

The amendments pertaining to large MWCs will be submitted to the U.S. Environmental Protection Agency (EPA) for approval as part of Maryland's State Implementation Plan (SIP). The amendments pertaining to small MWCs and HMIWIs will be submitted to the EAP for approval as part of Maryland's 111(d) and 129 plans.

The full text of the proposed new regulation appeared in the Maryland Register on August 17, 2018 (see attached).

For additional information and the Technical Support Document (TSD) visit: https://mde.maryland.gov/programs/Regulations/air/Pages/reqcomments.aspx.

A public hearing on this action will be held on **September 21, 2018**, at 10:00 a.m. at the Department of the Environment, 1800 Washington Boulevard, 7th Floor Conference Rooms, Baltimore, Maryland 21230-1720.

Comments must be received by 5:00 p.m. on September 21, 2018.

For more information or to submit comments, call or email:

Randy Mosier, Chief, Regulation Development Division
Air Quality Planning Program
Air and Radiation Administration
Department of the Environment
1800 Washington Boulevard, Suite 730, Baltimore, Maryland 21230-1720
Telephone: (410) 537-4488
Email: randy.mosier@maryland.gov

MWC NPA MD_Reg_08-17-2018.pdf

Maryland
Department of
the Environment

Larry Hogan
Governor

Boyd Rutherford
Lieutenant Governor

Ben Grumbles
Secretary

September 20, 2018

CERTIFICATION OF PUBLICATION

This is to certify that the "Notice of public hearing/comment concerning the following proposed actions: (1) amend Regulation .01 under COMAR 26.11.01 - General Administrative Provisions, (2) amend Regulations .01, .02, .04, .05, .07, and .08-2, repeal Regulation .08-1, and adopt new Regulation .10 under COMAR 26.11.08 Control of Incinerators; and (3) Amend Regulation .08 under COMAR 26.11.09 Control of Fuel-Burning Equipment, Stationary Internal Combustion Engines, and Certain Fuel-Burning Installations." was published on MDE's web site August 17, 2018. The notice will remain posted until September 30, 2018. The notice in full with links to supporting documents may be found in the following web address:

https://mde.maryland.gov/programs/Regulations/air/Pages/reqcomments.aspx

Web publication of the notice was at the request of Carolyn Jones, Regulations Coordinator of the Air and Radiation Administration of MDE.

By:

Joseph E. Herb Jr.

JOE HERB
MDE Webmaster

Attachment:
Copy of web page as published.

Air & Radiation Regulations

- Emergency Air & Radiation Regulations
- Proposed Air & Radiation Regulations
- Adopted Air & Radiation Regulations
- Air & Radiation Regulations in Development
- Air Regulation Stakeholder Meetings
- Public Hearings, Meetings and Request for Comments
- Air Regulations Home
- MDE Regulations Home

Air & Radiation Regulations Public Hearings, Meetings and Request for Comments

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The amendments pertaining to large MWCs will be submitted to the U.S. Environmental Protection Agency (EPA) for approval as part of Maryland's State Implementation Plan (SIP). The amendments pertaining to small MWCs and HMIWIs will be submitted to the EAP for approval as part of Maryland's 111(d) and 129 plans.

The full text of the proposed new regulation will appear in the Maryland Register on **August 17, 2018**.

Click here to read the Technical Support Document (TSD).

A public hearing on this action will be held on September 21, 2018, at 10:00 a.m. at the Department of the Environment, 1800 Washington Boulevard, 7th Floor Conference Rooms, Baltimore, Maryland 21230-1720.

Comments must be received by 5:00 p.m. on **September 21, 2018**.

For more information or to submit comments, call or email:

Randy Mosier, Chief, Regulation Development Division
Air Quality Planning Program
Air and Radiation Administration
Maryland Department of the Environment
1800 Washington Boulevard, Suite 730, Baltimore, Maryland 21230-1720
Telephone: (410) 537-4488

SECTION 6 - Maryland Department of the Environment Hearing Statement

Statement of the Air and Radiation Administration
Department of the Environment
for the Public Hearing Relating to Proposed
Amendments concerning the following proposed actions: (1) amend Regulation .01 under COMAR 26.11.01 - General Administrative Provisions, (2) amend Regulations .01, .02, .04, .05, .07, and .08-2, repeal Regulation .08-1, and adopt new Regulation .10 under COMAR 26.11.08 Control of Incinerators; and (3) Amend Regulation .08 under COMAR 26.11.09 Control of Fuel-Burning Equipment, Stationary Internal Combustion Engines, and Certain Fuel-Burning Installations.

Held on September 21, 2018
Baltimore, MD

My name is Carolyn Jones. I am the Senior Regulatory and Compliance Engineer with the Regulation Development Division of the Air and Radiation Administration, Maryland Department of the Environment.

This public hearing is being held pursuant to the requirements of section 110(a) of the Clean Air Act and 40 CFR Section 51.102. It is also being held in conformance with the State Administrative Procedure Act, codified under the Annotated Code of Maryland, State Government Article, Section 10-101 et. seq., and the Annotated Code of Maryland, Environment Article, Section 2-301 et.seq.

Notice of this hearing appeared in the Maryland Register on August 17, 2018.

Copies of the proposed action and supporting documents are submitted at this time into the hearing record. Copies were also made available for public inspection at the Maryland Department of the Environment Air and Radiation Administration offices in Baltimore and at the Air and Radiation Administration webpage titled "Air & Radiation Regulations Public Hearings, Meetings and Request for Comments", from August 16 to September 21, 2018.

The purpose of today's hearing is to give the public an opportunity to comment on the proposed amendments to **COMAR 26.11.08 Control of Incinerators and accompanying regulation amendments**.

Summary

The purpose of this action is to repeal existing nitrogen oxide (NOx) reasonable available control technology (RACT) requirements under COMAR 26.11.09.08H and establish new NOx RACT requirements and analysis of possible additional NOx emission control requirements under COMAR 26.11.08.10 for Large municipal waste combustors (MWCs). Additionally, this action amends opacity requirements under 26.11.01, adds definitions, repeals 26.11.08.08-1 and updates references to 26.11.08.08-2, which is the current emission standards and requirements for hospital, medical and infectious waste incinerators (HMIWIs).

The NOx RACT requirements pertaining to Large MWCs will be submitted to the U.S. Environmental Protection Agency (EPA) for approval as part of Maryland's SIP. The amendments pertaining to Small MWCs and HMIWIs will be submitted to the EPA for approval as part of Maryland's 111(d) and 129 plans.

Regulation Amendments

The proposed amendments establish new NOx RACT standards and requirements for Large MWCs with a capacity greater than 250 tons per day. New COMAR 26.11.08.10 requires that Maryland's two Large MWCs shall meet new, individual NOx 24-hour block average emission rates by May 1, 2019. The Montgomery County Resource Recovery Facility shall meet a NOx 24-hour block average emission rate of 140 ppmv. The Wheelabrator Baltimore, Inc. facility shall meet a NOx 24-hour block average emission rate of 150 ppmv.

To further ensure consistent long-term operation of NOx control technologies, the Large MWCs must also meet new, individual NOx 30-day rolling average emission rates by May 1, 2020. The Montgomery County Resource Recovery Facility shall meet a NOx 30-day rolling average emission rate of 105 ppmv. The Wheelabrator Baltimore, Inc. facility shall meet a NOx 30-day rolling average emission rate of 145 ppmv.

Large MWCs are required to meet the NOx 24-hour block average and NOx 30-day rolling average emission rates, except during periods of startup and shutdown. Concentration-based emission limits are not practical during startup and shutdown because it is technically infeasible for MWCs to comply with the emission rates due to the "7 percent oxygen correction factor" that is required to be applied to the NOx 24-hour block rates. During periods of startup and shutdown, additional ambient air is introduced into the furnace. Applying the correction factor of 7 percent oxygen during these periods grossly misrepresents the actual NOx emissions produced from startup and shutdown operations. Therefore, an equivalent mass-based emission limit is substituted. During periods of startup and shutdown the Montgomery County Resource Recovery Facility shall meet a facility wide NOx emission limit of 202 lbs/hr timed average mass loading over a 24-hour period and the Wheelabrator Baltimore, Inc. facility shall meet a facility wide NOx emission limit of 252 lbs/hr timed average mass loading over a 24-hour period. The duration of startup and shutdown procedures for a Large MWC are not to exceed three hours per occurrence, and the NOx 24-hour mass emission limits apply during these times.

The mass emission limits during periods of startup and shutdown incorporate the 24-hour block average NOx RACT rates (these rates are part of the calculation used to derive the mass NOx emission limits) applicable to each Large MWC providing equivalent stringency to those concentration limits, which apply at all other times. Mass based emission calculations are derived utilizing 40 CFR § 60.58b(h)(2) of subpart Eb (Concentration correction to 7 percent oxygen) or 40 CFR 60.45 (Conversion procedures to convert CEM data into applicable standards). EPA Method 19 may also be utilized to determine NOx emission rates based upon oxygen concentrations. Facility average flue gas flow rates are also utilized in the calculations. The calculation methodology for the mass emission limits is based upon the Prevention of Significant Deterioration (PSD) Approval for each affected facility.

In addition to the mass-based emission limit, the NOx 24-hour block average emission rate will apply for the 24-hour period after startup and before shutdown, as applicable.

The new NOx RACT further specifies that a Large MWC shall minimize NOx emissions at all times the unit is in operation, including periods of startup and shutdown, by operating and optimizing the unit and all installed pollution control technology and combustion controls consistent with the technological limitations, manufacturers' specifications, good engineering and maintenance practices, and good air pollution control practices for minimizing emissions (as defined in 40 CFR §60.11(d)). Large MWCs shall continuously monitor NOx emissions with a continuous emission monitoring system (CEM) in accordance with COMAR 26.11.01.11. Large MWCs are also required to submit quarterly reports to the Department containing data, information, and calculations which demonstrate compliance with the NOx RACT emission rates and NOx mass loading emission limits. The reports shall include flagging of periods of startup and shutdown and exceedance of emission rates, as well as documented actions taken during periods of startup and shutdown in signed, contemporaneous operating logs.

Additional NOx Emission Control Requirements

The proposed NOx RACT requirements, when effective, will result in immediate reductions in NOx emissions from the Wheelabrator Baltimore Inc. Large MWC. This action also contains possible additional NOx emission control requirements that may be needed by Maryland to attain and maintain compliance with the 2015 ozone NAAQS.

Not later than January 1, 2020, the owner or operator of Wheelabrator Baltimore Inc. shall submit to the Department a feasibility analysis regarding additional control of NOx emissions from the Wheelabrator Baltimore Inc. facility. This analysis shall be prepared by an independent third party and must include: a written narrative and schematics detailing the existing facility operations, boiler design, NOx control technologies and relevant emission performance; a written narrative and schematics detailing various state of the art NOx control technologies for achieving the lowest possible NOx emissions from existing MWCs in consideration of the overall facility design at Wheelabrator Baltimore Inc.; an analysis of whether each identified state of the art control technology could technically be implemented at the Wheelabrator Baltimore Inc. facility; a cost-benefit analysis of capital and operating costs, NOx emission benefits, and air quality impacts resulting from each identified state of the art control technology; and a schedule for installation and implementation of each identified NOx emission control technology.

The feasibility analysis for Wheelabrator Baltimore Inc. should review and examine NOx emission control technologies capable of achieving NOx emission levels comparable to those for a new source (e.g. selective catalytic reduction – SCR). The Department conducted research on existing MWCs around the country and was not able to find examples of existing MWCs that were retrofitted with an SCR. Adding SCR NOx emission control technologies, or other comparable NOx emission reduction strategies, would likely not be considered RACT because of the complex design requirements and cost issues. SCR NOx emission control strategies are standard equipment on new Large MWCs. The intent of the feasibility analysis is to evaluate

what lower NOx RACT emission limit could be achieved at Wheelabrator Baltimore Inc. without a re-build of the entire facility.

Based on the results of the feasibility analysis, Wheelabrator Baltimore Inc. shall submit to the Department a NOx 24-hour block average emission rate, NOx 30-day rolling average emission rate, and NOx mass loading emission limitation for periods of startup, shutdown, and malfunction by January 1, 2020. Wheelabrator Baltimore, Inc. shall provide the Department with no less than two weeks notice and the opportunity to observe any optimization procedure, including installation or operation of NOx emission control technology, for the express purpose of developing the feasibility analysis.

Projected Emissions Reductions

MDE projects the implementation of the new NOx RACT requirements for Large MWCs will result in approximately 200 tons of NOx emissions reduced on an annual basis. There are no expected NOx emission reductions for Small MWCs.

As of October 6, 2014, Maryland sources have already applied control technologies to the incineration process and to post incineration emissions to meet the HMIWI NOx emission standards, and other requirements, as specified in the 111(d) plan of COMAR 26.11.08.08-2.

Economic Impact

Large MWCs are expected to incur a small increase in operating costs as a result of optimization of existing control technology. The operating cost increase is projected to be in the range $1,123 to $1,269 per ton of NOx reduced based on the increase in urea consumption. Additional capital costs have been incurred at the Wheelabrator Baltimore, Inc. facility in an effort to meet the proposed NOx RACT emission rates. Wheelabrator Baltimore, Inc. has conducted several analyses of existing operating combustion and control systems, and has modified urea injection systems to be optimized for multiple parameters. The facility has also modified interface combustion controls with SNCR operation and control through automation of the urea feed system. Specific cost information has not been made available to the Department.

There are no expected economic impacts for Small MWCs and HMIWIs. There will be no impact on the Department or other state agencies or local government as a result of this action.

Maryland’s State Implementation Plan (SIP)

These amendments will be submitted to the U.S. Environmental Protection Agency (EPA) for approval as part of Maryland's State Implementation Plan.

Consideration of Comments

The Department will consider all comments before making a decision to adopt the new regulation and amendments.

SECTION 7 - Public Hearing Transcript

MARYLAND DEPARTMENT OF THE ENVIRONMENT
AIR AND RADIATION ADMINISTRATION
PUBLIC HEARING CONCERNING REGULATION/AMENDMENT COMAR 26.11.08 and associated
September 21, 2018

This Notice is provided pursuant to § 4-501 of the General Provisions Article of the Maryland Code. The personal information requested on this sign-in sheet is intended to be used to contact you concerning further information about the subject of this public hearing or meeting. Failure to provide the information requested may result in you not receiving further information. You have the right to inspect, amend, or correct this sign-in sheet. The Maryland Department of the Environment ("MDE") is a public agency and subject to the Maryland Public Information Act. This form may be made available on the Internet via MDE's website and subject to inspection or copying, in whole or in part, by the public and other governmental agencies, if not protected by federal or State law.

Name (please print)	Signature	Organization or Affiliation	E-mail Address/Phone Number	Do You Wish To Testify?
Deborah Kleinmann	[signature]	Sierra Club Educator	spicearoni@gmail.com	✓ yes
Ava Richardson	[signature]	EJN	ava.i.richardson@gmail.com	NO
Chris Skaggs	[signature]	NMWDA	cskaggs@nmwda.org	Yes
Mary Worban	[signature]	—	MARYWR3714@ g	NO
Roberta Jones	[signature]	United Workers	rodette76@msn.com	no
Jessica Forsythe	[signature]	United Workers Curtis Bay Resident	~~[illegible]~~	NO
Alayna Chuney	[signature]	Namati	AlaynaChuney@namati.org	no

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Name (please print)	Signature	Organization or Affiliation	E-mail Address/Phone Number	Do You Wish To Testify?
Ted Michaels	Ted Michaels	Energy Recovery Council	tmichaels@energyrecoverycouncil.org 202-467-6240	yes
Tim Porter	Tim Porter	Wheelabrator	tporter@wtienergy.com	NO
Arlene Ogurick Arlene Ogurick	Arlene Ogurick	CCAN	aogurick2001@yahoo.com	No
Nicole Fabricant	N. Fabricant	Towson U.		Yes
Terrel Askew	Terrel Askew	United Workers	askewterrel@gmail.com	Yes
Troiano Rivera	Troiano Rivera	Clean Water Action	trivera@cleanwater.org	✓

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Name (please print)	Signature	Organization or Affiliation	E-mail Address/Phone Number	Do You Wish To Testify?
Bonnie Cunningham		CCAN	cunningham.bonnie@gmail.com	No
Melissa Holler		United Workers	melholler@gmail.com	no
Greg Sawtell		Curtis Bay	greggalen@gmail.com	Yes
Edith Gerald		Curtis Bay		No
Leah Kelly		EIP	lkelly@environmentalintegrity.org	Yes
Tom Pelton		EIP	tpelton@environmentalintegrity.org	No

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Name (please print)	Signature	Organization or Affiliation	E-mail Address/Phone Number	Do You Wish To Testify?
Jennifer Kunze	Jennifer Kunze	Clean Water Action	jkunze@cleanwater.org 240-397-4126	yes
Taylor Smith-Harris		CCAN Action Fund	taylor@chesapeakeclimate.org	YES
Michael Coleman	M. Coleman	United Workers	ourgcs@gmail	yes
Iletha Joynes	Iletha Joynes	UW	ilethaj@gmail.com	
Gwen DuBois MD		Chesapeake Physicians for Social Responsibility	gdubois@jhsph.edu	Yes

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Name (please print)	Signature	Organization or Affiliation	E-mail Address/Phone Number	Do You Wish To Testify?
Austin Pritchard		WTI	apritcha@wtienergy.com	N
Brad Keller		WTI	bkeller@wtienergy.com	N
Dave Cooley		STC	dncooley33@gmail.com	N
Richard Tabuteau		Schnuta, Metz & Wise	rtabuteau@smwpa.com	No
Patrick Moulds		NWE	patrick.moulds@gmail	N
Kevin Kriescher		Sierra club	Kjktriescher@hotmail.com	Y

MARYLAND DEPARTMENT OF THE ENVIRONMENT
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Name (please print)	Signature	Organization or Affiliation	E-mail Address/Phone Number	Do You Wish To Testify?
Luke Mayhew		Clean Water Action	lmayhew3@gmail.com	
Brandon Block		Baltimore Fishbowl	brandon.block1@gmail.com	
Randolph G. Ford Sr.		united workers	randolphfordsr@gmail.com	Yes

MARYLAND DEPARTMENT OF THE ENVIRONMENT
AIR AND RADIATION ADMINISTRATION
PUBLIC HEARING CONCERNING REGULATION/AMENDMENT COMAR 26.11.08 and associated
September 21, 2018

This Notice is provided pursuant to § 4-501 of the General Provisions Article of the Maryland Code. The personal information requested on this sign-in sheet is intended to be used to contact you concerning further information about the subject of this public hearing or meeting. Failure to provide the information requested may result in you not receiving further information. You have the right to inspect, amend, or correct this sign-in sheet. The Maryland Department of the Environment ("MDE") is a public agency and subject to the Maryland Public Information Act. This form may be made available on the Internet via MDE's website and subject to inspection or copying, in whole or in part, by the public and other governmental agencies, if not protected by federal or State law.

Name (please print)	Signature	Organization or Affiliation	E-mail Address/Phone Number	Do You Wish To Testify?
Charles Graham III		United Workers		NO
Sabrina Thomas		United Workers	sthoma43@students.towson.edu	Yes
Sharon Darlin		Indivisible CCAN	sldarlin4@gmail.com	NO
Nancy Newman		United Workers BRIDGE Maryland	naelnewman@aol.com	No
LaDeisha Greene		United Workers	4437420638	yes

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Name (please print)	Signature	Organization or Affiliation	E-mail Address/Phone Number	Do You Wish To Testify?
Dante Swinton		Energy Justice Network	dante@energyjustice.net 864-371-2574	Yes
Carmera Thomas		Chesapeake Bay Foundation	carmerathomas@cbf.org	yes
Alison Prost		Chesapeake Bay Found.	aprost e cbf.org	yes
Paul Smail		Chesapeake Bay Foundation	psmail@cbf.org	No
Heather Moyer		IPL DMV	hmoyer@gmail.com	Yes
Andrew Hinz		Baltimore City Resident	ahinz61@outlook.com	y

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Name (please print)	Signature	Organization or Affiliation	E-mail Address/Phone Number	Do You Wish To Testify?
Hattie McCullers	Hattie McCullers			NO
Al Phillips		EIP	aphillips@environmentalintegrity.org	No
Ben Kunstman		EIP	bkunstman@environmentalintegrity.org	Yes
Sheelah Bearfoot	Sheelah M. Bearfoot	JHSPH	sbearfoot@gmail.com 209-221-2759.	maybe
Liesl Tolley Brandl		Public Citizen/etc	LieslNTolley@icloud.com	maybe
Bryon Lobar		Local Citizen Property Owner	2blobars@gmail.com	Yes

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Name (please print)	**Signature**	**Organization or Affiliation**	**E-mail Address/Phone Number**	**Do You Wish To Testify?**
Vivek Mara	Vivek	Namati	~~vivek.mara@gmail.com~~ vivekmara@namati.org	N

MARYLAND DEPARTMENT OF THE ENVIRONMENT

AIR AND RADIATION ADMINISTRATION

PUBLIC HEARING

PROPOSED ACTIONS REGARDING AMENDING REGULATION .01 UNDER COMAR 26.11.01, GENERAL ADMINISTRATIVE PROVISIONS, AMENDING REGULATIONS .01, .02, .04, .05, .07, and .08-2, REPEALING REGULATION .08-1, ADOPTING NEW REGULATION .10 UNDER COMAR 26.11.08, CONTROL OF INCINERATORS, AMENDING REGULATION .08 UNDER COMAR 26.11.09, CONTROL OF FUEL-BURNING EQUIPMENT, STATIONARY INTERNAL COMBUSTION ENGINES AND CERTAIN FUEL-BURNING INSTALLATIONS

The hearing in the above matter commenced on Thursday, September 21, 2018, at the MDE Headquarters, Montgomery Park, 1800 Washington Boulevard, Baltimore, Maryland.

BEFORE: Randy Mosier, Hearing Officer

Reported by: Jennifer Razzino, CERT

A P P E A R A N C E S

ON BEHALF OF THE MARYLAND DEPARTMENT OF THE ENVIRONMENT:

RANDY MOSIER
Division Chief
Regulation Development Division
Air and Radiation Administration
Maryland Department of the Environment
1800 Washington Boulevard, Suite 730
Baltimore, Maryland 21230

CAROLYN JONES
Senior Regulatory and Compliance Engineer
Regulation Development Division
Air and Radiation Administration
Maryland Department of the Environment
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Baltimore, Maryland 21230

A T T E N D E E S

Mr. Brian Hug, Maryland Dept. of the Environment
Ms. Deborah Kleinmann, Sierra Club
Mr. Chris Skaggs, NE Maryland Waste Disposal Authority
Mr. Ted Michaels, Energy Recovery Council
Ms. Nicole Fabricant, Towson University
Mr. Terrel Askew, United Workers
Mr. Troiana Riviera, Clean Water Action
Mr. Greg Sawtell, Citizen
Ms. Leah Kelly, Environmental Integrity Project
Ms. Jennifer Kunze, Clean Water Action
Ms. Taylor Smith-Hams, CCAN Action Fund
Mr. Michael Coleman, Citizen
Dr. Gwen Dubois, Chesapeake Physicians for Social Responsibility
Mr. Kevin Kriescher, Citizen
Mr. Randolph Ford, United Workers
Ms. Sabrina Thomas, Citizen
Ms. Laqeisha Greene, Citizen

A T T E N D E E S

Mr. Dante Swinton, Energy Justice Network
Ms. Carmera Thomas, Chesapeake Bay Foundation
Ms. Alison Prost, Chesapeake Bay Foundation
Ms. Heather Moyer, Interfaith Power and Light
Mr. Andrew Hinz, Citizen
Mr. Ben Kunstman, Environmental Integrity Project
Mr. Bryan Lobar, Citizen
Ms. Sheelah Bearfoot, Citizen
Ms. Liesl Brand, Citizen
Ms. Iletha Joynes, Citizen
Mr. Paul Smail, Chesapeake Bay Foundation
Mr. Vivek Mann, Citizen
Mr. Austin Pritchard, WTI
Mr. Brad Keller, WTI
Mr. Dave Curley, Citizen
Mr. Patrick Moulds, Citizen
Mr. Richard Tabuteau, Esq., Schwartz, Metz & Wise
Mr. Luke Mayhew, Clean Water Action
Mr. Brandon Block, Baltimore Fishbowl
Mr. Charles Graham, United Workers

A T T E N D E E S

Ms. Sharon Davlin, Indivisible CCAN

Ms. Nancy Newman, United Workers

Ms. Hattie McCullers, Citizen

Mr. Ari Phillips, Environmental Integrity

Ms. Rodette Jones, United Workers

Ms. Jessica Forsythe, United Workers

Ms. Alayna Chuney, Namati

Mr. Tim Porter, WTI

Ms. Arlene Ogurick, CCAN

Ms. Bonnie Cunningham, CCAN

Ms. Melissa Holle, United Workers

Ms. Edith Gerard, Citizen

Mr. Tom Pelton, Citizen

I N D E X

P R O C E E D I N G S

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MR. MOSIER: Good afternoon. On behalf of the Maryland Department of the Environment, I would like to welcome you to this public hearing.

My name is Randy Mosier and I am the Division Chief with the Regulation Development Division for the Air and Radiation Administration. I will serve as hearing officer for today's hearing.

I would like to ask all of you in attendance today to please sign in, if you haven't already done so. This will help us to keep an accurate record of the people participating in this hearing. Also, copies of our regulation proposal, support documents, and the Department's statement are available on the table for your information.

This hearing concerns Air Quality Regulations found in the Code of Maryland Regulations, Title 26, Subtitle 11, Air Quality.

The Secretary of the Department proposes to:

(1) Amend Regulation .01 under COMAR 26.11.01, General Administrative Provisions, amend

Regulations .01, .02, .04, .05, .07, and .08-2, repeal Regulation .08-1, and adopt new Regulation .10 under COMAR 26.11.08 Control of Incinerators; and amend Regulation .08 under COMAR 26.11.09 Control of Fuel-Burning Equipment, Stationary Internal Combustion Engines, and Certain Fuel-Burning Installations.

The purpose of this hearing is to give the public an opportunity to comment on this action. The Opportunity for Public Comment for this proposed action appeared in the General Notices of the Maryland Register, Volume 45, Issue 17, Pages 809 to 814, on August 17, 2018.

The hearing will proceed in the following order. First, Ms. Carolyn Jones will make a statement on behalf of the Air Administration. After Ms. Jones is finished, I will call on any elected official or government official who wants to make a statement. Then I will call upon anyone else who indicated on the sign-in sheet that he or she would like to make a statement.

We ask that cell phones be turned off and placed away from the microphone to minimize

interference with recording.

When giving your statement, please identify yourself and your affiliation, and give your statement loudly and clearly. If you have a written copy of your statement today, we would be happy to collect that copy.

Are there any questions?

(No response.)

MR. MOSIER: I will now call on Ms. Jones.

Statement of the Air and Radiation Administration

Department of the Environment

for the Public Hearing Relating to Proposed

Amendments concerning the following proposed actions:

(1) amend Regulation .01 under COMAR 26.11.01 - General Administrative Provisions, (2) amend Regulations .01, .02, .04, .05, .07, and .08-2, repeal Regulation .08-1, and adopt a new Regulation .10 under COMAR 26.11.08 Control of Incinerators; and (3) Amend Regulation .08 under COMAR 26.11.09 Control of Fuel-Burning Equipment, Stationary Internal Combustion Engines, and Certain Fuel-Burning Installations

MS. JONES: Hello, my name is Carolyn Jones. I am a Senior Regulatory and Compliance Engineer with the Regulation Development Division of the Air and Radiation Administration, Maryland Department of the Environment.

This public hearing is being held pursuant to the requirements of Section 110(a) of the Clean Air Act, and 40 CFR Section 51.102. It is also being held in conformance with the State Administrative Procedure Act, codified under the Annotated Code of Maryland, State Government Article, Section 10-101 et. seq., and the Annotated Code of Maryland, Environment Article, Section 2-301 et. seq.

Notice of this hearing appeared in the Maryland Register on August 17, 2018. Copies of the proposed action and supporting documents are submitted at this time into the hearing record.

Copies were also made available for public inspection at the Maryland Department of the Environment Air and Radiation Administration offices in Baltimore and at the Air and Radiation Administration webpage titled "Air & Radiation Regulations Public

Hearings, Meetings and Request for Comments", from August 16 to September 21, 2018.

The purpose of today's hearing is to give the public an opportunity to comment on the proposed amendments to COMAR 26.11.08, Control of Incinerators and accompanying regulation amendments.

Summary

The purpose of this action is to repeal existing nitrogen oxide (NOx) reasonable available control technology (RACT) requirements under COMAR 26.11.09.08H and establish new NOx RACT requirements and analysis of possible additional NOx emission control requirements under COMAR 26.11.08.10 for large municipal waste combustors (MWCs).

Additionally, this action amends the opacity requirements under 26.11.01, adds definitions, repeals 26.11.08.08-1, and updates references to 26.11.08.08-2, which is the current emission standards and requirements for hospital, medical, and infectious waste incinerators (HMIWIs).

The NOx RACT requirements pertaining to Large MWCs will be submitted to the U.S. Environmental

Protection Agency (EPA) for approval as part of Maryland's SIP. The amendments pertaining to Small MWCs and HMIWIs will be submitted to the EPA for approval as part of Maryland's 111(d) and 129 plans.

Regulation Amendments

The proposed amendments establish new NOx RACT standards and requirements for Large MWCs with a capacity greater than 250 tons per day. New COMAR 26.11.08.10 requires that Maryland's two Large MWCs shall meet new, individual NOx 24-hour block average emission rates by May 1, 2019. The Montgomery County Resource Recovery Facility shall meet a NOx 24-hour block average emission rate of 140 ppmv. The Wheelabrator Baltimore, Inc. facility shall meet a NOx 24-hour block average emission rate of 150 ppmv.

To further ensure consistent long-term operation of NOx control technologies, the Large MWCs must also meet new, individual NOx 30-day rolling average emission rates by May 1, 2020. The Montgomery County Resource Recovery Facility shall meet a NOx 30-day rolling average emission rate of 105 ppmv. And Wheelabrator Inc. facility shall meet a NOx 30-day

rolling average emission rate of 145 ppmv.

Large MWCs are required to meet the NOx 24-hour block average and the NOx 30-day rolling average emission rates, except during periods of startup and shutdown. Concentration-based emission limits are not practical during startup and shutdown because it is technically infeasible for MWCs to comply with the emission rates due to the "7 percent oxygen correction factor" that is required to be applied to the NOx 24-hour block rates. During periods of startup and shutdown additional ambient air is introduced into the furnace. Applying the correction factor of 7 percent oxygen during these periods grossly misrepresents the actual NOx emissions produced from startup and shutdown operations. Therefore, an equivalent mass based emission limit is substituted.

During periods of startup and shutdown the Montgomery County Resource Recovery Facility shall meet a facility wide NOx emission limit of 202 pounds per hour timed average mass loading over a 24-hour period. The Wheelabrator Baltimore, Inc. facility shall meet

a facility wide NOx emission limit of 252 lbs/hr timed average mass loading over a 24-hour period. The duration of startup and shutdown procedures for the Large MWCs are not to exceed three hours per occurrence, and the NOx 24-hour mass emission limits apply during these times.

The mass emission limits during periods of startup and shutdown incorporate the 24-hour block average NOx RACT rates. These rates are part of the calculation used to derive the mass NOx emission limits applicable to each Large MWC providing equivalent stringency to those concentration limits, which apply at all other times. Mass based emission calculations are derived utilizing 40 CFR Section 60.58b(h)(2) of subpart Eb (Concentration correction to 7 percent oxygen), or 40 CFR 60.45 (Conversion procedures to convert CEM data into applicable standards).

EPA Method 19 may also be utilized to determine NOx emission rates based upon oxygen concentrations. Facility average flue gas flow rates are also utilized in the calculation. The calculation methodology for the mass emission limits is based upon

the Prevention of Significant Deterioration (PSD) Approval for each affected facility.

In addition to the mass-based emission limit, the NOx 24-hour block average emission rate will apply for the 24-hour period after startup and before shutdown, as applicable.

The new NOx RACT further specifies that a Large MWC shall minimize NOx emissions at all times the unit is in operation during periods of startup and shutdown, by operating and optimizing the unit and all installed pollution control technology and combustion controls consistent with the technological limitations, manufacturer's specifications, good engineering and maintenance practices, and good air pollution control practices for minimizing emissions such as those defined in 40 CFR Section 60.11(d).

Large MWCs shall continuously monitor NOx emissions with a continuous emission monitoring system in accordance with COMAR 26.11.01.11. Large MWCs are also required to submit quarterly reports to the Department containing data, information, and calculations which demonstrate compliance with the NOx

RACT emission rates and the NOx mass loading emission limits. The reports shall include flagging of periods of startup and shutdown and exceedance of emission rates, as well as documented actions taken during periods of startup and shutdown in signed, contemporaneous operating logs.

Additional NOx requirements

The proposed NOx RACT requirements, when effective, will result in immediate reductions in NOx emissions from the Wheelabrator Baltimore Inc. facility, Large MWC. This action also contains possible additional NOx emission control requirements that may be needed by Maryland to attain and maintain compliance with the 2015 ozone NAAQS.

Not later than January 1, 2020, the owner or operator of Wheelabrator Baltimore Inc. shall submit to the Department a feasibility analysis regarding additional control of NOx emissions from the Wheelabrator Baltimore Inc. facility. This analysis shall be prepared by an independent third party and must include: a written narrative and schematics detailing the existing facility operations, boiler

design, NOx control technologies and relevant emission performance; a written narrative and schematics detailing various state of the art NOx control technologies for achieving the lowest possible NOx emissions from existing MWCs in consideration of the overall facility design at Wheelabrator Baltimore Inc.; an analysis of whether each identified state of the art control technology could technically be implemented at the Wheelabrator Baltimore Inc. facility; a cost-benefit analysis of capital and operating costs, NOx emission benefits, and air quality impacts resulting from each identified state of the art control technology; and a schedule for installation and implementation of each identified NOx emission control technology.

The feasibility analysis for Wheelabrator Baltimore Inc. should review and examine NOx emission control technologies capable of achieving NOx emission levels comparable to those for a new source (e.g. Selective catalytic reduction, SCR).

The Department conducted research on existing MWCs around the country and was not able to find

examples of existing MWCs that were retrofitted with an SCR. Adding SCR NOx emission control technologies, or other comparable NOx emission reduction strategies, would likely not be considered RACT because of the complex design requirements and cost issues.

SCR NOx emission control strategies are standard equipment on new Large MWCs. The intent of the feasibility analysis is to evaluate what lower NOx RACT emission rates could be achieved at Wheelabrator Baltimore Inc. without a rebuild of the entire facility.

Based on the results of the feasibility analysis, Wheelabrator Baltimore Inc. shall submit to the Department a NOx 24-hour block average emission rate, NOx 30-day rolling average emission rate, and NOx mass loading emission limitation for periods of startup, shutdown, and malfunction by January 1, 2020. Wheelabrator Baltimore, Inc. shall provide the Department with no less than two weeks notice and the opportunity to observe any optimization procedure, including installation or operation of NOx emission control technology, for the express purpose of

developing the feasibility analysis.

Projected Emissions Reductions

MDE projects the implementation of the new NOx RACT requirements for Large MWCs will result in approximately 200 tons of NOx emissions reduced on an annual basis. There are no expected NOx emission reductions for Small MWCs.

As of October 6, 2014, Maryland sources have already applied control technologies to the incineration process and to post incineration emissions to meet the HMIWI NOx emission standards and other requirements as specified in the 111(d) plan of COMAR 26.11.08.08-2.

Economic Impact

Large MWCs are expected to incur a small increase in operating costs as a result of optimization of existing control technology. The operating cost increase is projected to be in the range of $1,123 to $1,269 per ton of NOx reduced based on the increase in urea consumption. Additional capital costs have been incurred at the Wheelabrator Baltimore, Inc. facility in an effort to meet the proposed NOx RACT emission

rates. Wheelabrator Baltimore, Inc. has conducted several analyses of existing operating combustion and control systems, and has modified urea injection systems to be optimized for multiple parameters. The facility has also modified interface combustion controls with SNCR operation and control through automation of the urea feed system. Specific cost information has not been made available to the Department.

There are no expected economic impacts for Small MWCs and HMIWIs. There will be no impact on the Department or other state agencies or local governments as a result of this action.

Maryland's State Implementation Plan (SIP)

These amendments will be submitted to the U.S. Environmental Protection Agency for approval as part of Maryland's State Implementation Plan.

Consideration of Comments

The Department will now consider all comments before making a decision to adopt the new regulation and amendments.

MR. MOSIER: Thank you, Carolyn. Again, I'm just opening up if there are any elected officials or government officials in attendance that would like to speak.

(No response.)

MR. MOSIER: Okay. Brian Hug will now read from the list of people who have signed up indicating that they wish to speak.

MR. HUG: First up, I have Deborah Kleinmann.

MS. KLEINMANN: Good morning. My name is Deborah Kleinmann, or Spice, and I have my Sierra Club hat on. I'm a member of the Sierra Club of Maryland, but I'm going to take this hat off and talk from an educator's perspective.

I am a preschool teacher. I teach music and arts integration education throughout the Maryland, Delaware, Virginia and D.C. area, and we teach preschool curriculum math, science, and literacy through music, movement, and drama. It's a great job if anyone wants to learn about it.

I work all over this area teaching preschool curriculum and I see kids from all walks of life. I

see highly privileged children and poor children, many, many different colors, lots of different languages, different cultures. The schools are filled with people from all over the world, children. I go to Title I schools, charter schools, and some private schools.

When I have worked in Baltimore City, especially in South Baltimore, I have noticed that more of the children are sick and miss a lot of school. There's much coughing. The children look sickly. Their colors don't look good in their faces.

I've inquired about this when I've been working and many of the teachers repeatedly have told me that asthma is off the charts in their schools along with other illnesses that come with being in a low income area of Baltimore. These low income schools and communities are the canaries in the coal mine, so to speak. Again, the asthma rates are off the charts. Along with the coal fired power plants, the Wheelabrator facility contributes to this dirty, toxic air that is creating this major, major crisis in Baltimore City.

This doesn't happen in Roland Park or Mount

Washington and they would not consider putting an incinerator in those neighborhoods. But these neighborhoods are poor. They are mostly people of color. And it's got to stop. This is environmental racism.

The trash that's being burnt in that incinerator comes from Baltimore County, and many Baltimore County people have no clue that their trash is being burned and it's causing sickness in Baltimore City Public Schools.

The hospitalizations in these zip codes -- 21223, 21225, 21226 -- are more than two times the state average for asthma and three times the national average. In my eyes, this has got to stop and I don't think -- thank you.

MR. MOSIER: Thank you very much.

MR. HUG: Chris Skaggs.

MR. SKAGGS: Good morning. My name is Chris Skaggs. I'm the Executive Director of the Northeast Maryland Waste Disposal Authority just here in support of the regulations as drafted, as written, especially for the Montgomery County resource recovery facility.

I wanted to thank MDE for the two-plus-year process of working with stakeholders and working with the facilities to try to come up with a regulation that will work. Thank you.

MR. MOSIER: Thank you very much, Chris.

MR. HUG: Ted Michaels.

MS. JONES: This is Carolyn Jones again. I just wanted to ask if people could say your name and spell it that would be very helpful as you start. Thank you.

MR. MICHAELS: My name is Ted Michaels, T-E-D, M-I-C-H-A-E-L-S. I am president of the Energy Recovery Council which is the National Trade Association that represents companies in communities engaged in the waste-to-energy sector.

I'm here today because ERC supports the adoption of these new NOx RACT requirements that will reduce emissions for Maryland's two large waste-to-energy facilities.

Both of these facilities are clean, renewable, efficient, and economical forms of energy production which has long proven to be an effective

means of managing post-recycled waste in the state and across the country, in fact, across the world.

These facilities are committed to optimizing their operations and to meet federal and state environmental standards and regulations, which are at the federal level entitled Maximum Achievable Control Technology standards. So they are very stringent standards.

Of course, states can go beyond those limits, and have in this action, but the facilities are capable of meeting these and making these regulations reasonable and allowing the communities to benefit from the many other attributes that these facilities provide, which includes producing electricity where it is going to be consumed.

There is oftentimes a difficulty in transmitting power across long distances into congested areas such as Maryland. So having a reliable baseload renewable power source in the state, in the city, is a benefit that shouldn't be overlooked.

For post-recycled waste, this is EPA's preferred method of disposal over landfilling.

Thirty-one states, the District of Columbia, two territories have identified waste-to-energy as renewable in-state statutes which include renewable portfolio standards. And it's also been recognized around the world as a greenhouse gas reducer.

So many jurisdictions, both governmental and non-governmental organizations, have recognized waste-to-energy for its role in reducing emissions by offsetting power that is generated by fossil fuels, and reducing the landfilling which generates methane, which is a much more greenhouse gas.

The Intergovernmental Panel on Climate Change, the World Economic Forum, the European Union, the U.S. Conference of Mayors, the Kyoto Protocol, the Center for American Progress have all recognized waste-to-energy as a greenhouse-gas-reducing technology on a life-cycle basis. So we encourage you to do that.

So for the reasons provided here, the ERC supports the adoption of these reasonable emission standards to protect human health and environment. Thank you for your time.

MR. MOSIER: Thank you very much, Mr.

Michaels.

MR. HUG: Nicole Fabricant.

MS. FABRICANT: Nicole, N-I-C-O-L-E, Fabricant, F-A-B-R-I-C-A-N-T.

So my name is Nicole Fabricant. I'm a Professor of Cultural Anthropology at Towson University. I teach courses on environmental justice, on resource crisis, renewable energy, climate change, et cetera.

For about eight years now we have been systematically working down in South Baltimore as researchers aligned with youth from the communities that are directly affected by BRESCO.

In Curtis Bay we have about 25 students who are out. They are collecting data on their own community. They are working with public health folks from Columbia, from Johns Hopkins, and from Morgan State, along with cultural anthropologists to understand exactly what's in the air quality and what's affecting their ability to breathe. These students are incredible researchers, methodologically trained in both social scientific research and also from a

physical science perspective.

We've seen over the past eight years some of the data that the students have produced is directly related to the kinds of health problems. Their asthma, off the charts in areas like Curtis Bay. It has one of the highest zip codes of respiratory, adverse respiratory health in the entire nation. This could be directly attributed to not only BRESCO but many of the other polluting facilities.

So here I wanted to encourage us to listen to some of these youth, to look directly at their data, to think about the ways in which they're envisioning a completely different Baltimore.

I would encourage us to use our imaginations, not to rely upon the same waste-to-energy facilities, nor incineration which is a completely outdated tactic and technique.

We well know that the waste industry is a profitable industry. No one has mentioned the fact that in accruing capital they are also cutting corners on regulations and on the ability to imagine a completely different Baltimore.

I would listen. I would look at some of the data. And I would begin to create forums where alongside youth from some of these communities we can think about zero waste initiatives. We can think about alternative approaches to dealing with our waste.

A young man mentioned Marvin, who leads the composting collective in Curtis Bay, mentioned that most of our food waste is going towards incineration. We can begin thinking creatively. And these are solutions and ideas that are coming directly from South Baltimore.

So as an anthropologist aligned with public health, I think that we all need to sort of be in these conversations together and collectively come up with zero waste alternatives. Thank you.

MR. MOSIER: Thank you.

MR. HUG: Terrel Askew.

MS. ASKEW: Hi, my name is Terrel Askew, T-E-R-R-E-L, Askew, A-S-K-E-W, and I'm a member of United Workers.

While I applaud the desire to move towards a cleaner environment, I am appalled by this regulation.

As a child I've had many hard conversations with my mother, a single parent. One I never had was that I could walk out my door and be poisoned. I don't think that's acceptable to any parent.

I think that there are a lot of things that are out of our control -- natural disasters, for instance -- but this is not one of those things. This is completely within our power to actually change and address, and it's shameful that we consider this actually addressing that. When someone has a fire we don't say they only lost 45 percent of their home, so that's good. That's what this says, and as a Maryland resident, this was done in my name and I do not appreciate that.

Honestly, I feel like as a reflection on all Marylanders to say that we don't understand what it means to protect our children and our environment, I think that's unacceptable. That's all I have to say. Thank you.

MR. MOSIER: Thank you very much.

MR. HUG: Troiana Riviera.

MR. RIVIERA: I'm Troiana Riviera. My last

name R-I-V-I-E-R-A. I'm the current Director for Clean Water Action. Can you hear me?

AUDIENCE MEMBER: No.

MR. RIVIERA: I'm the Canvass Director for Clean Water Action. We've collected a lot of petitions here in the Baltimore area on the state of the incinerator and how much nitrogen oxide it is producing.

I live right there in Montclair, so I'm really within a one-mile radius of the incinerator. The air quality that is out there it's producing is alarming. Rates of like the nitrogen oxide, the air pollution, a lot of people definitely are concerned about what pollutants it's emitting near and in its radius.

We should think about other alternatives; zero waste, greener energy. We should definitely think about ways of how to make the city be thinking about investing into more greener jobs, sustainable infrastructure, solar wind. There are ways we definitely can do that with partnerships with other companies and industries that want to invest into our

city. We should definitely move forward with better technology.

I'm out there talking to people. I went just recently into Annapolis, which is last night, and had people sign petitions for this that really want to see about effective changes for our region. Anne Arundel County, Baltimore County, and Baltimore City are adjacent, so there are pollutions that are affected from this incinerator to Anne Arundel County as well.

So I think that we should move forward looking at ways about adopting better practices and bringing the conversation about better energy sources for our city. It would be a benefit for not only the city, the state itself, and what we can do forward to set a better model for the generations to come and move our city forward.

MR. MOSIER: Thank you so much for your comments.

MR. HUG: Greg Sawtell.

MR. SAWTELL: Greg Sawtell, G-R-E-G, S-A-W-T-E-L-L. I own a home in Curtis Bay and work in the neighborhood, have been doing so for the past six

years. I've participated in this regulatory process, which has been going on for several years as well. And to me a process like this comes down to good faith and trust in a process.

I put a lot of trust in residents who've stepped up to engage in a process like this, coming to 9:00 a.m. meetings. City Council officials in Baltimore City who were just with us over in Carroll Park sending a clear message about the future of our city and real ways to support clean air and zero waste. I put good faith in public health professionals and the Maryland Department of the Environment for laying out a framework to work through a complex issue.

At the same time, I've heard representatives from Wheelabrator say again and again and again that they have done everything they can to clean up their facility and this is what we're left with; a facility that will remain the worse source of NOx emissions in Baltimore, a facility that will continue to burn materials, the vast majority of which are recyclable and compostable.

Coming back to good faith. Something

happened to me recently in my community at my public library. I was approached by a person hired by Wheelabrator not to increase emission standards, to optimize pollution controls, but to engage in public relations.

What was extended to myself and a fellow member of my community was an offer. In exchange for stopping activity to advance zero waste and to continue the passion of our community, which is to figure out how to clean our air and remove composting and recycling from the waste stream, we were asked to stop doing that in exchange for what? For money and for joining Wheelabrator in pursuit of what?

I'm not sure but it isn't zero waste. It isn't securing the future of clean air. And it does everything to eliminate the fundamental message and the fundamental element that we need to move forward as a city and a state, which is good faith and belief that we come to this table not in the interest to deceive, to manipulate, to distort information, to present one message in public but to do another thing in private, to do cynical efforts to divide community members who

have been working tirelessly for years.

I see some shrugs. I'm not sure if you want to offer a direct response right now as to what your expression is about. Would you?

AUDIENCE MEMBER: No.

MR. SAWTELL: Okay. Thank you. Well, I would like an answer though and I think residents of this city would like an answer as to why a facility that's the worst polluter in Baltimore is spending resources, time and energy hiring a public relations firm to come and target South Baltimore neighborhoods asking them to stop exercising their civic obligation, their rights as residents, and to suppress and silence themselves about an issue of concern about the air that we all breathe and the future of our communities. That demands an answers. Thank you.

MR. HUG: Leah Kelly.

MS. KELLY: Good morning. My name is Leah Kelly and I'm an attorney. I'm sorry, that's L-E-A-H, K-E-L-L-Y. I'm an attorney with the Environmental Integrity Project. We've been participating for almost two years as well in the public stakeholder process as

MDE sets this regulation.

I want to start off by saying that we appreciate the time and effort that MDE has put into making this rule. We appreciate the fact that the agency has held a relatively transparent stakeholder process.

We are also particularly appreciative of the fact that starting this past February MDE has been posting hourly continuous emissions monitoring data and operational data from the BRESCO incinerator on its website. As far as we know no other state agency makes this kind of data available at the one-hour level for incinerators. Despite our appreciation of some of MDE's efforts we still have very serious concerns about the proposed rule as it applies to the BRESCO facility.

The initial set of pollution limits that take effect in 2019 and 2020 require about 200 tons of NOx reductions from the facility, which is a good start but it is not enough.

This facility is a huge source of NOx pollution and it's an even bigger polluter when one considers the small amount of useful output in energy

and steam generated that it produces. Per unit of energy generated, it is a bigger NOx polluter than any of the state's coal plants and a much larger polluter than Maryland's other incinerator in Montgomery County.

To make matters worse, the BRESCO incinerator receives state subsidies as a source of green and renewable energy which total $10 million over six years according to the Baltimore Sun. We submitted written comments this morning to MDE in partnership with the Chesapeake Bay Foundation that set out in detail our concerns with the rule.

In summary, I will just say that it is essential that MDE not accept a technical analysis from Wheelabrator at the end of 2019 that fails to explain whether the most effective NOx pollution controls that exist for any kind of facility, whether it's old or new, can be installed on BRESCO.

We expect MDE to then follow through on its promise to commence another rulemaking to set additional pollution limits. Those limits must be much stronger than the one set forth in this proposed rule.

It is indisputable that MDE has the legal

authority to set pollution limits for BRESCO that are far lower and more protective of human health than those set forth in this proposed regulation. We are looking forward to participating in the process as MDE establishes those limits.

MR. MOSIER: Thank you, Leah.

MR. HUG: Jennifer Kunze.

MS. KUNZE: Hello, my name is Jennifer Kunze. That's J-E-N-N-I-F-E-R, K-U-N-Z-E. I'm the Maryland program organizer for Clean Water Action, a national environmental advocacy organization with over 8,000 members within Baltimore City. I'm also a Baltimore City resident who lives in the Union Square neighborhood less than one mile from the BRESCO incinerator itself.

Over the past decade, Clean Water Action has worked to support local organizations fighting trash incinerators across the state, from the Wheelabrator incinerator that would have been built in my hometown in Frederick City when I was in high school, to the Energy Answers incinerator that would have been built just a few miles from where we are right now.

Like our colleagues who have spoken already, we have been engaging in the RACT process in good faith as it moves forward because we need to use all the tools in the toolbox that we possibly can in order to protect public health.

We are happy that MDE is moving forward with a process for creating much stricter limits over the next two years because the RACT process, while it's a good tool in the toolbox, it is not a sufficient tool to truly protect public health.

We encourage MDE and the whole city of Baltimore and everyone involved in sending trash to and receiving energy and steam from the BRESCO trash incinerator to think bigger about what alternatives will be better for public health, for job creation and economic development in Baltimore City and across the region.

And I come with 154 petitions signed by our members all across the area, including Baltimore City, Baltimore County, and Anne Arundel County that is in the NOx non-attainment zone surrounding the city to which the nitrogen oxide emissions from the BRESCO

trash incinerator contribute.

So on behalf of these members of ours and all of our members and all of the people across the region, we encourage MDE to push forward with far stricter emissions limits and for other entities involved to think bigger and move toward a future that does not involve trash incineration and is better for the whole region. Thank you.

MR. MOSIER: Thank you, Jennifer.

MR. HUG: Taylor Smith-Hams.

MS. SMITH-HAMS: Good morning. My name is Taylor Smith-Hams, that's T-A-Y-L-O-R, S-M-I-T-H, hyphen, H-A-M-S. I'm a Baltimore resident and the Healthy Communities campaign organizer for the CCAN Action Fund. We are a regional non-profit focused on advocating for policies that will shift our region away from fossil fuels and toward clean energy solutions.

Thank you for this opportunity to provide testimony on this important rulemaking. On behalf of our 20,800 members in Maryland, I urge you to move forward with much stricter emission reductions in the future. As it's been said by many people here today,

while this rule is a first step, it's not nearly enough.

The BRESCO incinerator is an aging, outdated facility that burns trash from Baltimore City and Baltimore County. And even though the industry touts the facility as green energy, BRESCO emits more NOx per unit of energy than any power plant in Maryland.

NOx is one of the incinerators more harmful pollutants as it can combine with other pollutants in the air and contribute to asthma, cardiovascular disease, and other health problems. Currently BRESCO emits about twice as much NOx as Maryland's other trash burning incinerator in Montgomery County.

As a Baltimore resident who enjoys running, I have personally experienced the impacts of our local air pollution. A few months ago I left my house for an early morning run and a few miles in I started to experience shortness of breath and chest pain. I don't have asthma and I've never had this type of experience before when running.

As I stopped to try and recover I became increasingly alarmed by my inability to catch my

breath. I ended up walking home, all the while wondering if I should knock on a stranger's door to seek assistance. When I finally returned home I went online and read that there was a Code Red alert in effect that day.

This experience has made me more reluctant to exercise and even go outside on Code Red or excessively hot days. Reducing local air pollution and NOx in particular is critical for public health in Baltimore. Although this is my worst personal experience with the effects of air pollution, I hear stories from residents every day of how air pollution, asthma, and other respiratory problems impact people's day-to-day lives from lost school and workdays to frightening hospitalizations.

Now, because my organization focuses on climate change I also want to speak about the climate impacts of trash incinerators like BRESCO. These facilities, unlike what has been said here today, are huge emitters of greenhouse gases.

In addition to its high NOx emissions, in 2015 the BRESCO incinerator emitted roughly double the

amount of greenhouse gases per megawatt hour of energy than each of the six largest coal plants in Maryland.

Currently, the BRESCO incinerator receives undeserved subsidies under our state's renewable portfolio standard amounting to $10 million over the past six years according to the Baltimore Sun. That means that incineration, which emits high levels of health hazardous air pollution and is dependent upon a constant unsustainable trash stream, gets the same subsidies as wind and solar in our state.

Instead of subsidizing incineration, the state should move towards zero waste policies and practices for a healthier population and environment.

So, again, while the emissions reductions you are proposing are a step forward they are not enough to ensure a healthier future for our region, and we expect MDE to require that Wheelabrator conduct a rigorous and serious study that evaluates all options for pollution reduction and to enact much stricter regulations in the future. Thank you.

MR. MOSIER: Thank you so much.

MR. HUG: Michael Coleman.

MR. COLEMAN: Good morning. It's M-I-C-H-A-E-L, C-O-L-E-M-A-N. Good morning, everyone. Again, my name is Michael Coleman. I wasn't prepared to come and speak to you all this morning. However, as a lifelong resident of Baltimore City I feel like it's my obligation to speak to the issues of this morning.

As you guys can probably tell I am still recovering from a cold. I find it really ironic that when I'm home -- I was lucky enough to be able to move out of Baltimore City or the inner city to Mount Washington.

Now, I took a couple days off when I first got the cold and I thought I was fully recovered. However, coming back into the city and working where I primarily work I feel ill again and I wonder how much of that is attributed to the air that I'm breathing when I work in Baltimore City. This is something I see a lot as an organizer in dealing with people on a day-to-day basis in the inner city.

I work in the zip codes that was mentioned earlier this morning, primarily in 17, and I see this all the time. Again, when I'm home I'm better, I'm

fine. I come out and you guys see the results. There's been like a relapse.

I don't have the numbers and the stats, but I'm sure there's a lot of people in the room who has it. I do not subscribe to the testimony of, I forget his name, Mr. Michaels? I appreciate your testimony, however what you said was a complete joke. No offense to you personally, but it is a joke. You know, the emissions are serious business. BRESCO is a serious problem.

I think we really need to reconsider how we move forward with trash incineration. Like, it's not viable. It's not real. Like people are really sick behind the emissions from BRESCO. It needs to stop.

That's really all I have to say at this moment, so thank you. I appreciate the opportunity to speak. We really need to rethink what we are doing. There's a better way of dealing with energy. Trash incineration is not a good option. Thank you.

MR. HUG: Gwen Dubois.

MS. DUBOIS: My name is Gwen Dubois. I'm a physician here in Baltimore. I'm urging you to set the

strongest possible NOx regulations for BRESCO by making sure the analysis that Wheelabrator submits by January 2020 is rigorous and addresses the most effective NOx controls that exist. This will ensure that future regulations will be stronger based on that rigorous analysis.

Lives depend on this process. This is why I am speaking on behalf of the Chesapeake Physicians for Social Responsibility. I'm president of that organization. It has 300 dues-paying members and 1,000 activists who understand that mortality and morbidity can be reduced by enlightened and evidence-based regulations.

Scott Dance reported that Wheelabrator trash incinerator is the city's largest source of air pollution and received $10 million in renewable energy as we've understood. But because it's Tier I doesn't mean that it's a good public health or renewable source of energy. It's the number one nitrogen oxide emitter from the city as we've heard over and over again.

And it is true that nitrogen dioxide is responsible in part for the severity of our asthma

problem in Baltimore. Baltimore children suffer with asthma at a prevalence of more than twice that of any other area in this state. I'm sorry, twice the national average and are hospitalized for asthma more than children in any other area of the state and one of the highest levels in the country.

While there are triggers to asthma that are related to indoor pollution like smoke, mold, infestation in housing, air pollution, specifically nitrogen dioxide, is a major factor. We should be doing everything we can to reduce the amount being emitted into the air.

The Baltimore City Council recently passed a resolution recommending reducing the level to 45 parts per million. Evidence links elevated short-term nitrogen dioxide levels in emergency room visits, hospital admissions for asthma. There's evidence for increased respiratory and cardiovascular mortality after short-term exposure of nitrogen dioxide in adults with preexisting chronic illnesses.

Nitrogen dioxide may be an important marker of local pollution. Exposure to air pollution can lead

to worsening lung function in children but a landmark study showed the reducing nitrogen dioxide in fine particulate matter can lead to improvement in community-wide lung development in children age 11 to 15. If we reduce levels our children will develop healthier lungs.

The author has predicted that the improved function they observed in the children as a result of exposure to less nitrogen dioxide in fine particulate matter pollution would persist into their adulthood leading to a reduction in cardiopulmonary disease and longer life in adulthood.

As you know, nitrogen dioxide's main component of ozone pollution and children who play outside in high ozone areas are more likely to develop asthma and long-term ozone pollution is associated again with increased respiratory mortality. We hear the same thing over in all these studies; increased respiratory mortality, increased cardiovascular mortality.

I can go on about nitrogen dioxide is a component of fine particulate matter so it does two bad things. At any rate, I have one more minute?

MR. HUG: Thirty seconds.

MS. DUBOIS: Thirty seconds. So many years ago when I was a resident there was a patient in our emergency room with an asthma attack and she got worse and worse. We moved her back to the critical area and her lungs became so stiff that we couldn't oxygenate her and she died. She was 48 years old. You never forget these things.

I had another patient who I stayed up with all night because she wanted to sleep and her asthma attack wasn't broken. We were trying to prevent her from being on a ventilator.

It is a terrible thing not to be able to breathe, and we ought to do everything that we can to reduce the instance of asthma in our children and make sure they grow up with healthy lungs. Thank you.

MR. HUG: Kevin Kriescher.

MR. KRIESCHER: Hello. Kevin Kriescher, K-R-I-E-S-C-H-E-R. I'm a physics instructor in Baltimore and a member of the Greater Baltimore group of the Maryland Chapter of the Sierra Club.

I do not speak for the Sierra Club but on the

committee it's my job to stay abreast of waste and incinerator issues, which is why I'm here. First, I would like to respond to some things that Ted spoke about.

First of all, and all incinerators tend to do this, they talk about waste-to-energy, which quite frankly is only half the story. It's an equation designed to mislead people slightly.

The full equation is waste plus energy to waste plus energy. Yeah, five plus one equals four plus two, but if you take away the two and the one the equation isn't true.

Actually, incinerators take a large amount of waste. True, they do reduce some of the volume by burning it but what comes out the other end is some turbine-generated energy and a huge amount of incredibly more toxic waste. So there's the trade-off there.

For example, dioxins, among many other things like metal particulates, do not come out of coal burners and other dirty energy creators. Dioxin is one of the most toxic compounds known to man and only

incinerators create them.

So the reason why there's energy on the left side of the equation is that if a lot of those substances that are burnt would be recycled it would actually save energy in the manufacturing process, and energy saved is energy earned. So the complete equation is a certain amount of energy plus waste equals a certain amount of energy plus waste. That's the complete equation, and it's a much more interesting one.

Secondly, I do agree with you. In state energy, just like local food, it's a great product to choose. But that doesn't mean we have to choose in-state incineration. We are living in an auspicious era and we have wind farms coming into the bay and things like that. And if you want to know some of the details with regarding the grid, the wind farm is going to add six times as much power to the grid than BRESCO alone. But that's no surprise.

BRESCO is a bit of an antique, and that's one of the reasons why it costs so much for it to operate this equipment. I understand that it is costly to

operate these scrubbers, but to presume that people aren't interested in paying that money, by paying that money I mean some of that ends up, I would imagine, increasing the price of electricity. I can't speak for everyone in the city, but I'm pretty sure most people value their health as a priority before considering about how much their lightbulb cost.

The Chesapeake Bay Foundation estimated that 21.8 million in annual healthcare is spent due to BRESCO alone. That's a pretty steep price.

As someone has already said, even if we were to establish these emission reduction rules for nitrogen oxides, the emissions would still be 11 times worse than the second largest generator, or so the Energy Justice Network told me. Thank you.

MR. MOSIER: Thank you very much.

MR. HUG: Randolph Ford.

MR. FORD: Randolph Ford, R-A-N-D-O-L-P-H, F-O-R-D. I'm a member of the United Workers and I go out in the community to speak to people about, you know, basic things; what bothers them, what would you change if you could change anything? But the major

thing that we tend to run into is a lot of obstacles.

Okay. The obstacle that comes to mind here is why we can't we be listened to? Why can't we have something to say about what we breathe and how we live? But it seems to me that when we do have this voice, when we do have to stand up and speak to people about what's bothering us, no one is listening.

So what we're here to say is we do not need this incinerator to be operating any longer. I'm suffering right now from bronchitis, which I didn't have as a child. It progressively happened as I grew older. Also, my children have it. They inherited it from me. But not just from me, from my environment. Okay.

I live over in the Poppleton section near one of our prestigious universities, University Hospital, and they're in the right area. They're in the right area because all these sicknesses makes them money.

What we don't need right now and what we don't need in the future is this BRESCO continuing to do it. Like you said, it's a dinosaur, plain and simple. Thank you.

MR. MOSIER: Thank you.

MR. HUG: Sabrina Thomas.

MS. THOMAS: Hi, I'm Sabrina Thomas, S-A-B-R-I-N-A, T-H-O-M-A-S. I'm an ally of United Workers and a student of anthropology at Towson University.

So my school alone generates about 1,800 tons of landfill waste each year. This figure doesn't even include the waste sent to BRESCO that generates energy for our buildings, nor does this figure account for the toxic ash that is produced by BRESCO which ends up in local landfills as well as our air and water.

I'm here to highlight how our toxic waste patterns unevenly affect the city's most vulnerable communities. I call for us to end this poisonous exploitation. To this end, 70 percent of the waste that is sent to BRESCO through the city and the county is compostable and recyclable. Why are we not moving towards actual solutions for this?

Zero waste initiatives. This regulation is like slapping a band-aid on a gushing wound where lives are lost and profits are the only thing that matter.

I will not settle for this greenwash solution for our waste issues that ultimately end in sickening and killing our friends and family, our communities. Thank you.

MR. HUG: Laqeisha Greene.

MS. GREENE: Hello. My name is Laqeisha Greene. It's spelled L-A-Q-E-I-S-H-A, G-R-E-E-N-E. I'm here speaking as a citizen, also a member and affiliate of United Workers.

I grew up here in Baltimore, mostly in the northwest area but all up and down the western side of Baltimore. I have two children in my family. Asthma is very prominent in our family and it's a problem for us going out, for my children, for me, my family. One in particular, I wanted to bring an example.

I had a cousin who passed from asthma-related death. She had an asthma-related death. She went into a coma. She lived in the 21228 area code, which is southwest of BRESCO, still within a mile radius.

My children, in the past year and a half, are living in the 21227 area code which is still within less than a mile from BRESCO but northwest of BRESCO,

have been hospitalized for asthma-related illnesses, have been hospitalized no less than three times within the last year and a half. That's not even including the doctor visits.

I struggle to get their medications because of the bureaucratic designs with the healthcare. But, in particular, the fact that my children can't go outside to play due to these emissions and this gas that is being produced by BRESCO, is unnecessary.

I'm here to say that a lot of your consumers here in the Baltimore area and Maryland, in fact the state of Maryland, are changing their minds on what they want their energy to be and how they want it to be produced. Incineration is not the answer. Incineration, as it's been said over and over, is outdated and it causes more problems than the positive results that it presents.

These results that we get from the industry leaders within incineration and landfills and trash waste, they doctor their reports to make it seem like they are giving real green sustainable energy when they are not.

I urge that -- not only that you, the MDE council, not only implement this bill but encourage stronger regulations, and hopefully also to look into other forms of sustainable healthy green energy. Thank you.

MR. MOSIER: Thank you very much.

MR. HUG: I can't quite make this out. Is it Dante Swinton?

MR. SWINTON: Okay. Hey, everyone, my name is Dante Swinton. I am an environmental justice researcher and organizer with the Energy Justice Network. That is D-A-N-T-E, S-W-I-N-T-O-N.

I don't know where the dude came in from earlier that was talking about this but this facility is not clean. Wheelabrator accounts for 36 percent of the total emissions from all point sources in this city, over one-third from that one smokestack.

It's also not renewable. You get a little bit of steam to run those turbines. You get ash. And then you get a lot of air pollution. And that ash, which as people have indicated, is more toxic than when it came in as trash. It has to be buried at Quarantine

Road landfill. Half the weight that goes to Quarantine Road landfill in Curtis Bay is ash from that incinerator.

Further, Wheelabrator accounts for about half of the CO2 emissions from point sources in Baltimore City. So it's not sustainable in that regard either.

Now, incineration is also expensive. Beyond the fact that the city budget is $10.5 million every year just to burn trash, to build Wheelabrator cost about $200 million. The proposed but canceled Energy Answers project was $1 billion capital cost. Now, for $30 to $50 million we can build the recycling and composting facilities that could handle the entire Baltimore City waste stream. And that's even cheaper than retrofitting Wheelabrator with modern equipment, which they said last year in January at a RACT meeting it would cost $70 million to install and $11 million to operate every year. That's absurd.

So we also came here to speak specifically on NOx emissions which increase a lifetime risk of heart disease, stroke and chronic respiratory diseases. Even one day of exposure to NOx significantly increases

those lifetime risks for people.

I passed around -- I didn't have enough copies for everybody so if you could spread those out -- what it looks like when Wheelabrator actually implements this proposal.

Essentially, you're moving down 200 tons, but as you can see on my sheet it's basically chump change. They're not doing anything by comparison. They are still going to be nearly 11 times worse than the second largest NOx polluter in this entire city. It's not affecting anything. In fact, the NOx emissions are so large closing the facility is equivalent of taking half the cars or half the trucks off of Baltimore's roads every year simply from its NOx emissions. So this is not enough.

MDE, you are the Maryland Department of the Environment, which to me means you are supposed to be taking care of the environment and the people that live in it, so I am going to need you to act like it and move forward with stronger policies that actually advocate for zero waste, that actually advocate for jobs, and put us in a better place.

If we even hit a 70 percent recycling rate across the country we could create 2.3 million full-time equivalent jobs. Broken down by population percentage, that's 4,000 new jobs for Baltimoreans.

So think about 4,000 new families having at least one new or an additional well-paying job because we simply moved from archaic policies to more innovative, more sustainable, more clean policies. So moving forward, MDE, you need to do better, and I hope that you do.

MR. HUG: Carmera Thomas.

MS. THOMAS: My name is Carmera Thomas, C-A-R-M-E-R-A, T-H-O-M-A-S, and I am with the Chesapeake Bay Foundation. I work here in Baltimore to coordinate engagement and education programs to improve air and water quality. CBF represents thousands of members in the Chesapeake Bay Watershed, one of whom I am representing today.

Ms. Bresquith is a special educator for Baltimore City Public Schools and she works specifically in the home and hospital sector in Baltimore City. She works with medically and

physiologically fragile students in Baltimore City.

Air pollution in urban economic hubs due to transportation, manufacturing, and waste disposal is a human health hazard and is particularly harmful for her students. Pollution takes away school days from her kids. They have higher rates of absence because of asthma attacks. They are more likely to get sick year-round and have chronic absenteeism of children with asthma. That means they fall behind in school and lose precious opportunity to learn.

In addition to the direct impact of the pollution on their lungs, her students, who are fragile, suffer from asthma and have additional psychological struggles with the medical conditions that they have and it makes it harder for them to withstand stress.

Please do what is right for these children, especially the vulnerable ones. Thank you.

MR. HUG: Alison Prost.

MS. PROST: Hello. My name is Alison Prost, A-L-I-S-O-N, last name P-R-O-S-T. I'm the Maryland Executive Director at the Chesapeake Bay Foundation.

I am here on behalf of our 8,000 members in Baltimore City and over 100,000 members in the state of Maryland. We have been participating in this stakeholder process throughout the rule development and we appreciate the stakeholder process to date and hope that that continues.

While we are happy with some of the rulemaking, we think it does not go far enough at this time and that there needs to be additional changes to the rule, both in the short-term and over the long-term to make sure that it addresses the concerns that you're hearing here today.

There are five points that I want to make. I refer to our written comments that were submitted with the Chesapeake Bay Foundation and the Environmental Integrity Project for further detail and citations, but here are the five things that we want you to hear today.

Further NOx reductions are achievable at this plant right now. There's technology already at the facility that could be optimized to decrease the levels today. We don't need to wait.

MDE must revise the proposed regulation to ensure that the feasibility study is more robust, more detailed, and more timely. This means that they need to review whether or not the most effective NOx control technology that must be included in the feasibility analysis.

There also needs to be timely submissions of the information by Wheelabrator. There needs to be definite deadlines in order to have a thorough and feasibility study.

MDE must revise the preamble of the rule to clearly state that the second rulemaking will happen in 2020 in order to adopt a stronger NOx limit at that time.

MDE must revise the proposed rule to clarify the requirements during startup and shutdown events. And finally, MDE should require the installation of ammonia monitors at this facility.

Thank you for your time. Again, we look forward to participating in additional stakeholder process and refer you to our written comments. Thank you.

MR. HUG: Heather Moyer.

MS. MOYER: H-E-A-T-H-E-R, M-O-Y-E-R. Good morning, my name is Heather Moyer. I'm a resident of Baltimore City. I've lived in Violetville for over 13 years. I've lived in Morrell Park. You can see the BRESCO smokestack from my house.

But today I am here on behalf of and as a board member for Interfaith Power and Light in D.C., Maryland, and Northern Virginia. We are a faith-based, non-profit that works with congregations to respond to climate change. In that role I see how houses of worship in Baltimore or across the state are valuing the life and health of their congregants and neighbors by responding to climate change.

We're speaking out today because for far too long our Baltimore communities have borne the burdens of dirty energy. For too long incinerators have been pumping pollution into our atmosphere and pollution into the lungs are the most vulnerable.

And I also want to say that to hear this incinerator being called clean to me is ridiculous. You can't put a windmill in a dumpster fire and call it

clean as I've been told. Dirty energy is making our air and water so much dirtier. It's damaging our climate and making our children and elders sick.

I have an eight-year-old daughter myself. So many of her friends have asthma, and it's really hard to see that. In talking to her teachers too in Baltimore City schools about how many kids have to miss school days is really heartbreaking, so that's why I am here today. On behalf of thousands of people of faith across Maryland to ask the Maryland Department of the Environment to please enact stronger pollution and NOx regulations for BRESCO, and also to ask both all of our leaders here with the Maryland Department of Environment, as many have said, to think bigger about what it will take to move Baltimore in the direction of a just transition for our waste disposal that prioritizes local health, economic development, and leadership. We can do better than burning trash for energy.

Maryland's congregations are committed to leading the way to a clean energy future. We're already undertaking energy upgrades on our facilities.

We're purchasing wind energy. We're installing solar panels on our congregations and on our homes.

Now it's time to listen to the moral voice of the people and follow our lead. We're asking everyone here to be leaders in this. We're asking MDE to be a leader. Listen to the cries of the earth and the cries of the poor. A healthy Maryland for all of God's people and all creation is possible. We can make this a reality.

We want stronger pollution restrictions on BRESCO and in the future we need to move beyond trash incineration for power. Thank you.

MR. HUG: Andrew Hinz.

MR. HINZ: Hello, my name is Andrew Hinz. I'm a Baltimore City resident. I live three miles from the Wheelabrator facility and I bicycle around it all the time.

I submitted written testimony so what I'm going to say sort of mirrors that, but I felt the last point that I'm going to make it was important to hear it from me face-to-face.

So the first two points I think have been

made but I will just say it one more time, I guess largely for my own benefit.

First, as you're -- well, let me say first, I support the proposed regulation. Thank you for the hard work that you do on my behalf. I really appreciate it.

So the first point is as you're going through this process please be careful about the information that you are getting from various sources. As you've heard, some of it is based on hidden agenda. So I'm sure you're aware of that, but it's just a reminder personally to please be careful with the data you're getting.

The second point is that it's quite clear that there is no public need for this facility. So as you're working with these regulations just be mindful that the thing that we're talking about has no public need. It has no public use, no public benefit.

And then the final point is that as you're going through this process, which is a good process and I support it, keep in mind that it's essentially a living laboratory experiment. I mean, we're going to

try to see what we can do with this antique facility in terms of engineering to have different emissions levels, but it's an experiment. It is a laboratory experiment.

I have to tell you face-to-face I do not appreciate being part of a laboratory environment study. It makes me very mad and I will hope you keep that in mind, that while you're making these regulations we are suffering through a laboratory experiment here that has no public benefit. Thank you.

MR. MOSIER: Thank you.

MR. HUG: Ben Kunstman.

MR. KUNSTMAN: Hi. My name is Ben Kunstman, B-E-N, K-U-N-S-T-M-A-N. I'm the engineer at the Environmental Integrity Project. In my role I've been working on the NOx RACT rulemaking for the past two years, and after reviewing facility data optimalization test and supporting information for the rulemaking, I believe that the Wheelabrator facility has the ability to achieve lower NOx limits than those that are proposed in the regulation.

Another engineer that I've been working with

on the matter, a national expert retained by the Chesapeake Bay Foundation, conducted our analysis and found that the facility can meet a lower limit, 135 parts per million on a 24-hour basis instead of the proposed 150 parts per million just by running its existing control system more effectively.

Even more importantly, nothing that I have reviewed indicates that the BRESCO facility is technically unable to install the most effective NOx reducing control technologies. By installing additional controls Wheelabrator can greatly reduce its NOx emissions and lessen its impact on Baltimore's air quality.

Our organization asked MDE to set what is called a presumptive pollution limit for the next phase of the rulemaking that MDE has committed to in 2020. This could have required that a strong new limit would take effect unless Wheelabrator demonstrated that it is impossible to meet.

Because a presumptive pollution limit is not included within the regulation it is that much more critical that the feasibility study assess the most

effective pollution control technologies that exist for NOx to ensure further emission reductions beyond 2020.

As we have previously mentioned in our comments on the rulemaking, the proposed regulation is not specific enough about the feasibility study which is the most important piece in determining the next steps to stronger NOx limits.

We remain concerned that the current section of the proposed rule describing the feasibility analysis may allow Wheelabrator to exclude the most effective NOx pollution controls in the first step of its assessment.

MDE must ensure that Wheelabrator's analysis provides the technical feasibility of installing the most effective NOx pollution controls, also considering the potential for boiler modification and replacement. Thank you for the opportunity to speak today. I appreciate it.

MR. HUG: Bryan Lobar.

MR. LOBAR: Thank you. My name is Bryan Lobar, B-R-Y-A-N, L-O-B-A-R. I am a chemist and an environmental engineer. I work in the environmental

field, but I'm here in my capacity as a Baltimore City resident, a local landowner, a property and income tax payer here, and as a husband of an asthmatic wife and the father of a young daughter.

The environmental concerns are not just an interest to me professionally but personally I try to take actions that will result in a healthier environment. You know, we do things we can for our indoor air quality but there are some things that have been out of our control. Since we've bought property here there have been several days where ozone has been very bad. It's limited our ability to enjoy our home, to enjoy activities around our home.

I think even the 70 part per million in the current EPA standard wasn't what the scientific board reviewing the health standard recommended, and I'm very concerned in particular about potentially being responsible for it.

I'm sorry, I get a little bit emotional about this. But for my daughter's health, is me continuing to live here going to cause her to develop asthma? It certainly puts her at a higher risk.

And so I think the many witnesses and experts who have come to give testimony before, you know, I'm very intrigued by the ideas proposed about other strategies for waste diversion and many clean energy alternatives that are now available to us.

I would certainly ask that in considering the regulations you also consider the alternatives for the current plan and provide the maximally protective standard for human health for this facility that's in a major urban area, especially as Baltimore tries to sell itself as a city just not about its industrial past but its future. Thank you.

MR. MOSIER: Thank you.

MR. HUG: Sheelah Bearfoot, do you wish to speak?

MS. BEARFOOT: My name is Sheelah Bearfoot, S-H-E-E-L-A-H, B-E-A-R-F-O-O-T. So I have lived in Baltimore for a month. I came here to start a master's of health science in environmental health at Johns Hopkins University.

Moreover, I previously have -- well, I acquired a degree in genetics and plant biology from

UC Berkeley so I'm coming from this from both a scientific perspective, but honestly I did not need to struggle to come to realize that this is absolutely absurd.

I can't believe that this city has a facility to incinerate trash that is 11 times less efficient than another one that previously exists. I can't think of anyone that has anything that is 11 times worse than an alternative. I don't think anybody that wanted to speak in keeping these regulations as they currently are instead of increasing them has, for example, a smart phone that's 11 times worse than an alternative.

If we can reduce 70 percent of the waste through composting and recycling then there is absolutely no need for this incinerator in the first place. Moreover, it's important to take into consideration the synergistic effects that the NOx emissions have on public health in regions that already suffer higher rates of chronic disease, especially asthma.

Nationally, Baltimore City has twice the rate of asthma as the nation, which is at 9.4 percent.

Baltimore has a 20 percent rate and that's one in five people suffer with asthma. Hospitalizations for asthma cost about $7,500 per person.

If trying to cut corners on this regulation is a cost-saving measure, we're not saving money in the long run because it's just being passed down to Baltimore citizens in the terms of higher medical costs and lost productivity. Nationally, asthma-related absences from work are 10 million days, and for school children that's 14 million days. The proportion Baltimore has of that is twice what it should be.

So, again, even though I've only been here for about a month, I can't really imagine why the Maryland Department of Energy would not enforce stronger regulations than those that are currently proposed given how much opposition has come from residents that actually live here.

I mean, I didn't see anybody that actually lives here and is affected by this happy with the current regulations and, as we've heard from multiple other individuals, the technology to make sure that NOx emissions are kept down even further than what this

greenwashing proposal is stating currently exists. It's currently feasible to do so. There's other alternatives that can be used that would create more jobs.

Honestly, I can't even see why on earth we are not trying to go for stronger standards. People will say that this is better than methane, better than landfills, better that -- other states proposed similar regulations on incinerators.

Well, business as usual has got us into the point of climate change and destruction to the point where we're looking at potentially two degrees Celsius of warming by the end of this century. Business as usual is not working, even an outsider can see that.

MR. MOSIER: Thank you.

MS. JONES: Please go ahead.

MS. BRAND: Thank you. I just want to show support for the people who are opposed to the BRESCO facility. It's been there for as long as I can remember, and for as long as I remember it's been problematic in causing serious health conditions within Baltimore City residents.

I've seen articles in the paper where the fees have been waived repeatedly, and it just doesn't make any sense to me. There are other alternatives that you, as business people, if you want to make money you can make money in clean energy and do us a favor and do yourselves a favor. Make some money doing something positive instead of having to even have this argument in the first place.

I plead with the Maryland Department of Environment to impose sanctions or restrictions or fines or anything like that. I have a child. Lots of people have children. I'm sure you have children. And I'm sure you care about their health just as much as anybody else, and I hope you take that into consideration and invest in something else. Thanks.

MR. MOSIER: Thank you.

MS. BRAND: My name is Liesl, L-I-E-S-L, Brand, B-R-A-N-D.

MR. MOSIER: Okay. Thank you very much. Let the record show that all verbal hearing comments have been received.

The close of the comment period is 5:00 p.m.

today, as indicated in the public hearing notice. The Department will consider all comments received today before making a decision to adopt the new regulation and amendments. Thank you for your participation.

MR. SAWTELL: Excuse me, excuse me. We've heard from dozens of residents speaking out, raising concerns about the facility. We've heard from Mr. Skaggs from Waste Authority and Mr. Michaels who flew in today, I assume. We haven't heard one word from the facility itself, from BRESCO. Why not?

AUDIENCE MEMBER: We would like to hear from BRESCO if we may.

MR. HUG: I will add this is a public hearing. This is not a Q and A with the Department. If you would like to have a conversation with them after the hearing is closed, you are more than welcome to.

MR. SAWTELL: Well, let the record show that folks in attendance are calling out that BRESCO hasn't spoken a word today.

MR. HUG: It's their choice if they like to speak or not.

AUDIENCE MEMBER: Absolutely.

MR. MOSIER: This will conclude the public hearing regarding the proposed action to adopt amendments to COMAR 26.11.08, Control of Incinerators and accompanying amendments.

Let the record show that it is now 11:39 a.m. and this hearing is officially concluded.

(Whereupon, the hearing was concluded.)

CERTIFICATE OF COURT REPORTER

I, Jennifer Razzino, do hereby certify that the foregoing transcription was reduced to typewriting via audiotapes recorded by me; that I am neither counsel for, nor related to, nor employed by any of the parties to the case in which these proceedings were transcribed; that I am not a relative or employee of any attorney or counsel employed by the parties hereto, nor financially or otherwise interested in the outcome of the action.

JENNIFER RAZZINO

Court Reporter

SECTION 8 – Comments

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Aaeron Robb <antigonemydear@gmail.com>
Reply-To: antigonemydear@gmail.com
To: randy.mosier@maryland.gov

Mon, Sep 17, 2018 at 6:01 PM

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Ms. Aaeron Robb
3008 Saint Paul St
Baltimore, MD 21218
410-235-4752

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comment on proposed incinerator NOx regulation, COMAR 26.11.08

Adam Driscoll <adrisc1@gmail.com> Thu, Sep 20, 2018 at 1:04 PM
To: "randy.mosier@maryland.gov" <randy.mosier@maryland.gov>

Hey Randy,

My name is Adam Driscoll and I currently live in Catonsville, MD. My girlfriend currently lives in Bolton Hill and we are very involved in the running/biking communities in Baltimore City where we spend majority of our time. My son who is 7 also at times suffers asthma from bad air quality.

I first wanted to thank Maryland Department of Environment for this opportunity to share why this issue is relevant to me and our group of runners. I want to urge MDE to approve the proposed NOx RACT standards for incinerators that will require the Wheelabrator Baltimore incinerator to meet a NOx limit of 150ppm on a 24 hour-avg starting on May 1 2019 and a NOx limit of 145 ppm on a 30 day average starting on May 1, 2020.

There are a few reasons why this issue matters to me:

1). Climate change is a big one that worries after seeing multiple bad floods in Ellicott City, MD over last two years. This has greatly impacted that area and is directly impacting Patapsco State Park where myself and a lot of my friends run in.

2). Air quality is another one that concerns me. My son who is 7 at times suffers from asthma and it seems to directly be related to the Quality if Air. As well being a runner and biker we are outside a lot and there are times it is recommend we don't run/bike because the air is so bad and can be dangerous. One fact I found out about air pollution and how it impacts asthma. "Air pollution from old and dirty energy sources such as incinerators can worsen the symptoms of asthma, which is costing Marylanders their education through missed school. Asthma is a leading cause of absenteeism in Baltimore schools and also causes Marylanders to miss work and increases health care expenses, causing economic hardship."

3). Code red days are very scary and could be directly impacting our health. Not only is it recommended we don't go outside on these days, I wonder what else this is doing to our bodies on a given day.

Thank you so much for your time on this issue! I appreciate the opportunity!

Adam Driscoll

--
www.adventuresforthecure.com
Anything is Possible

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Alan Wojtalik <alan_wojtalik@hotmail.com> Mon, Sep 17, 2018 at 5:19 PM
Reply-To: alan_wojtalik@hotmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Mrs. Alan Wojtalik
3723 Green Oak Court
Baltimore, MD 21234
4105600881

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Albert Mock <aamock2@gmail.com> Fri, Sep 21, 2018 at 3:57 PM
Reply-To: aamock2@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Albert Mock

410-960-2519

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Alexa White <awhite2@umbc.edu> Wed, Sep 19, 2018 at 12:56 PM
Reply-To: awhite2@umbc.edu
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Ms. Alexa White
7 S Potomac St
Baltimore, MD 21224
631-745-4165

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Alicia Williams <aliciaelba@gmail.com> Wed, Sep 19, 2018 at 12:38 PM
Reply-To: aliciaelba@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Ms. Alicia Williams
1120 Cleveland St
Baltimore, MD 21230
202-285-3374

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

1 message

Allen Robinson <loyd.robinson1@verizon.net> Fri, Sep 21, 2018 at 2:43 PM
Reply-To: loyd.robinson1@verizon.net
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Allen Robinson
1521 Gordon Cove Ct
Annapolis, MD 21403
410-263-3205

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Allison Goodwin <yuanjuexin@gmail.com> Wed, Sep 12, 2018 at 4:33 PM
Reply-To: yuanjuexin@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Ms. Allison Goodwin
2345 Windemere Rd
Birmingham, MI 48009
2486496883

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Amber Power <amberpower2015@gmail.com> Wed, Sep 19, 2018 at 12:52 PM
Reply-To: amberpower2015@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Amber Power
303 S Poppleton St
Baltimore, MD 21230
410-206-0648

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Amina Whynn <prettyminaa7@gmail.com> Wed, Sep 19, 2018 at 12:40 PM
Reply-To: prettyminaa7@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Ms. Amina Whynn
1010 E Preston St
Apt 3
Baltimore, MD 21202
443-297-2346

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

1 message

Amy Zoeller <amy.zoeller@gmail.com> Fri, Sep 21, 2018 at 2:37 PM
Reply-To: amy.zoeller@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Amy Zoeller
3364 Arundel on the Bay
Annapolis, MD 21403
815-312-7267

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

1 message

Anderson Tryoso <and3rfach@gmail.com> Fri, Sep 21, 2018 at 2:07 PM
Reply-To: and3rfach@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Anderson Tryoso
2231 Rogene Dr
Apt 104
Baltimore, MD 21209
443-354-0380

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comment on proposed incinerator NOx regulation COMAR 26.11.08 Andrew Hinz

Andrew Hinz <ahinz61@outlook.com> Thu, Sep 20, 2018 at 11:26 AM
To: "randy.mosier@maryland.gov" <randy.mosier@maryland.gov>
Cc: "Eric.Costello@baltimorecity.gov" <Eric.Costello@baltimorecity.gov>, "nick.mosby@house.state.md.us" <nick.mosby@house.state.md.us>, "antonio.hayes@house.state.md.us" <antonio.hayes@house.state.md.us>

Mr. Randy Mosier

Chief of the Regulation Division, Air and Radiation Administration

Department of the Environment

Comment on proposed incinerator NOx regulation COMAR 26.11.08 by Andrew Hinz

Thank You for the opportunity to comment on this proposed regulation.

I have lived about 3 miles from the BRESCO incinerator in south Baltimore for four years and frequently bicycle around it. A lifelong Maryland resident, last winter was the first time in my life I was treated for bronchitis. It was probably coincidental to the unhealthy air that our community must breath. But, as you well know, our unacceptable asthma rates are directly correlated to nitrogen oxide emitted by the BRESCO facility.

Please do rigorously analyze the installation of new pollution control technology for nitrogen oxides (“NOx”) at the Wheelabrator Baltimore incinerator with the purpose of conducting a subsequent rulemaking process to set much stronger NOx pollution limits.

However, we need to shift paradigms here if Baltimore city expects to discontinue losing residents. Our community needs to fully understand why we are a nonattainment area and what we must do to address one of our basic human rights, clean air. We do not appreciate being a live laboratory for tweaking the engineering of an out-of-date, inefficient, uneconomic, climate-impacting, unnecessary source of pollution.

Andrew Hinz

1427 Park Avenue

Baltimore, MD 21217

ahinz61@outlook.com

443-617-4079

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Ann Carroll <anncarroll1436@gmail.com> Tue, Sep 18, 2018 at 7:56 PM
Reply-To: anncarroll1436@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Mrs. Ann Carroll
902 Stone Barn Rd
Towson, MD 21286
410-321-1031

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Anne Bidder <Peachbid@verizon.net>
Reply-To: Peachbid@verizon.net
To: randy.mosier@maryland.gov

Mon, Sep 17, 2018 at 9:13 AM

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Mrs. Anne Bidder
3287 patuxent river road
Davidsonville, MD 21035
4107986719

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comment on proposed incinerator NOx regulation, COMAR 26.11.08

Bethany Gregg <bethany.gregg@gmail.com> Fri, Sep 14, 2018 at 2:36 PM
Reply-To: bethany.gregg@gmail.com
To: randy.mosier@maryland.gov

Dear Mr. Mosier,

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for our region. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a feasibility study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, and as a mother of two small children, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Mrs. Bethany Gregg
5748 CROSS COUNTRY BLVD
BALTIMORE, MD 21209
4435384602

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Bill Regenold <wtregenold@gmail.com> Fri, Sep 21, 2018 at 1:54 PM
Reply-To: wtregenold@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Bill Regenold
1806 Kenway Rd
Baltimore, MD 21209

BLUE WATER BALTIMORE

September 21, 2018

Mr. Randy Mosier
Chief of the Regulation Division
Air and Radiation Administration
Department of the Environment
1800 Washington Boulevard
Baltimore, MD 21230
randy.mosier@maryland.gov

Submitted via electronic mail

Re: Support for proposed incinerator Nitrogen Oxides (NOx) Reasonably Available Control Technology (RACT) limits for the Wheelabrator Baltimore incinerator; COMAR 26.11.08

Dear Mr. Mosier:

On behalf of Blue Water Baltimore, please accept these comments in support of proposed regulations that would reduce NOx emissions from the Wheelabrator incinerator in Baltimore, Maryland. Blue Water Baltimore is a not-for-profit watershed organization committed to restoring the quality of Baltimore's rivers, streams and Harbor to foster a healthy environment, a strong economy, and thriving communities. We respectfully request that the Maryland Department of the Environment (MDE) approve the proposed NOx RACT standards for incinerators that will require the Wheelabrator Baltimore incinerator to meet a NOx limit of 150 ppm on a 24-hour average starting on May 1, 2019 and a NOx limit of 145 ppm on a 30-day average starting on May 1, 2020.

The Wheelabrator facility in Baltimore is a large municipal waste incinerator that began operations in 1985 and currently processes up to 2,250 tons of waste per day.[1] Located on the Middle Branch of the Patapsco River (Baltimore Harbor), this facility emitted 1,123 tons of NOx in 2015—an increase over 2013 and 2014 emissions—and was the sixth largest source of NOx emissions in Maryland, according to MDE.[2]

Baltimore Harbor is the most polluted tributary to the Chesapeake Bay, and was first listed in 1996 as impaired for nutrients on Maryland's 303(d) list. Baltimore Harbor suffers from chronic discharges of nitrogen pollution from two wastewater treatment plants, significant sewage system leakage and overflows, and stormwater pollution.

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1 Wheelabrator, https://www.wtienergy.com/plant-locations/energy-from-waste/wheelabrator-baltimore.

2 MDE PowerPoint Presentation, "NOx RACT for Municipal Waste Combustors (MWCs): Stakeholder Meeting – January 17, 2017," at slide 14-15, available at http://www.mde.state.md.us/programs/regulations/air/Documents/SHMeetings/MunicipalWasteCombustors/MWCNOxRACTPresentation.pdf.

Atmospheric deposition of nitrogen contributes to the impairment of our waterways. In 2010, when the Chesapeake Bay TMDL for nutrients was established, atmospheric deposition was the largest source of nitrogen to the Chesapeake Bay watershed.[3] Nitrogen oxides (NOx) are the primary source of this atmospheric nitrogen. NOx emissions from the Wheelabrator incinerator are a substantial contributor to poor local and regional water quality. This facility produces more NOx per energy output than coal plants statewide, and its NOx emissions have remained relatively steady over the past decade, while emissions from coal plants and other Maryland incinerators have substantially declined.

As such, Blue Water Baltimore urges MDE to use its authority to require significant NOx reductions at Wheelabrator Baltimore. We urge you to approve the proposed NOx RACT standards for incinerators that will require the Wheelabrator Baltimore incinerator to meet a NOx limit of 150 ppm on a 24-hour average starting on May 1, 2019 and a NOx limit of 145 ppm on a 30-day average starting on May 1, 2020. Blue Water Baltimore also respectfully requests that MDE ensure that Wheelabrator's feasibility study fully analyzes the potential for installing pollution controls on the plant, and to use that study to set stronger emissions limits in 2020.

We appreciate the opportunity to submit these comments. Please do not hesitate to contact me with any questions at 410-254-1577 ext125 or at jaiosa@bluewaterbaltimore.org.

Sincerely,

Jenn Aiosa
Executive Director
Blue Water Baltimore

---

3 Bay TMDL at Appendix L: Setting the Chesapeake Bay Atmospheric Nitrogen Deposition Allocations, at L-1 (Dec. 2010), https://www.epa.gov/sites/production/files/2015-02/documents/appendix_l_atmos_n_deposition_allocations_final.pdf; see also, U.S. EPA, Office of Air Quality Planning & Standards, "Technical Bulletin: Nitrogen Oxides (NOx), Why and How They Are Controlled," at 1 (Nov. 1999), https://www3.epa.gov/ttncatc1/dir1/fnoxdoc.pdf.

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Brent Hayward <brenthayward1@gmail.com> Fri, Sep 21, 2018 at 1:07 PM
Reply-To: brenthayward1@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Brent Hayward
130 N Milton Ave
Baltimore, MD 21224
410-868-7801

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Carol Burton <cabrtn@gmail.com> Wed, Sep 19, 2018 at 12:39 PM
Reply-To: cabrtn@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Ms. Carol Burton
818 E Lake Ave
Baltimore, MD 21212

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Carol E. Wilson <cewilsonbalto@verizon.net> Mon, Sep 17, 2018 at 3:14 PM
Reply-To: cewilsonbalto@verizon.net
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Ms. Carol E. Wilson
3129 East Avenue
Parkville, MD 21234
410-668-8826

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Carol Nau <nau.carol@gmail.com> Mon, Sep 17, 2018 at 10:23 AM
Reply-To: nau.carol@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Ms. Carol Nau
2300 Northcliff Drive
Jarrettsville, MD 21084
4106920610

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

1 message

Carrie Greene <carriegrn@gmail.com> Fri, Sep 21, 2018 at 1:52 PM
Reply-To: carriegrn@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Carrie Greene
2118 North Cliff Dr
Baltimore, MD 21209
410-466-4648

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

1 message

Catrina Barth <trinasboro@gmail.com> Fri, Sep 21, 2018 at 2:12 PM
Reply-To: trinasboro@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Catrina Barth
1912 Fairbank Rd
Baltimore, MD 21209
443-278-3020

September 21, 2018

Mr. Randy Mosier
Chief of the Regulation Division
Air and Radiation Administration
Department of the Environment
1800 Washington Boulevard, Suite 730
Baltimore, Maryland 21230

Dear Mr. Mosier,

My name is Taylor Smith-Hams and I'm a Baltimore resident and the Healthy Communities Campaign Organizer for the CCAN Action Fund. We are a regional nonprofit focused on advocating for policies that will shift our region away from fossil fuels and to clean energy solutions.

Thank you for this opportunity to provide testimony on this important rulemaking. While the NOx emissions reductions MDE is proposing for Maryland's incinerators are a step forward, they are not enough to ensure a healthier future for our region. We are glad to see that MDE plans to publish a stricter regulation after BRESCO completes a feasibility study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. On behalf of our 20,807 members in Maryland, we expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health as we move away from incineration and toward zero waste.

The BRESCO incinerator is an aging, outdated facility that burns trash from Baltimore City and Baltimore County. Even though the industry touts the facility as "green energy," BRESCO emits more NOx per unit of energy than any power plant in Maryland. NOx is one of the incinerator's more harmful pollutants, as it can combine with other pollutants in the air and contribute to asthma, cardiovascular disease, and other health problems. Currently, BRESCO emits about twice as much NOx as Maryland's other trash-burning incinerator in Montgomery County.

As a Baltimore resident who enjoys running, I have personally experienced the impacts of our local air pollution. A few months ago, I left my house for an early morning run. A few miles in, I experienced shortness of breath and chest pain. I do not have asthma and have never had this type of experience before when running. As I stopped to try and recover, I became increasingly alarmed by my inability to catch my breath. I ended up walking home, all the while wondering if I should knock on a stranger's door to seek assistance. When I finally returned home, I went online and read that there was a code red alert in effect. This experience has made me more reluctant to exercise and even go outside on code red or excessively hot days.

Reducing local air pollution, and NOx in particular, is critical for public health in Baltimore. While this was my worst personal experience with the effects of air pollution, I hear stories from

residents every day of how air pollution, asthma, and other respiratory problems impact peoples' day-to-day lives, from lost school and work days to frightening hospitalizations.

Because CCAN Action Fund focuses on climate change, I also want to highlight the climate impacts of trash incinerators like BRESCO. These facilities are huge emitters of greenhouse gases. In addition to its high NOx emissions, in 2015, the BRESCO incinerator emitted roughly double the amount of greenhouse gases per megawatt hour of energy than each of the six largest coal plants in Maryland.

Currently, the BRESCO incinerator receives undeserved subsidies under our state's Renewable Portfolio Standard amounting to $10 million over the past six years, according to the Baltimore Sun. That means that incineration, which emits high levels of health-hazardous air pollution like NOx and is dependent upon a constant, unsustainable trash stream, gets the same subsidies as wind and solar in our state. Instead of subsidizing incineration, the state should move toward zero waste policies and practices for a healthier population and environment. To get there, we are working with the state legislature to stop subsidizing incineration. At the same time, we support MDE's efforts to tighten NOx emissions for Maryland's incinerators, and we urge you to go further than what is outlined in the proposed regulation.

Thank you.

Respectfully,

Taylor Smith-Hams
Healthy Communities Campaign Organizer
CCAN Action Fund

Randy Mosier -MDE- <randy.mosier@maryland.gov>

bresco HEARING

Charles Alexander <ch_a_alex@hotmail.com> Thu, Sep 20, 2018 at 4:05 PM
To: "randy.mosier@MARYLAND.GOV" <randy.mosier@maryland.gov>

Mr. Mosier,

I can not attend Friday's hearing re: proposed reductions to nitrous oxide (NOx) emissions from the Bresco facility. As a person who has suffered from severe allergic reactions for the past twenty years I urge you to reduce as much pollution from this facility as you possibly can. have spent countless hours on Doctors visits, medicines (both prescription and over the counter), and time getting almost uncountable allergy injections. You may be saying "this person has allergies, what does this have to do with chemical pollution from smokestacks".

Well, both stress the respiratory system and with more stress come more issues to deal with. Cleaner air with less pollutants would make the job of dealing with allergens much easier. And, by breathing cleaner air I and my fellow suffers may live healthier lives with less time and money spent on Doctor's visits and paying for medicine.

I really hope you will go into this hearing with an understanding of how much good will be done for the health of Maryland residents (and the health of their pocketbooks) if you cut pollution from this facility.

Sincerely,

Charles Alexander

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Charles Graham III <grahamcharlesbfhs@gmail.com> Thu, Sep 20, 2018 at 5:39 PM
Reply-To: grahamcharlesbfhs@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Charles Graham III
1123 Monroe St
Baltimore, MD 21225

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Charlie Markham <capnchaz@verizon.net> Tue, Sep 18, 2018 at 12:24 PM
Reply-To: capnchaz@verizon.net
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Dr. Charlie Markham
748 Panther Ct
Millersville, MD 21108
(410)672-0464

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

1 message

Chloe Brausch <chloe.l.b.1993@gmail.com> Fri, Sep 21, 2018 at 3:39 PM
Reply-To: chloe.l.b.1993@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Chloe Brausch
33 N Milton Ave
Baltimore, MD 21224
701-226-4959

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Chris Watts <vexed50@verizon.net> Mon, Sep 17, 2018 at 9:51 PM
Reply-To: vexed50@verizon.net
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Mr. Chris Watts
6472 Beechfield Ave
Elkridge, MD 21075
4107962432

Randy Mosier -MDE- <randy.mosier@maryland.gov>

COMAR 26.11.08: Control of Incinerators

chris YODER <chris.yoder@mdsierra.org> Tue, Sep 18, 2018 at 10:55 AM
Reply-To: chris.yoder@mdsierra.org
To: randy.mosier@maryland.gov

During my years on the staff of a US Senate committee I learned that studies can be useful when they generate objective data. I also learned that studies can be used to delay needed action. And, even more disturbing I learned that studies can be shaped and conducted so as to produce just about any desired result.

So yes, a study of the BRESCO trash incinerator has the potential to produce useful information, but if the study is conducted or contracted by BRESCO's operators. MDE will have the obligation to ensure that the study is objective and conducted in a transparent manner. Remember that the study is not an outcome. The only acceptable outcome is clean air for Baltimore. The burden of writing , implementing and enforcing regulations and procedures that produce the cleanest air possible for Baltimore remains with MDE. Current air quality in Baltimore is evidence that past performance has been inadequate. The ball is in MDE's court.

Mr. chris YODER
5701 Rusk Avenue
Baltimore, MD 21215
410.466.2462

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

1 message

Christine Machon <coliver73@gmail.com> Fri, Sep 21, 2018 at 3:30 PM
Reply-To: coliver73@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Christine Machon
1312 Harbor Rd
Annapolis, MD 21403
410-456-7970

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Claude Guillemard <claude@jhu.edu>
Reply-To: claude@jhu.edu
To: randy.mosier@maryland.gov

Wed, Sep 19, 2018 at 12:44 PM

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Ms. Claude Guillemard
9 Edgemoor Rd
Timonium, MD 21093
410-842-5282

Northeast Maryland Waste Disposal Authority

August 31, 2018

Mr. Randy E. Mosier, Division Chief
Air Quality Regulations Division
Maryland Department of the Environment
Air Quality Planning Program, Air & Radiation Mgmt. Adm.
1800 Washington Boulevard, Suite 730
Baltimore, Maryland 21230-1720

Subject: NOx RACT and Opacity Proposed Regulations

Dear Mr. Mosier:

The Northeast Maryland Waste Disposal Authority, Montgomery County and Covanta have reviewed the proposed regulations for NOx RACT and Opacity. We have comments to provide as well as a few questions. Our comments and questions are:

1. As per our prior comments on the rule proposal dated 12/6/17, we recommend that the definition of '24-hr average' be streamlined. The Montgomery County facility currently calculates 24-hr averages for NOx pursuant to our Title V Operating permit and federal Municipal Waste Combustor rules. Use of a different 24-hr block definition for NOx during startup/shutdown events and normal operation creates the potential for unnecessary confusion. We recommend that the definition be consistent with 40 CFR 60.51b: "Twenty-four hour daily average or 24-hr daily average means either the arithmetic mean or geometric mean (as specified) of all hourly emission concentrations when the affected facility is operating and combusting municipal solid waste measured over a 24-hour period between 12:00 midnight and the following midnight."

2. Also, as previously discussed with the Department, the language of the proposed rule could be interpreted such that both the concentration and mass emission limits could apply at the same time. It is our understanding that the intent of the proposed rule is to develop alternate emission standards during startup/shutdown periods, not supplemental standards.

3. Finally, in regard to the 24-hr period, Section .10L(2) (Compliance with the mass loading emission limitation for the MCRRF) requires that compliance be determined *using data from the 3-hr SU or SD period and the remaining 21-hrs of the 24-hr period*). This language is very specific; what happens if the Facility has both a 3-hr SU *and* SD period on a unit in the same 24-hr period (i.e., there is less than 21 hours left in the 24-hr period)?

410.333.2730 / 410.333.2721 fax / authority@nmwda.org
nmwda.org / Business-to-Business Recycling: mdrecycles.org
Tower II - Suite 402, 100 S. Charles Street, Baltimore, MD 21201-2705

Comprehensive Waste Management Through Recycling, Reuse, Resource Recovery and Landfill

4. As the Department is aware, the Facility currently complies with a NOx mass emission limit for startup/shutdown/malfunction periods as per both the Title V Operating Permit and the Prevention of Significant Deterioration (PSD permits). The methodology for monitoring, recordkeeping and reporting emission results under this provision is well understood by both the Department and the Facility. The above comments could be addressed through a simple change to the Facility permits that incorporates the new concentration and mass limits for NOx for startup/shutdown periods in lieu of the existing NOx limits for startup/shutdown/malfunction.

5. The proposed rule (Statement of Purpose) includes an unrelated change to language on opacity compliance due to EPA concerns with SSM. The Department's rationale for the change is unclear; please provide additional discussion on this action so that we may better understand potential impacts on opacity data gathering/reporting requirements.

6. Please note that we intend on meeting the quarterly reporting requirement (Sections .10H & I) through our existing Quarterly Operations and Emissions Report submittal to the Department.

7. Finally, given that the Facility's Title V Operating and PSD Permits contain different concentration based limits and mass limits for SU/SD and malfunction, how does the Department propose to address the discrepancies (particularly as it relates to the PSD permit)?

We would like to understand how we can discuss our questions prior to making any formal comments on the portion of proposed regulation relating to those questions.

I will be reaching out to you to set a time for a conference call. If you have any questions prior to the call, please let me know.

Sincerely,

Chris Skaggs
Executive Director

MCF11839SSLU.DOCX

Northeast Maryland Waste Disposal Authority

September 21, 2018

Mr. Randy E. Mosier, Division Chief
Air Quality Regulations Division
Maryland Department of the Environment
Air Quality Planning Program
1800 Washington Boulevard, Suite 730
Baltimore, Maryland 21230-1720

Subject: Proposed NOx RACT and Opacity Regulations

Dear Mr. Mosier:

I am writing on behalf of the Northeast Maryland Waste Disposal Authority, Montgomery County Division of Solid Waste Services and Covanta Montgomery. We would like to thank the Maryland Department of the Environment (MDE) for the efforts related to drafting this regulation and the outreach to the many affected stakeholders throughout this multi-year process. Specifically, we would like to thank you for the multiple discussions to help us to understand the process, the reasoning behind some of the proposed language and listening to our concerns.

Although we were not able to convince MDE to incorporate all of our suggested language, we stand in support of this proposed regulation as written as it will help Maryland meet ambient air quality standards for ozone.

Sincerely,

Chris Skaggs
Executive Director

cc: Willie Wainer, Montgomery County
Joe LaDana, Montgomery County
Dave Blackmore, Covanta

MCF118402SLU.DOCX

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Comprehensive Waste Management Through Recycling, Reuse, Resource Recovery and Landfill

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comment on proposed incinerator NOx regulation, COMAR 26.11.08

Cynthia Hartzler-Miller <cynthiadhm@gmail.com>
Reply-To: cynthiadhm@gmail.com
To: randy.mosier@maryland.gov

Mon, Sep 17, 2018 at 6:28 PM

Dear Mr. Mosier,

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for our region. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a feasibility study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Mrs. Cynthia Hartzler-Miller
614 E. 31st St.
BALTIMORE, MD 21218
410-889-0972

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Dana Johnson <danasalem@comcast.net> Fri, Sep 21, 2018 at 2:15 PM
Reply-To: danasalem@comcast.net
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Dana Johnson
1823 Fairbank Rd
Baltimore, MD 21209

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Dann Brown <Dannb@verizon.net> Mon, Sep 17, 2018 at 6:59 PM
Reply-To: Dannb@verizon.net
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Mr. Dann Brown
8695 Flowering Cherry Ln
Laurel, MD 20723
301-490-2116

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comment on proposed incinerator NOx regulation, COMAR 26.11.08

Dave Neun <idneun@gmail.com> Fri, Sep 21, 2018 at 2:05 PM
To: Randy.Mosier@maryland.gov
Cc: Bernard Penner <penner9216@gmail.com>, Lauren Barbour <Laurenxbarbour@gmail.com>, Martin Z <mar@rrginc.com>, Alexander Vishio <avishio@cacucc.org>

Dear Mr. Mosier:

As a community organization in the Baltimore area who represents concerned residents who breathe the pollution from the Wheelabrator MWC we want to thank Maryland Department of the Environment (MDE) for promulgating a tighter standard for trash incinerators that will take 200 tons of nitrogen oxides out of the air that our citizens breathe every year. This is an important step forward to build a healthier future for our region.

We trust that MDE plans to enforce the stricter standard after Wheelobrator completes the required independent third party analysis to be conducted over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction based on new technologies.

We are pleased to see and appreciate MDE's commitment to continue setting a new and more rigorous standards reasonably based on the development of newly available pollution control technology that will more fully protect health of the citizens of Maryland.

Thank you.

David Neun on behalf of the Baltimore 350 organization
idneun@gmail.com

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

David Councilman <davidcouncilman7@gmail.com> Fri, Sep 21, 2018 at 11:02 AM
Reply-To: davidcouncilman7@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Mr. David Councilman
8801 Westmoreland Lane
St Louis Park, MN 55426
6123360833

Comment on proposed incinerator NOx regulation, COMAR 26.11.08

David Neun <idneun@gmail.com>
Reply-To: idneun@gmail.com
To: randy.mosier@maryland.gov

Wed, Sep 19, 2018 at 8:33 PM

Dear Mr. Mosier,

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for our region. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a feasibility study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Mr. David Neun
246 Cinder R
Lutherville-Timonium, MD 21093
443 895 5747

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Dennis McMullin <macpsu69@gmail.com> Wed, Sep 19, 2018 at 12:54 PM
Reply-To: macpsu69@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Dennis McMullin
1511 Bedworth Rd
Lutherville-Timonium, MD 21093
410-465-8357

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comment on proposed incinerator NOx regulation, COMAR 26.11.08

diane@echotopia.org <diane@echotopia.org>
To: randy.mosier@maryland.gov

Wed, Sep 19, 2018 at 10:44 PM

Wednesday, September 19, 2018

Randy Mosier, Chief, Regulation Development Division
Air Quality Planning Program
Air and Radiation Administration
Maryland Department of the Environment
1800 Washington Boulevard, Suite 730
Baltimore, Maryland 21230-1720

Re: Comment on proposed incinerator NOx regulation, COMAR 26.11.08

Dear Mr. Mosier,

I write this testimony regarding the proposed BRESCO incinerator NOx regulation, COMAR 26.11.08. Thank you for this opportunity to share with you now why this issue matters to me as well as to other Baltimore and Maryland residents.

I am a small business owner. I designed my business, Echotopia LLC, to have a zero-waste structure that I invented. At Baltimore city farmers markets on weekends, I sell my home made, biodegradable cleaning powder products in reusable glass jars and other recycled containers. Customers return with their containers to my refill station for refills. In the three years since I started Echotopia LLC, I have had over 1,000 sales, meaning that my customers have PREVENTED over 1,000 pieces of trash from entering the BRESCO incinerator, or a landfill site.

My customers come from all walks of life, and all political persuasions, and they are thrilled to be able to avoid making trash through their purchases. Please visit my social media to see photos of all the smiling and proud people holding their reuse jars over three years! But eco-entrepreneurship, combined with consumer purchases, even on a grander scale than mine, can't effectively move our city and state on the path to zero waste objectives on our own. Yes I am proud that less trash is now going into incineration thanks to my small business. But innovative business structures must be partnered with common sense government policy: policy that prioritizes public safety, policy that recognizes that dramatically reducing the terrible public and environmental health, along with costly fiscal, consequences of toxic air from the BRESCO incinerator is paramount.

During the week, I teach, and one of my very young students has asthma. During the recent multi-day Code Red days, we teachers struggled with keeping him safe and healthy with little success. It was very frightening. He was miserable, could not go outside for days, and remained unwell for almost a week. A teaching colleague of mine actually lost a young student to asthma in a previous education setting, and her young son suffers from asthma. She lives in fear for her son's health. These are just some examples of the avoidable health issues and consequences for Baltimore area residents connected to the pollutants emitted from the BRESCO incinerator, this city's biggest air polluter.

BRESCO also produces far more NOx per energy output than the coal plants in the state - and its NOx emissions have remained about the same over the last decade, while emissions from coal plants and the state's other incinerator have for the most part significantly declined. It's time for BRESCO to do its part to reduce air pollution in the Baltimore region.

An expert evaluation of control tests and studies produced through the stakeholder process concluded that BRESCO could meet a 135-ppm daily NOx limit today just by optimizing its existing control technology.

The Baltimore City Council has passed a resolution calling for a 45-ppm limit for the BRESCO incinerator.

Incinerators are huge emitters of greenhouse gases. In addition to its high NOx emissions, in 2015, the BRESCO incinerator emitted roughly double the amount of greenhouse gases per megawatt hour of energy than each of the 6 largest coal plants in Maryland.

And so, Mr. Mosier, I urge Maryland Department of the Environment (MDE) to approve the proposed NOx RACT standards for incinerators that will require the Wheelabrator Baltimore incinerator (BRESCO) to meet a NOx limit of 150 ppm on a 24-hour average starting on May 1, 2019 and a NOx limit of 145 ppm on a 30-day average starting on May 1, 2020.

Additionally, I urge MDE to ensure that Wheelabrator's feasibility study fully analyzes the possibility of installing pollution controls on the plant, and to use that study to set much stronger emissions limits in 2020.

I hope you find the information in my written testimony to be compelling and worthy of serious consideration.

Mr. Mosier, thank you for you time, and I urge you to please support this bill.

Sincerely,

Diane Wittner
Founder and Owner
Echotopia LLC
Baltimore, MD

Sincerely,

Diane Wittner
Owner & Alchemist, *Echotopia LLC*
Baltimore, MD

Aromatherapeutic & biodegradable cleaning products
Laundry detergent, scouring scrub, hand scrub
Garden based, zero waste & plastic free
Made with home grown healing herbs and essential oils
Plantable native wildflower Seed Rounds for bioregional biodiversity
Baltimore farmers markets, local shops & online
Fair trade & local living economy

---

diane@echotopia.org
410.963.5527

Website*Twitter*Facebook*Instagram

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Doug Aus <dougaus2@gmail.com> Wed, Sep 19, 2018 at 12:43 PM
Reply-To: dougaus2@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Mr. Doug Aus
302 E Joppa Rd
Towson, MD 21286
443-286-8190

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Doug Demeo <douglasanthony2@gmail.com> Wed, Sep 19, 2018 at 12:36 PM
Reply-To: douglasanthony2@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Mr. Doug Demeo
830 Bayner Road
Essex, MD 21221
609-954-5581

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Elizabeth Harnois <eaharnois@verizon.net> Mon, Sep 17, 2018 at 12:34 PM
Reply-To: eaharnois@verizon.net
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Ms. Elizabeth Harnois
Terrace Way
Towson, MD 21204
410-908-1830

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Ellen Egger <circeravaine@gmail.com> Sun, Sep 16, 2018 at 1:23 PM
Reply-To: circeravaine@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

On a personal note, as a resident of SoWeBo who's never had breathing or respiratory problems (not even seasonal allergies) I have this year been diagnosed with asthma. I've been a resident for four~ years and have noticed a steady decline in my breathing ability since then. I would love to see a solution that doesn't put undue strain on what is clearly a necessary organization, but that also prioritizes the public health of the city of Baltimore.

Miss. Ellen Egger
401 S Fremont Ave
Apt B
Baltimore, MD 21230
4102745526

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comment on proposed incinerator NOx regulation, COMAR 26.11.08

Emily Bryson <ecbryson@gmail.com> Fri, Sep 21, 2018 at 12:15 PM
To: "randy.mosier@maryland.gov" <randy.mosier@maryland.gov>

Dear Mr. Randy Moser,

My name is Emily Bryson and I am a nurse in the Pediatric Emergency room at The University of Maryland Medical Center in downtown Baltimore. I live downtown as well just a mile north of the hospital.

I would like to thank the Maryland Department of the Environment for the opportunity to share our thoughts on this matter. I also would like to take this time to urge MDE to approve the proposed NOx RACT standards for incinerators that will require the Wheelabrator Baltimore incinerator (BRESCO) to meet a NOx limit of 150 ppm on a 24-hour average starting on May 1, 2019 and a NOx limit of 145 ppm on a 30-day average starting on May 1, 2020. This is important to me as a nurse and N active resident living and breathing in Baltimore. It is worth noting that an expert evaluation of control tests and studies produced through the stakeholder process concluded that BRESCO could meet a 135-ppm daily NOx limit today just by optimizing its existing control technology.

Everyday I see children and adults living with asthma made worse by the air quality and climate in the city and more broadly, in Maryland. Baltimore city has high rates of asthma and it frequently contributes to children missing school. Often times children with asthma need to take multiple medications to control it and this can create and economc hardship for families already struggling to make ends meet. Additionally, when families and parents need to take time off of work to be in the hospital and at doctors appointments it creates stress for them. With better air quality and regulation of NOx, the lives of these children would be healthier, longer and better quality overall. It is time for Maryland to be a leader in environmental justice and be accountable to the families living with these conditions.

I am thankful that you have given this opportunity to residents and i truly appreciate your time. Please consider the health and lives of all Marylanders as you move through this process.
Many thanks,
Emily Bryson

2200 WILSON BOULEVARD
SUITE 310
ARLINGTON, VA 22201

WWW.ENERGYRECOVERYCOUNCIL.ORG

Statement of Ted Michaels
President, Energy Recovery Council
Before the Maryland Department of the Environment
September 21, 2018

RE: COMAR 26.11.08 Control of Incinerators

My name is Ted Michaels and I serve as President of the Energy Recovery Council (ERC). ERC supports the adoption of the new NOx RACT requirements reducing emissions from Maryland's two large waste-to-energy facilities, as both facilities are a clean, renewable, efficient, and economical form of energy production that has long been a proven and effective means of managing post-recycled waste within the State.

ERC represents those engaged in the waste-to-energy (WTE) industry, including municipalities that rely upon this important technology for safe, effective trash disposal and the generation of clean, renewable energy. ERC members that operate facilities in Maryland are Covanta Energy and Wheelabrator Technologies Inc. Maryland's two existing waste-to-energy facilities, located in the City of Baltimore and Montgomery County, generate 123 megawatts of electricity from the disposal of more than 4,050 tons of trash per day.

The U.S. EPA states on its website that "converting non-recyclable waste materials into electricity and heat generates a renewable source and reduces carbon emissions by offsetting the need for energy from fossil fuels sources and reduces methane generation from landfills."[1]
Moreover, the renewable status of these facilities allows them to generate renewable energy credits, which helps Baltimore City, Baltimore County, and Montgomery County communities to reduce the cost of processing waste and promote recycling.

These facilities provide Maryland communities safe, clean, and effective trash disposal services and are committed to optimizing their operations to meet and outperform federal and state environmental standards and regulations. They also should be commended for their voluntary participation in the Maryland Department of the Environment pilot Peak Ozone Day Reduction Program as further evidence of their commitment to helping the State to meet its air quality goals.

WTE is Locally-Generated Renewable Power
WTE is a clean, renewable, efficient, and economical form of energy production and post-recycled waste disposal that helps the U.S divert waste from landfills while producing renewable energy to reduce our reliance on fossil fuels to generate electricity.

[1] U.S. EPA. (n.d.) *Sustainable Materials Management: Non-Hazardous Materials and Waste Management Hierarchy, Energy Recovery* [website] Retrieved September 14, 2018, from http: https://www.epa.gov/smm/sustainable-materials-management-non-hazardous-materials-and-waste-management-hierarchy#Energy_Recovery

Modern WTE facilities use proven technology to take every day post-recycled waste and convert it into clean, renewable energy through controlled combustion of mixed municipal solid waste in large power boilers. The resulting heat energy produces steam, which turns a turbine-generator to produce electricity. The process of converting waste into energy is a key part of an integrated materials management plan that focuses on waste reduction, reuse, recycling, and recovery of energy. The U.S. EPA has said that WTE facilities produce electricity "with less environmental impact than almost any other source of electricity" and "communities greatly benefit from dependable, sustainable capacity of municipal WTE plants."[2] A study of WTE technologies by the Joint Institute for Strategic Energy Analysis for the U.S. Department of Energy concluded that WTE is a "refined, clean, well-managed application for energy production."[3] WTE meets the two basic criteria for establishing what a renewable energy resource is—its fuel source (trash) is sustainable and indigenous. WTE facilities recover valuable energy from trash after efforts to "reduce, reuse, and recycle" have been implemented by households and local governments.

WTE has been recognized as renewable by the federal government for nearly thirty years under a variety of statutes, regulations, and policies, including the Public Utility Regulatory Policies Act of 1978; the Biomass Research and Development Act of 2000; the Federal Energy Policy Act of 2005; Executive Order 13423 of 2007; Executive Order 13514 of 2009; the Pacific Northwest Power Planning and Conservation Act; and Section 45 of the Internal Revenue Code.

Many other states have also recognized WTE as renewable. Thirty-one states, the District of Columbia, and two territories have defined WTE as renewable energy in various state statutes and regulations, including renewable portfolio standards. The renewable status has enabled WTE plants to generate credits for sale in renewable energy trading markets, as well as to the federal government through competitive bidding processes, which helps sustain WTE as a viable solid waste disposal option for Maryland municipalities. In the case of publicly owned facilities, the sale of renewable energy credits creates revenue for local governments that own WTE facilities, helping to reduce a community's cost of processing waste and promoting recycling.

WTE Generates Baseload Electricity with High Availability

WTE plants supply much needed base load renewable electricity to the nation's power grid. WTE facilities operate 365 days a year, 24 hours a day and can operate under severe conditions. For example, WTE facilities have continued to operate during hurricanes. In the aftermath of the storms, they have provided clean, safe and reliable waste disposal and energy generation. WTE facilities operate at an average of greater than 90% availability, which is higher than many forms of energy production.[4]

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[2] US Environmental Protection Agency. Letter from Assistant Administrators Marianne Horinko, Office of Solid Waste and Emergency Response, and Jeffery Holmstead, Office of Air and Radiation to Integrated Waste Services Association (2003).

[3] Joint Institute for Strategic Energy Analysis. 2013. Waste Not, Want Not: Analyzing the Economic and Environmental Viability of Waste-to-Energy (WTE) Technology for Site-Specific Optimization of Renewable Energy Options. Technical Report NREL/TP-6A50-52829.

[4] Energy Recovery Council. Waste Not, Want Not. www.wte.org/userfiles/file/Waste%20Not%20Want%20Not.pdf (last accessed 01.31.14)

WTE Reduces Greenhouse Gases

EPA scientists, in a prominent peer reviewed paper, concluded WTE facilities reduce GHG emissions relative to even those landfills equipped with energy recovery systems.[5] In addition, many other governmental and nongovernmental organizations have formally recognized WTE for its role in reducing world-wide GHG emissions including the:

- Intergovernmental Panel on Climate Change ("IPCC") called WTE a "key GHG mitigation technology",[6]
- World Economic Forum (WEF) which identified WTE as one of eight renewable energy sources expected to make a significant contribution to a future low carbon energy system,
- European Union,[7,8]
- U.S. Conference of Mayors, which adopted a resolution in 2005 endorsing the U.S. Mayors Climate Protection Agreement, which identifies WTE as a clean, alternative energy source which can help reduce GHG emissions. As of today, 1,060 mayors have signed the agreement.
- Clean Development Mechanism of the Kyoto Protocol,[9]
- Voluntary carbon markets,[10] and
- Center for American Progress, which promotes the use of WTE as an important waste management method that can decrease greenhouse gases by reducing emissions that would otherwise occur from landfills and fossil-fuel power plants.[11]

WTE GHG reductions are quantified using a life cycle assessment (LCA) approach that includes GHG reductions from avoided methane emissions from landfills, WTE electrical generation that offsets or displaces fossil-fuel based electrical generation, and the recovery of metals for recycling. Life cycle emission analysis show that WTE facilities actually reduce the amount of greenhouse gases expressed as CO2 equivalents (GHGs or CO2e) in the atmosphere by approximately 1 ton for every ton of municipal solid waste (MSW) combusted.

---

[5] Kaplan, P.O., J. DeCarolis, S. Thorneloe, Is It Better to Burn or Bury Waste for Clean Electricity Generation? *Environ. Sci. Technol.* 2009, 43, 1711-1717. http://pubs.acs.org/doi/abs/10.1021/es802395e

[6] WTE identified as a "key mitigation measure" in IPCC, "Climate Change 2007: Synthesis Report. Contribution of Work Groups I, II, and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change" [Core Writing Team, Pachauri, R.K and Reisinger, A. (eds.)]. IPCC, Geneva, Switzerland, 104 pp. Available at: http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_synthesis_report.htm

[7] EU policies promoting WTE as part of an integrated waste management strategy have been an overwhelming success, reducing GHG emissions over 72 million metric tonnes per year, see European Environment Agency, *Greenhouse gas emission trends and projections in Europe 2009: Tracking progress towards Kyoto targets* *http://www.eea.europa.eu/publications/eea_report_2009_9*

[8] European Environmental Agency (2008) Better management of municipal waste will reduce greenhouse gas emissions. Available at: http://www.eea.europa.eu/publications/briefing_2008_1/EN_Briefing_01-2008.pdf

[9] Clean Development Mechanism Executive Board: "Approved baseline and monitoring methodology AM0025: Avoided emissions from organic waste through alternative waste treatment processes." Available at: http://www.cdm.unfcc.int/methodologies/DB/3STKBX3UY84WXOQWIO9W7J1B40FMD

[10] Verified Carbon Standard Project Database, http://www.vcsprojectdatabase.org/ See Project ID 290, Lee County Waste to Energy Facility 2007 Capital Expansion Project VCU, and Project ID 1036 Hillsborough County Waste to Energy (WtE) Facility 2009 Capital Expansion Unit 4.

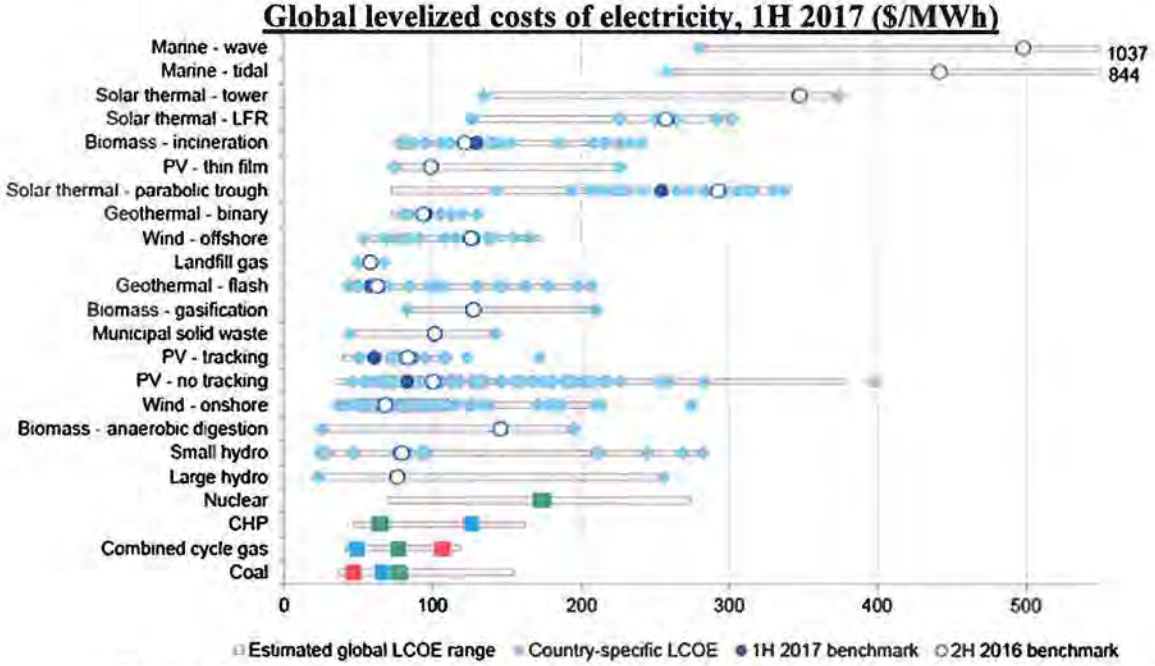
[11] Center for American Progress (2013) *Energy from Waste Can Help Curb Greenhouse Gas Emissions* http://www.americanprogress.org/wp-content/uploads/2013/04/EnergyFromWaste-PDF1.pdf

New energy from waste capacity is eligible to generate carbon offsets based on a Clean Development Mechanism offset methodology through the Verified Carbon Standard (VCS). To date, two facilities in North America have progressed through the carbon offset generation process, successfully validating and verifying their projects in accordance with the standard. The Lee County, Florida facility began generating carbon offsets with the 2007 emissions year, and the Hillsborough County, Florida facility has verified carbon offsets beginning with the 2009 emissions year. The credits are associated with the avoidance of landfill methane and displaced grid-connected fossil fuel electricity generation.

WTE is a Cost-Competitive Source of Renewable Energy and GHG Reduction

The U.S. Department of Energy's Energy Information Administration (EIA) uses Levelized Cost of Energy (LCOE) to measure the competitiveness of a particular energy resource. EIA defines LCOE as:

> *"Levelized cost is often cited as a convenient summary measure of the overall competitiveness of different generating technologies. Levelized cost represents the present value of the total cost of building and operating a generating plant over an assumed financial life and duty cycle, converted to equal annual payments and expressed in terms of real dollars to remove the impact of inflation. Levelized cost reflects overnight capital cost, fuel cost, fixed and variable O&M cost, financing costs, and an assumed utilization rate for each plant type."*



Source: Bloomberg New Energy Finance/Business Council for Sustainable Energy *Sustainable Energy in America 2018 Factbook.*

Based on EIA data, the average LCOE from a new WTE facility is approximately $85 per megawatt hour, making it cheaper than or competitive with other sources of electricity. This

figure is comparable to other recently published values for WTE's levelized cost, including those in a recent peer-reviewed article by Duke University scientists ($94 / MWh)[12] and a 2018 report coauthored by Bloomberg and the Business Council for Sustainable Energy ($48 - $130 / MWh) (see figure above).

WTE Provides Green Jobs and Boosts Local Economies

The revenues, employment, and labor earnings derived from managing waste, producing energy, and recycling metals are the direct economic benefits of WTE. In addition, these activities generate indirect impacts. Employees at WTE plants are technically skilled and are compensated at a relatively high average wage. As a result, WTE facilities provide stable, long-term, well-paying jobs, while simultaneously pumping dollars into local economies through the purchase of local goods and services and the payment of fees and taxes.

Conclusion

For the reasons provided in this statement, the Energy Recovery Council supports the adoption of reasonable emission standards that protect human health and the environment, while ensuring that Maryland may continue to rely on waste-to-energy to avoid landfilling and to displace fossils fuel consumption.

[12] Chadel, MK, G Kwok, LB Jackson, LF Pratson (2012), The Potential of waste-to-energy in reducing GHG emissions, *Carbon Management* (3)2, 133-144.

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Eszter Sapi <esztersapi@gmail.com>
Reply-To: esztersapi@gmail.com
To: randy.mosier@maryland.gov

Fri, Sep 21, 2018 at 2:15 PM

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Eszter Sapi
1913 Fairbank Rd
Baltimore, MD 21209

ATTACHMENT A

EXPERT REPORT

On

NOx Emissions from the Wheelabrator Baltimore Municipal Waste Incinerator in Baltimore City, owned and operated by Wheelabrator Baltimore, L.P. ("Wheelabrator")

by

Dr. Ranajit (Ron) Sahu, Consultant[1]

May 10, 2018

Introduction

In November of 2017, the Maryland Department of the Environment (MDE) shared with public stakeholders a draft regulation, dated November 17, 2017, that would revise Maryland's standards limiting emissions of nitrogen oxides (NOx) from large municipal waste combustors. The proposed revisions are to Title 26 Department of the Environment, Subtitle 11 Air Quality, Chapter 08 Control of Incinerators of COMAR. There are two large municipal waste combustors in Maryland, the larger being the Wheelabrator facility in Baltimore City.

I was asked to review certain materials relating to the Wheelabrator Baltimore municipal waste combustor and to give my opinion on what is achievable in terms of NOx reduction at this facility. Specifically, I reviewed the following materials in the preparation of this report: (1) the 2017 Fuel Tech Report on optimization of the existing controls at the facility; (2) the 2016 Quinapoxet Report; on optimization of the existing controls at the facility; (3) 1-hour averaged NOx CEMS data collected at the three boilers at the Wheelabrator facility for the calendar year 2017; [2] and (4) the November 2017 draft regulation circulated by MDE. As discussed in more detail below, I have previously commented on an optimization study performed in 2016 (the Quinapoxet Study).

My observations and conclusions based on this review are set forth below.

[1] Resume provided in Attachment A.

[2] In early 2018, MDE began making hourly CEMS data from the Wheelabrator facility available to the public online. The data that I reviewed is available under Special Studies, Wheelabrator Annual CEM Data Reports, Data, at the following link: http://mde.maryland.gov/programs/Air/Pages/ARAResearch.aspx.

NOx Reasonably Achievable Control Technology (RACT) for the Wheelabrator Baltimore Facility

Wheelabrator operates a municipal waste combustion facility in Baltimore. As noted in its application for its Title V permit application, submitted in 2006:

> "The facility is a municipal solid waste resource recovery facility (SIC Code 4953). It consists of three municipal waste combustors that generate steam…."

Each of these three combustors (hereafter "boilers" or "Units") and noted as Boiler 1 (Unit 1), Boiler 2 (Unit 2), and Boiler 3 (Unit 3), respectively – are identical as described by Wheelabrator in its 2006 application:

> "…750 ton per day Wheelabrator-Frye mass burn waterwall municipal waste combustor equipped with SNCR, SDA, ESP and activated carbon injection systems. Combustion gases are exhausted through a stack…that contains three flues (one for each of the three combustors)…."

In its November 2017 proposed regulation for the Wheelabrator facility, MDE effectively proposed a NOx RACT level with specified numerical limits (as noted below) followed by a potential future lower NOx limit– the latter to be developed based on the results of a feasibility study to be submitted by Wheelabrator to MDE in 2020. The November 2017 proposed regulation requires that the analysis will be prepared by an independent third party.

The proposed NOx RACT for Wheelabrator set forth in the November 2017 rule is:

A. a 24-hour block average emission rate[3] of 150 parts per million (ppmv);

and

B. a 145 ppmv rate over a 30-day period – both corrected to 7% oxygen.[4]

Per the proposed RACT, the 150 ppmv level is to be achieved by 2019 and the 145 ppmv level is to be achieved by 2020. The November 17, 2017 draft regulation also includes section E, "Additional NOx Emission Control Requirements," which states that "(1) Not

[3] The use of the term, "emission rate" to describe the proposed RACT level, is, in my opinion, inaccurate. Typically emission rate denotes the mass emissions of a pollutant (i.e., in pounds, grams, tons, etc.) either per unit time (i.e., gram/second, pound/hour, ton/year, etc.) or per unit of process input (i.e., lb/million Btu of heat input, lb/ton of waste burned), or per unit of process output (i.e., lb/pound of steam generated), etc. The proposed NOx RACT levels – i.e., parts per million in the exhast gases, corrected to 7% oxygen, are, more properly, concentrations, not emission rates.

[4] In all instances in this Declarations, it should be assumed that NOx levels discussed are always corrected to the 7% oxygen basis, whether explicitly stated or otherwise.

later than January 1, 2020, the owner or operator of Wheelabrator Baltimore, Inc. shall submit a feasibility analysis for additional control of NOx emissions from the Wheelabrator Baltimore Inc. facility to the Department."

Optimizing SNCR at the Wheelabrator, Baltimore Facility

Briefly, in SNCR, a NOx-reducing reagent, such as ammonia or urea is injected into the exhaust gases from a boiler, within a specified gas temperature range (typically when the gas temperature is between 1800-2100 F). At Wheelabrator, urea is injected as liquid droplets using a number of injectors, all located in a single plane at each boiler. Urea converts to ammonia and some ammonia leaves the system. The ammonia that leaves the system is considered unreacted ammonia and is known as the "ammonia slip." The goal of SNCR is to reduce NOx while keeping ammonia slip to a low level. Details of the existing SNCR system at Wheelabrator are provided in the 2017 Fuel Tech Report which is discussed and quoted from extensively later in this document.

I am aware of at least two attempts at "optimizing" the performance of the existing SNCR systems at Wheelabrator since 2016. From February to March of 2016, Wheelabrator conducted an optimization study[5] ("Quinapoxet Study"). I have previously commented on the significant technical shortcomings of this study.[6] Nonetheless, and in spite of these shortcomings, this study showed that certain, modest NOx reductions were possible with additional urea flow and modification of SNCR configuration. More recently, Fuel Tech completed a 4 -day optimization study in early June 2017,[7] which was followed by additional optimization testing of all 3 boilers from June 12-14, 2017 and June 20-29, 2017.[8] I discuss the findings of this work in the next section.

Findings in the 2017 Fuel Tech Report

I note first that Fuel Tech was charged with optimizing the current SNCR controls at each boiler to achieve NOx levels below 150 ppm

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[5] Final Report NOx Control System Optimization at the Wheelabrator Baltimore WTE Facility, Quinapoxet Solutions, (undated, 2016), Quinapoxet Solutions.

[6] My comments on this optimization study are set forth in the Expert Report on NOx Emissions from the Wheelabrator Baltimore Municipal Waste Incinerator in Baltimore City, owned and operated by Wheelabrator Baltimore, L.P. ("Wheelabrator") by Dr. Ranajit (Ron) Sahu, Consultant, May 5, 2017.

[7] Bisnett, Michael, Fuel Tech, NOx Optimization Project Wheelabrator Baltimore Inc., Baltimore, Maryland Units 1,2 & 3, June 5-9. 2017 ("2017 Fuel Tech Report"). I received an incomplete pdf copy of the report with 24 pdf pages. The last page of the report (before two non-numbered pages containing emails) is noted as "Page 22 of 31."

[8] The data for the June 12-14 and 20-29 days was submitted to MDE separately from the Fuel Tech Report.

> "Fuel Tech Inc. (FTI) was contracted by Wheelabrator to conduct SNCR system optimization testing at their Waste to Energy (WTE) facility located in Baltimore, Maryland. The objective was to obtain provide further optimization of the SNCR system to reduce NOx levels below 150 ppmdc (corrected to 7%02) while minimizing ammonia slip…"[9]

Briefly, Fuel Tech described the optimization details as follows:

> "For this optimization program, additional changes were made to the existing SNCR equipment to allow for more flexibility for enhancing NOx removal. These changes primarily included installation of new NOx injector tips with 30 deg up angle cone spray and use of alternate rear furnace wall injector ports. The use of the additional rear wall injector ports and modified injector tips enhanced the coverage of the injectors allowed for more flexibility to optimize the SNCR system to control NOx below the 150 ppmdc (corrected to 7% 02) target while simultaneously maintaining low ammonia slip levels."[10]

Admittedly, the Fuel Tech optimization work was of short duration, mainly indicating (and proving, as I show later) that lower than 150 ppm NOx levels can be achieved, even on a short-term, i.e., hourly basis at each boiler. Thus, it was a proof-of-concept study.

As far as baseline NOx levels during the 2017 Fuel Tech study, Fuel Tech notes the following:

> "Baseline NOx values on all 3 units were close to previous optimization testing levels of around 200+ ppmdc. Overall the during this testing period the baseline varied in the range of 190 to 220 ppmdc It appeared that earlier in the day the baseline was lower and increased during the day. The plant confirmed that the NOx would increase at times and but the mechanism or its consistency was not understood."[11]

The allusion to "previous optimization testing" is not entirely clear. It could be referencing the 2016 Quinapoxet Study, which did observe baseline levels around 200 ppm. I note that after years of experience with its boilers, it is troubling that Wheelabrator still does not have a reasonable understanding of the NOx levels from its boilers, as evidenced by Fuel Tech's comment in the last sentence above.

Fuel Tech reports the results of its optimization work at Unit 3 (the first unit at which the work was done on June 6, 2017), as follows:

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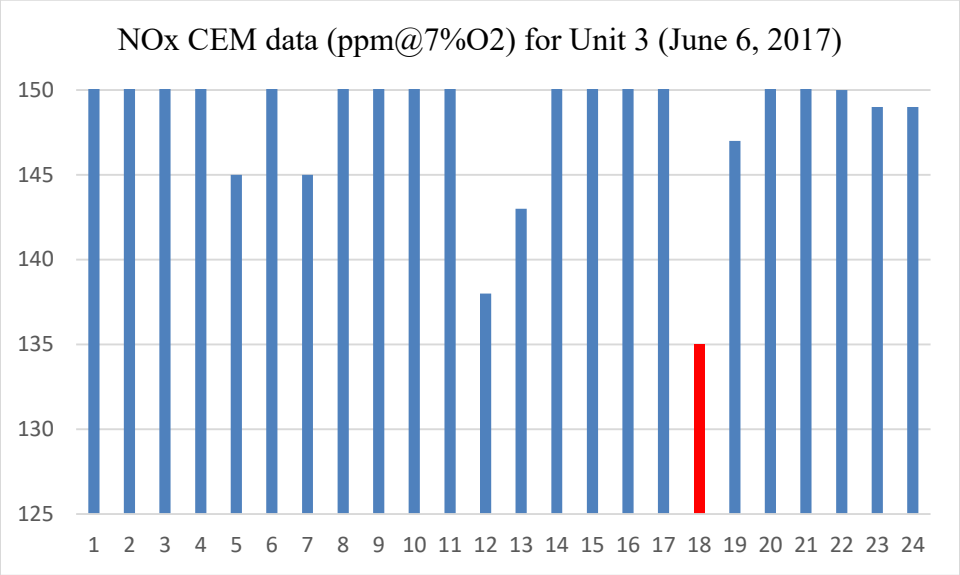
[9] 2017 Fuel Tech Report, p. 3.

[10] 2017 Fuel Tech Report, p. 3.
[11] 2017 Fuel Tech Report, p. 6.

> "The results were very good. Using the same urea dosage of 15 gph, with an NSR of 1.14, the NOx reduction increased from 37.5 to 42.7%, utilization increased from 32.9% to 37.4% and the NOx dropped to 130 ppmdc. Individual injector water flow was 1.33 gpm at an air pressure of 40 psig. The measured ammonia slip increased slightly to 3.3 ppm from 1.1 ppm and stack observation indicated there was no visible plume. Making the change to the angled up tips showed that releasing the urea higher in the furnace with the right injector configuration was very beneficial….The initial Unit 3 optimization results were very positive and predictable and, as such, were used as the starting point for further optimization of the other 2 units."[12]

Shown below are the hourly NOx data for Unit 3 from the CEMS for June 6, 2017. It confirms that levels as low as 135 ppm[13] on an hourly basis, were obtained at Unit 3 during the optimization.



At Unit 1, the next Unit subjected to optimization, on June 7, 2017, Fuel Tech describes the results as follows:

> "A baseline NOx value was obtained prior to the first test. For the 1st test NOx was kept close to 140 ppmdc with 15 gph of urea and a measured slip of 1.7 ppm (internal citation omitted) and utilization rate of 36.5%. This proved that the final configuration from Unit 3 carried over successfully to Unit 1 as SNCR performance was very good. (internal

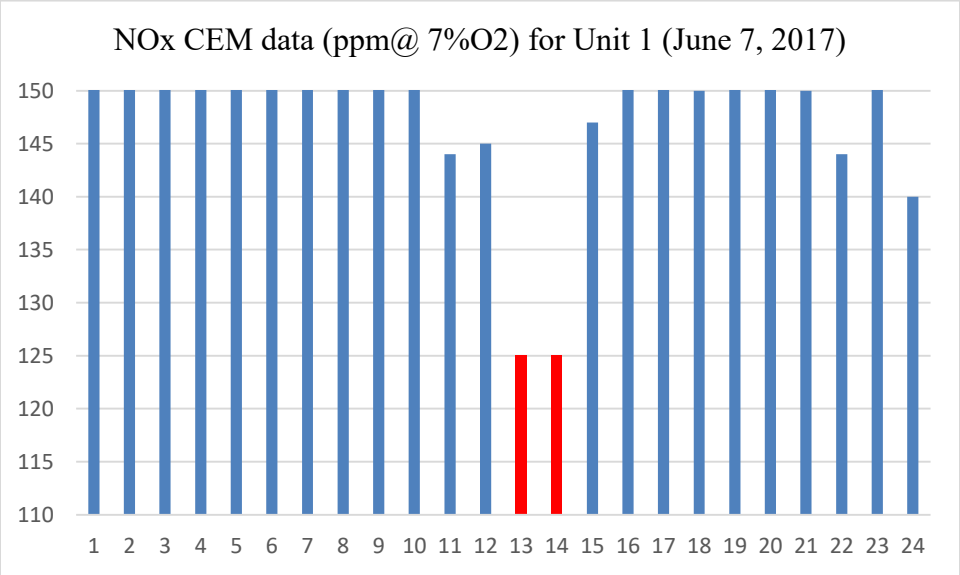
[12] 2017 Fuel Tech Report, p. 11-12.

[13] I do note that, while the Fuel Tech Report shows a NOx level as low as 130 ppm, the CEMS data for that day do not show that level. This discrepancy may simply be due to the different instruments used to measure the NOx levels (i.e., Fuel Tech's instrument and the CEM).

citation omitted). Given the successful duplication of results on Unit 1, further optimization was done to this configuration to evaluate the impact on SNCR performance….

Increasing the urea dosage (internal citation omitted) from 15 to 20 gph was done to determine if there is a point where increasing the urea dosage will not lead to a reasonable increase in the NOx reduction with the 6 injector configuration and essentially determining a point of diminishing returns. Increasing to 20 gph of urea reduced NOx to 130 ppmdc but the utilization dropped from 34.7 to 32.9% while ammonia slip increased slightly from 1.7 to 2.7 ppm evidence that urea rates above 20 gph, ammonia slip would increase very quickly."[14]

Shown below are the hourly NOx levels measured by the CEM on Unit 1. It confirms that levels as low as 125 ppm were obtained during the optimization.[15]



Finally, for Unit 2, the last unit optimized by Fuel Tech on June 8, 2017, Fuel Tech describes the result as follows:

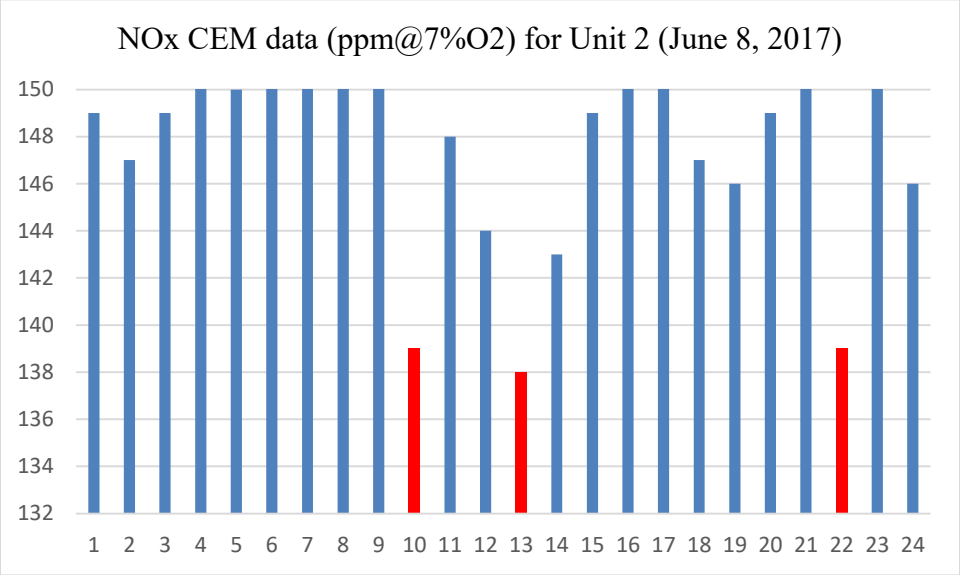
"Starting up the SNCR system for the first set of tests went without incident and the NOx was reduced to 140 ppmdc. (Figure 17) This was achieved with 4 injectors at 1 gpm water flow, 15 gph urea flow, and 40 psig air pressure. NOx levels were about 140 ppmdc and ammonia slip

[14] 2017 Fuel Tech Report, p. 14.

[15] As in the case of Unit 3, there appears to be a slight discrepancy between the NOx levels discussed in the Fuel Tech Report and the NOx CEM. For Unit 2, the CEM showed a value of 125 ppm, while the Fuel Tech Report notes 130 ppm.

was 2.9 ppm….Increasing the urea from 15 to 20 gph reduced NOx to about 135 ppmdc but the slip increases to 3.9 ppm."[16]

Similar to the data presented above for the other two units, I show below the NOx CEM data for Unit 2 for June 8, 2017. This data shows levels lower than 140 ppm with a low of 138 ppm.



Summarizing its results and relating it to the objective of the study, Fuel Tech stated:

"The results of FTI's short term SNCR optimization testing indicated that use of 30 deg up angled injector tips and injector total liquid flow of 1 gpm provided additional capability for SNCR systems to achieve and maintain NOx emission level of 150 ppmdc with minimal ammonia slip."[17]

Thus, it is clear that, a level of 150 ppm NOx can be achieved today, at each unit at Wheelabrator. In fact, as shown above, hourly levels in the 125-140 range were achievable at each unit during mid-2017.

The proposed RACT limits for Wheelabrator include averaging times longer than hourly – i.e, 150 ppm using a block average of 24 hours and 145 ppm using a 30 day average. The longer the averaging time, the more the ability to smooth out variations. Given these proposed averaging times, and reviewing the results of the 2017 Fuel Tech optimization work, it is my opinion that the proposed RACT levels can be lowered – likely from 150

[16] 2017 Fuel Tech Report, p. 18.

[17] 2017 Fuel Tech Report, p. 21.

down to a level closer to 135 ppm for the 24 hour block average and from 145 down to a level of 130 ppm for the 30-day averaging period.

As the optimization testing discussed in the 2017 Fuel Tech Report was of limited duration, it is my opinion that longer term testing performed using a more methodical approach would likely have shown the Wheelabrator facility's ability to achieve the 130-135 ppm levels discussed above on a more consistent basis is possible right now. These tests would likely have shown the facility's ability to achieve lower NOx levels on a longer term and more consistent basis if Wheelabrator had continued the adjustments made by Fuel Tech in June 2017 at each of its boilers with the express goal of achieving 130/135 ppm levels.

In addition, Wheelabrator should also have monitored and run all necessary feedback loops involving local NOx concentrations near the SNCR injection points, gas temperature in the SNCR injection plane, and ammonia slip. While Fuel Tech tested and showed the ability for automatic SNCR control to meet the 150 ppm setpoint, lower setpoints were not tested to explore the limits of the system. The use of automatic feedback controls at lower NOx setpoints should allow the SNCR system to consistently meet the lower 130/135 ppm levels on a longer term basis.

Wheelabrator should also have continued to optimize injector configurations and parameters as needed to achieve, maintain, and further reduce NOx at each of the boilers along the lines of the adjustments described in the conclusion of the 2017 Fuel Tech Report. Additional SNCR adjustments mentioned include using additional injectors, increasing total liquid flow to injectors, and changing the atomizing air pressure. The Fuel Tech test results indicate that even further NOx reduction may be possible, as the choice to decrease total liquid flow through each injector led to sub-optimal results in terms of NOx concentration, NOx reduction percentage and utilization percentage. Urea flow was also constrained to 20 gph, limiting the amount of information available on additional reduction and corresponding ammonia slip.

Importantly, it is clear to me that a limit of 135 ppm on a 24-hour basis and 130 ppm on a 30-day basis can be achieved <u>now</u> (and that more methodical optimization testing would have shown this to be the case) as opposed to the future dates in MDE's proposed RACT – i.e., 2020 for the 145 ppm 30-day average and 2019 for the 150 ppm 24-hour block average.

<u>Performance Levels After the 2017 Fuel Tech Study</u>

I reviewed the 2017 hourly CEM NOx data for each unit to ascertain if Wheelabrator had attempted to conduct a long-term assessment of the optimization work, as recommended by Fuel Tech.[18] Emails and data submitted to MDE by Wheelabrator show that Wheelabrator conducted longer-term testing from June 12- 14, 2017 and June 20-29, 2017. However, this is still a relatively brief time period for such testing and my review

of the hourly data shows that the reductions achieved during the optimization periods were not sustained afterward. Also, the June 12-14, 2017 and June 20-29, 2017 data did not include additional important parameters such as ammonia slip, etc. which were discussed in the Fuel Tech Report covering the June 6-8, 2017 tests.

Shown below are the NOx levels, for each Unit:

- on the days of the optimization tests for that unit, including the initial testing date for each boiler and the subsequent dates (June 12-14 and 20-29, during which all boilers were tested);
- after the optimization tests (i.e., from June 30, 2017, the date on which all of optimization testing ended, until December 31, 2017, after the last day for which CEM data was available); and
- before the optimization testing (i.e., from January 1, 2017, till the day prior to the first optimization day for the respective unit).

Unit 1 Average Hourly NOx (June 7, June 12-14, June 20-29, 2017), ppm	147.1
Unit 1 Average Hourly NOx (June 30 - December 31, 2017), ppm	164.8
Unit 1 Average Hourly NOx (January 1 - June 6, 2017), ppm	158.1

Unit 2 Average Hourly NOx (June 8, June 12-14, June 20-29, 2017), ppm	148.1
Unit 2 Average Hourly NOx (June 30 - December 31, 2017), ppm	165.1
Unit 2 Average Hourly NOx (January 1 - June 7, 2017), ppm	168.6

Unit 3 Average Hourly NOx (June 6, June 12-14, June 20-29, 2017), ppm	144.9
Unit 3 Average Hourly NOx (June 30 - December 31, 2017), ppm	165.1
Unit 3 Average Hourly NOx (January 1 - June 5, 2017), ppm	167.6

It is clear, from Wheelabrator's own CEM data presented above that the lower NOx levels achieved during the optimization were not sustained after the optimization dates at each unit. Arguably, for Unit 1, post-optimization average NOx (164.8 ppm) was worse than the pre-optimization level (158.1 ppm), which was higher than the 147.1 ppm for the optimization dates. For Unit 2, while the post-optimization level (165.1 ppm) was a little lower than the pre-optimization level (168.6 ppm), it was considerably higher than the 148.1 ppm for the optimization periods. Similarly, for Unit 3, the post-optimization level of 165.1 ppm was slightly lower than the pre-optimization level of 167.6, but much higher than the level for the optimization (144.9 ppm) periods.

It is clear that Wheelabrator did not continue to sustain the lower levels achieved during the 2017 Fuel Tech optimization study.

Conclusions

Based on my review of prior optimization work on its current SNCR systems including the 2017 Fuel Tech study and my analysis of the 2017 hourly NOx CEMS data for each Unit, I reach the following conclusions:

A. that each of the three units at the Wheelabrator facility can reasonably achieve hourly NOx levels of 150 ppm today, if the existing SNCR systems at each Unit, as modified per the suggestions and descriptions in the 2017 Fuel Tech Report, were properly implemented and operated;

B. that, therefore, 24-hour and 30-day averaged NOx levels of less than 150 ppm should also be achievable today. It is my opinion, based on the data that a 24-hour block level of 135 ppm should be achievable today and that a 30-day average level of 130 ppm should be achievable today at each Unit using optimized, existing SNCR;

C. that, based on the observed NOx levels reported by Wheelabrator post-optimization via the NOx CEM at each Unit, it appears that Wheelabrator did not continue with the optimization of the existing SNCR systems as discussed in the 2017 Fuel Tech Report beyond June 29, 2017. This is consistent with there being no regulatory driver or requirement for Wheelabrator to do so;

D. that Wheelabrator should electronically report not just the hourly NOx (and SO2 and CO) hourly CEMS data are it is currently doing, but also the additional parameters that are listed in the Tables on Page 22 of the 2017 Fuel Tech Report; and, finally

E. notwithstanding all of the above pertaining to the interim NOx levels that can be obtained via the proper and optimized operation of the existing SNCR systems to meet the proposed RACT – it is my opinion, based on my understanding of the boilers at the facility, that I see no technical impediments to the implementation of the even-more NOx reducing technologies, such as SCR (or hybrid SNCR/SCR), in the appropriate locations along the gas paths at each of the boilers. SCR would provide significantly better NOx levels (around 50 ppm, assuming roughly 75% SCR NOx reduction efficiency, a lenient target), than compared to optimized SNCR at 130-135 ppm as noted above.

ATTACHMENT A

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CONSULTANT, ENVIRONMENTAL AND ENERGY ISSUES

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EXPERIENCE SUMMARY

Dr. Sahu has over twenty eight years of experience in the fields of environmental, mechanical, and chemical engineering including: program and project management services; design and specification of pollution control equipment for a wide range of emissions sources including stationary and mobile sources; soils and groundwater remediation including landfills as remedy; combustion engineering evaluations; energy studies; multimedia environmental regulatory compliance (involving statutes and regulations such as the Federal CAA and its Amendments, Clean Water Act, TSCA, RCRA, CERCLA, SARA, OSHA, NEPA as well as various related state statutes); transportation air quality impact analysis; multimedia compliance audits; multimedia permitting (including air quality NSR/PSD permitting, Title V permitting, NPDES permitting for industrial and storm water discharges, RCRA permitting, etc.), multimedia/multi-pathway human health risk assessments for toxics; air dispersion modeling; and regulatory strategy development and support including negotiation of consent agreements and orders.

He has over twenty five years of project management experience and has successfully managed and executed numerous projects in this time period. This includes basic and applied research projects, design projects, regulatory compliance projects, permitting projects, energy studies, risk assessment projects, and projects involving the communication of environmental data and information to the public.

He has provided consulting services to numerous private sector, public sector and public interest group clients. His major clients over the past twenty five years include various trade associations as well as individual companies such as steel mills, petroleum refineries, cement manufacturers, aerospace companies, power generation facilities, lawn and garden equipment manufacturers, spa manufacturers, chemical distribution facilities, and various entities in the public sector including EPA, the US Dept. of Justice, several states, various agencies such as the California DTSC, various municipalities, etc.). Dr. Sahu has performed projects in all 50 states, numerous local jurisdictions and internationally.

In addition to consulting, Dr. Sahu has taught numerous courses in several Southern California universities including UCLA (air pollution), UC Riverside (air pollution, process hazard analysis), and Loyola Marymount University (air pollution, risk assessment, hazardous waste management) for the past seventeen years. In this time period he has also taught at Caltech, his alma mater (various engineering courses), at the University of Southern California (air pollution controls) and at California State University, Fullerton (transportation and air quality).

Dr. Sahu has and continues to provide expert witness services in a number of environmental areas discussed above in both state and Federal courts as well as before administrative bodies (please see Annex A).

EXPERIENCE RECORD

2000-present **Independent Consultant.** Providing a variety of private sector (industrial companies, land development companies, law firms, etc.) public sector (such as the US Department of Justice) and public interest group clients with project management, air quality consulting, waste remediation and management consulting, as well as regulatory and engineering support consulting services.

1995-2000 Parsons ES, **Associate, Senior Project Manager and Department Manager for** Air Quality/Geosciences/Hazardous Waste Groups, Pasadena. Responsible for the management of a group of approximately 24 air quality and environmental professionals, 15 geoscience, and 10 hazardous waste professionals providing full-service consulting, project management, regulatory compliance and A/E design assistance in all areas.

Parsons ES, **Manager for Air Source Testing Services**. Responsible for the management of 8 individuals in the area of air source testing and air regulatory permitting projects located in Bakersfield, California.

1992-1995 Engineering-Science, Inc. **Principal Engineer and Senior Project Manager** in the air quality department. Responsibilities included multimedia regulatory compliance and permitting (including hazardous and nuclear materials), air pollution engineering (emissions from stationary and mobile sources, control of criteria and air toxics, dispersion modeling, risk assessment, visibility analysis, odor analysis), supervisory functions and project management.

1990-1992 Engineering-Science, Inc. **Principal Engineer and Project Manager** in the air quality department. Responsibilities included permitting, tracking regulatory issues, technical analysis, and supervisory functions on numerous air, water, and hazardous waste projects. Responsibilities also include client and agency interfacing, project cost and schedule control, and reporting to internal and external upper management regarding project status.

1989-1990 Kinetics Technology International, Corp. **Development Engineer.** Involved in thermal engineering R&D and project work related to low-NOx ceramic radiant burners, fired heater NOx reduction, SCR design, and fired heater retrofitting.

1988-1989 Heat Transfer Research, Inc. **Research Engineer**. Involved in the design of fired heaters, heat exchangers, air coolers, and other non-fired equipment. Also did research in the area of heat exchanger tube vibrations.

EDUCATION

1984-1988 Ph.D., Mechanical Engineering, California Institute of Technology (Caltech), Pasadena, CA.

1984 M. S., Mechanical Engineering, Caltech, Pasadena, CA.

1978-1983 B. Tech (Honors), Mechanical Engineering, Indian Institute of Technology (IIT) Kharagpur, India

TEACHING EXPERIENCE

Caltech

"Thermodynamics," Teaching Assistant, California Institute of Technology, 1983, 1987.

"Air Pollution Control," Teaching Assistant, California Institute of Technology, 1985.

"Caltech Secondary and High School Saturday Program," - taught various mathematics (algebra through calculus) and science (physics and chemistry) courses to high school students, 1983-1989.

"Heat Transfer," - taught this course in the Fall and Winter terms of 1994-1995 in the Division of Engineering and Applied Science.

“Thermodynamics and Heat Transfer,” Fall and Winter Terms of 1996-1997.

U.C. Riverside, Extension

"Toxic and Hazardous Air Contaminants," University of California Extension Program, Riverside, California. Various years since 1992.

"Prevention and Management of Accidental Air Emissions," University of California Extension Program, Riverside, California. Various years since 1992.

"Air Pollution Control Systems and Strategies," University of California Extension Program, Riverside, California, Summer 1992-93, Summer 1993-1994.

"Air Pollution Calculations," University of California Extension Program, Riverside, California, Fall 1993-94, Winter 1993-94, Fall 1994-95.

"Process Safety Management," University of California Extension Program, Riverside, California. Various years since 1992-2010.

"Process Safety Management," University of California Extension Program, Riverside, California, at SCAQMD, Spring 1993-94.

"Advanced Hazard Analysis - A Special Course for LEPCs," University of California Extension Program, Riverside, California, taught at San Diego, California, Spring 1993-1994.

“Advanced Hazardous Waste Management” University of California Extension Program, Riverside, California. 2005.

Loyola Marymount University

"Fundamentals of Air Pollution - Regulations, Controls and Engineering," Loyola Marymount University, Dept. of Civil Engineering. Various years since 1993.

"Air Pollution Control," Loyola Marymount University, Dept. of Civil Engineering, Fall 1994.

“Environmental Risk Assessment,” Loyola Marymount University, Dept. of Civil Engineering. Various years since 1998.

“Hazardous Waste Remediation” Loyola Marymount University, Dept. of Civil Engineering. Various years since 2006.

University of Southern California

"Air Pollution Controls," University of Southern California, Dept. of Civil Engineering, Fall 1993, Fall 1994.

"Air Pollution Fundamentals," University of Southern California, Dept. of Civil Engineering, Winter 1994.

University of California, Los Angeles

"Air Pollution Fundamentals," University of California, Los Angeles, Dept. of Civil and Environmental Engineering, Spring 1994, Spring 1999, Spring 2000, Spring 2003, Spring 2006, Spring 2007, Spring 2008, Spring 2009.

International Programs

“Environmental Planning and Management,” 5 week program for visiting Chinese delegation, 1994.

“Environmental Planning and Management,” 1 day program for visiting Russian delegation, 1995.

“Air Pollution Planning and Management,” IEP, UCR, Spring 1996.

"Environmental Issues and Air Pollution," IEP, UCR, October 1996.

PROFESSIONAL AFFILIATIONS AND HONORS

President of India Gold Medal, IIT Kharagpur, India, 1983.

Member of the Alternatives Assessment Committee of the Grand Canyon Visibility Transport Commission, established by the Clean Air Act Amendments of 1990, 1992-present.

American Society of Mechanical Engineers: Los Angeles Section Executive Committee, Heat Transfer Division, and Fuels and Combustion Technology Division, 1987-present.

Air and Waste Management Association, West Coast Section, 1989-present.

PROFESSIONAL CERTIFICATIONS

EIT, California (#XE088305), 1993.

REA I, California (#07438), 2000.

Certified Permitting Professional, South Coast AQMD (#C8320), since 1993.

QEP, Institute of Professional Environmental Practice, since 2000.

CEM, State of Nevada (#EM-1699). Expiration 10/07/2017.

PUBLICATIONS (PARTIAL LIST)

"Physical Properties and Oxidation Rates of Chars from Bituminous Coals," with Y.A. Levendis, R.C. Flagan and G.R. Gavalas, *Fuel*, **67**, 275-283 (1988).

"Char Combustion: Measurement and Analysis of Particle Temperature Histories," with R.C. Flagan, G.R. Gavalas and P.S. Northrop, *Comb. Sci. Tech.* **60**, 215-230 (1988).

"On the Combustion of Bituminous Coal Chars," PhD Thesis, California Institute of Technology (1988).

"Optical Pyrometry: A Powerful Tool for Coal Combustion Diagnostics," *J. Coal Quality*, **8**, 17-22 (1989).

"Post-Ignition Transients in the Combustion of Single Char Particles," with Y.A. Levendis, R.C. Flagan and G.R. Gavalas, *Fuel*, **68**, 849-855 (1989).

"A Model for Single Particle Combustion of Bituminous Coal Char." Proc. ASME National Heat Transfer Conference, Philadelphia, **HTD-Vol. 106**, 505-513 (1989).

"Discrete Simulation of Cenospheric Coal-Char Combustion," with R.C. Flagan and G.R. Gavalas, *Combust. Flame*, **77**, 337-346 (1989).

"Particle Measurements in Coal Combustion," with R.C. Flagan, in "**Combustion Measurements**" (ed. N. Chigier), Hemisphere Publishing Corp. (1991).

"Cross Linking in Pore Structures and Its Effect on Reactivity," with G.R. Gavalas in preparation.

"Natural Frequencies and Mode Shapes of Straight Tubes," Proprietary Report for Heat Transfer Research Institute, Alhambra, CA (1990).

"Optimal Tube Layouts for Kamui SL-Series Exchangers," with K. Ishihara, Proprietary Report for Kamui Company Limited, Tokyo, Japan (1990).

"HTRI Process Heater Conceptual Design," Proprietary Report for Heat Transfer Research Institute, Alhambra, CA (1990).

"Asymptotic Theory of Transonic Wind Tunnel Wall Interference," with N.D. Malmuth and others, Arnold Engineering Development Center, Air Force Systems Command, USAF (1990).

"Gas Radiation in a Fired Heater Convection Section," Proprietary Report for Heat Transfer Research Institute, College Station, TX (1990).

"Heat Transfer and Pressure Drop in NTIW Heat Exchangers," Proprietary Report for Heat Transfer Research Institute, College Station, TX (1991).

"NOx Control and Thermal Design," Thermal Engineering Tech Briefs, (1994).

“From Purchase of Landmark Environmental Insurance to Remediation: Case Study in Henderson, Nevada,” with Robin E. Bain and Jill Quillin, presented at the AQMA Annual Meeting, Florida, 2001.

“The Jones Act Contribution to Global Warming, Acid Rain and Toxic Air Contaminants,” with Charles W. Botsford, presented at the AQMA Annual Meeting, Florida, 2001.

PRESENTATIONS (PARTIAL LIST)

"Pore Structure and Combustion Kinetics - Interpretation of Single Particle Temperature-Time Histories," with P.S. Northrop, R.C. Flagan and G.R. Gavalas, presented at the AIChE Annual Meeting, New York (1987).

"Measurement of Temperature-Time Histories of Burning Single Coal Char Particles," with R.C. Flagan, presented at the American Flame Research Committee Fall International Symposium, Pittsburgh, (1988).

"Physical Characterization of a Cenospheric Coal Char Burned at High Temperatures," with R.C. Flagan and G.R. Gavalas, presented at the Fall Meeting of the Western States Section of the Combustion Institute, Laguna Beach, California (1988).

"Control of Nitrogen Oxide Emissions in Gas Fired Heaters - The Retrofit Experience," with G. P. Croce and R. Patel, presented at the International Conference on Environmental Control of Combustion Processes (Jointly sponsored by the American Flame Research Committee and the Japan Flame Research Committee), Honolulu, Hawaii (1991).

"Air Toxics - Past, Present and the Future," presented at the Joint AIChE/AAEE Breakfast Meeting at the AIChE 1991 Annual Meeting, Los Angeles, California, November 17-22 (1991).

"Air Toxics Emissions and Risk Impacts from Automobiles Using Reformulated Gasolines," presented at the Third Annual Current Issues in Air Toxics Conference, Sacramento, California, November 9-10 (1992).

"Air Toxics from Mobile Sources," presented at the Environmental Health Sciences (ESE) Seminar Series, UCLA, Los Angeles, California, November 12, (1992).

"Kilns, Ovens, and Dryers - Present and Future," presented at the Gas Company Air Quality Permit Assistance Seminar, Industry Hills Sheraton, California, November 20, (1992).

"The Design and Implementation of Vehicle Scrapping Programs," presented at the 86th Annual Meeting of the Air and Waste Management Association, Denver, Colorado, June 12, 1993.

"Air Quality Planning and Control in Beijing, China," presented at the 87th Annual Meeting of the Air and Waste Management Association, Cincinnati, Ohio, June 19-24, 1994.

Annex A

Expert Litigation Support

A. Occasions where Dr. Sahu has provided Written or Oral testimony before Congress:

1. In July 2012, provided expert written and oral testimony to the House Subcommittee on Energy and the Environment, Committee on Science, Space, and Technology at a Hearing entitled "Hitting the Ethanol Blend Wall – Examining the Science on E15."

B. Matters for which Dr. Sahu has provided affidavits and expert reports include:

2. Affidavit for Rocky Mountain Steel Mills, Inc. located in Pueblo Colorado – dealing with the technical uncertainties associated with night-time opacity measurements in general and at this steel mini-mill.
3. Expert reports and depositions (2/28/2002 and 3/1/2002; 12/2/2003 and 12/3/2003; 5/24/2004) on behalf of the United States in connection with the Ohio Edison NSR Cases. *United States, et al. v. Ohio Edison Co., et al.*, C2-99-1181 (Southern District of Ohio).
4. Expert reports and depositions (5/23/2002 and 5/24/2002) on behalf of the United States in connection with the Illinois Power NSR Case. *United States v. Illinois Power Co., et al.*, 99-833-MJR (Southern District of Illinois).
5. Expert reports and depositions (11/25/2002 and 11/26/2002) on behalf of the United States in connection with the Duke Power NSR Case. *United States, et al. v. Duke Energy Corp.*, 1:00-CV-1262 (Middle District of North Carolina).
6. Expert reports and depositions (10/6/2004 and 10/7/2004; 7/10/2006) on behalf of the United States in connection with the American Electric Power NSR Cases. *United States, et al. v. American Electric Power Service Corp., et al.*, C2-99-1182, C2-99-1250 (Southern District of Ohio).
7. Affidavit (March 2005) on behalf of the Minnesota Center for Environmental Advocacy and others in the matter of the Application of Heron Lake BioEnergy LLC to construct and operate an ethanol production facility – submitted to the Minnesota Pollution Control Agency.
8. Expert Report and Deposition (10/31/2005 and 11/1/2005) on behalf of the United States in connection with the East Kentucky Power Cooperative NSR Case. *United States v. East Kentucky Power Cooperative, Inc*., 5:04-cv-00034-KSF (Eastern District of Kentucky).
9. Affidavits and deposition on behalf of Basic Management Inc. (BMI) Companies in connection with the BMI vs. USA remediation cost recovery Case.
10. Expert Report on behalf of Penn Future and others in the Cambria Coke plant permit challenge in Pennsylvania.

11. Expert Report on behalf of the Appalachian Center for the Economy and the Environment and others in the Western Greenbrier permit challenge in West Virginia.

12. Expert Report, deposition (via telephone on January 26, 2007) on behalf of various Montana petitioners (Citizens Awareness Network (CAN), Women's Voices for the Earth (WVE) and the Clark Fork Coalition (CFC)) in the Thompson River Cogeneration LLC Permit No. 3175-04 challenge.

13. Expert Report and deposition (2/2/07) on behalf of the Texas Clean Air Cities Coalition at the Texas State Office of Administrative Hearings (SOAH) in the matter of the permit challenges to TXU Project Apollo's eight new proposed PRB-fired PC boilers located at seven TX sites.

14. Expert Testimony (July 2007) on behalf of the Izaak Walton League of America and others in connection with the acquisition of power by Xcel Energy from the proposed Gascoyne Power Plant – at the State of Minnesota, Office of Administrative Hearings for the Minnesota PUC (MPUC No. E002/CN-06-1518; OAH No. 12-2500-17857-2).

15. Affidavit (July 2007) Comments on the Big Cajun I Draft Permit on behalf of the Sierra Club – submitted to the Louisiana DEQ.

16. Expert Report and Deposition (12/13/2007) on behalf of Commonwealth of Pennsylvania – Dept. of Environmental Protection, State of Connecticut, State of New York, and State of New Jersey (Plaintiffs) in connection with the Allegheny Energy NSR Case. *Plaintiffs v. Allegheny Energy Inc., et al.,* 2:05cv0885 (Western District of Pennsylvania).

17. Expert Reports and Pre-filed Testimony before the Utah Air Quality Board on behalf of Sierra Club in the Sevier Power Plant permit challenge.

18. Expert Report and Deposition (October 2007) on behalf of MTD Products Inc., in connection with *General Power Products, LLC v MTD Products Inc*., 1:06 CVA 0143 (Southern District of Ohio, Western Division) .

19. Expert Report and Deposition (June 2008) on behalf of Sierra Club and others in the matter of permit challenges (Title V: 28.0801-29 and PSD: 28.0803-PSD) for the Big Stone II unit, proposed to be located near Milbank, South Dakota.

20. Expert Reports, Affidavit, and Deposition (August 15, 2008) on behalf of Earthjustice in the matter of air permit challenge (CT-4631) for the Basin Electric Dry Fork station, under construction near Gillette, Wyoming before the Environmental Quality Council of the State of Wyoming.

21. Affidavits (May 2010/June 2010 in the Office of Administrative Hearings))/Declaration and Expert Report (November 2009 in the Office of Administrative Hearings) on behalf of NRDC and the Southern Environmental Law Center in the matter of the air permit challenge for Duke Cliffside Unit 6. Office of Administrative Hearing Matters 08 EHR 0771, 0835 and 0836 and 09 HER 3102, 3174, and 3176 (consolidated).

22. Declaration (August 2008), Expert Report (January 2009), and Declaration (May 2009) on behalf of Southern Alliance for Clean Energy in the matter of the air permit challenge for Duke Cliffside Unit 6. *Southern Alliance for Clean Energy et al., v. Duke Energy Carolinas, LLC*, Case No. 1:08-cv-00318-LHT-DLH (Western District of North Carolina, Asheville Division).

23. Declaration (August 2008) on behalf of the Sierra Club in the matter of Dominion Wise County plant MACT.us

24. Expert Report (June 2008) on behalf of Sierra Club for the Green Energy Resource Recovery Project, MACT Analysis.

25. Expert Report (February 2009) on behalf of Sierra Club and the Environmental Integrity Project in the matter of the air permit challenge for NRG Limestone's proposed Unit 3 in Texas.

26. Expert Report (June 2009) on behalf of MTD Products, Inc., in the matter of *Alice Holmes and Vernon Holmes v. Home Depot USA, Inc., et al.*

27. Expert Report (August 2009) on behalf of Sierra Club and the Southern Environmental Law Center in the matter of the air permit challenge for Santee Cooper's proposed Pee Dee plant in South Carolina).

28. Statements (May 2008 and September 2009) on behalf of the Minnesota Center for Environmental Advocacy to the Minnesota Pollution Control Agency in the matter of the Minnesota Haze State Implementation Plans.

29. Expert Report (August 2009) on behalf of Environmental Defense, in the matter of permit challenges to the proposed Las Brisas coal fired power plant project at the Texas State Office of Administrative Hearings (SOAH).

30. Expert Report and Rebuttal Report (September 2009) on behalf of the Sierra Club, in the matter of challenges to the proposed Medicine Bow Fuel and Power IGL plant in Cheyenne, Wyoming.

31. Expert Report (December 2009) and Rebuttal reports (May 2010 and June 2010) on behalf of the United States in connection with the Alabama Power Company NSR Case. *United States v. Alabama Power Company*, CV-01-HS-152-S (Northern District of Alabama, Southern Division).

32. Pre-filed Testimony (October 2009) on behalf of Environmental Defense and others, in the matter of challenges to the proposed White Stallion Energy Center coal fired power plant project at the Texas State Office of Administrative Hearings (SOAH).

33. Pre-filed Testimony (July 2010) and Written Rebuttal Testimony (August 2010) on behalf of the State of New Mexico Environment Department in the matter of Proposed Regulation 20.2.350 NMAC – *Greenhouse Gas Cap and Trade Provisions,* No. EIB 10-04 (R), to the State of New Mexico, Environmental Improvement Board.

34. Expert Report (August 2010) and Rebuttal Expert Report (October 2010) on behalf of the United States in connection with the Louisiana Generating NSR

Case. *United States v. Louisiana Generating, LLC*, 09-CV100-RET-CN (Middle District of Louisiana) – Liability Phase.

35. Declaration (August 2010), Reply Declaration (November 2010), Expert Report (April 2011), Supplemental and Rebuttal Expert Report (July 2011) on behalf of the United States in the matter of DTE Energy Company and Detroit Edison Company (Monroe Unit 2). *United States of America v. DTE Energy Company and Detroit Edison Company*, Civil Action No. 2:10-cv-13101-BAF-RSW (Eastern District of Michigan).

36. Expert Report and Deposition (August 2010) as well as Affidavit (September 2010) on behalf of Kentucky Waterways Alliance, Sierra Club, and Valley Watch in the matter of challenges to the NPDES permit issued for the Trimble County power plant by the Kentucky Energy and Environment Cabinet to Louisville Gas and Electric, File No. DOW-41106-047.

37. Expert Report (August 2010), Rebuttal Expert Report (September 2010), Supplemental Expert Report (September 2011), and Declaration (November 2011) on behalf of Wild Earth Guardians in the matter of opacity exceedances and monitor downtime at the Public Service Company of Colorado (Xcel)'s Cherokee power plant. No. 09-cv-1862 (District of Colorado).

38. Written Direct Expert Testimony (August 2010) and Affidavit (February 2012) on behalf of Fall-Line Alliance for a Clean Environment and others in the matter of the PSD Air Permit for Plant Washington issued by Georgia DNR at the Office of State Administrative Hearing, State of Georgia (OSAH-BNR-AQ-1031707-98-WALKER).

39. Deposition (August 2010) on behalf of Environmental Defense, in the matter of the remanded permit challenge to the proposed Las Brisas coal fired power plant project at the Texas State Office of Administrative Hearings (SOAH).

40. Expert Report, Supplemental/Rebuttal Expert Report, and Declarations (October 2010, November 2010, September 2012) on behalf of New Mexico Environment Department (Plaintiff-Intervenor), Grand Canyon Trust and Sierra Club (Plaintiffs) in the matter of *Plaintiffs v. Public Service Company of New Mexico* (PNM), Civil No. 1:02-CV-0552 BB/ATC (ACE) (District of New Mexico).

41. Expert Report (October 2010) and Rebuttal Expert Report (November 2010) (BART Determinations for PSCo Hayden and CSU Martin Drake units) to the Colorado Air Quality Commission on behalf of Coalition of Environmental Organizations.

42. Expert Report (November 2010) (BART Determinations for TriState Craig Units, CSU Nixon Unit, and PRPA Rawhide Unit) to the Colorado Air Quality Commission on behalf of Coalition of Environmental Organizations.

43. Declaration (November 2010) on behalf of the Sierra Club in connection with the Martin Lake Station Units 1, 2, and 3. *Sierra Club v. Energy Future Holdings Corporation and Luminant Generation Company LLC*, Case No. 5:10-cv-00156-DF-CMC (Eastern District of Texas, Texarkana Division).

44. Pre-Filed Testimony (January 2011) and Declaration (February 2011) to the Georgia Office of State Administrative Hearings (OSAH) in the matter of Minor Source HAPs status for the proposed Longleaf Energy Associates power plant (OSAH-BNR-AQ-1115157-60-HOWELLS) on behalf of the Friends of the Chattahoochee and the Sierra Club).

45. Declaration (February 2011) in the matter of the Draft Title V Permit for RRI Energy MidAtlantic Power Holdings LLC Shawville Generating Station (Pennsylvania), ID No. 17-00001 on behalf of the Sierra Club.

46. Expert Report (March 2011), Rebuttal Expert Report (June 2011) on behalf of the United States in *United States of America v. Cemex, Inc.*, Civil Action No. 09-cv-00019-MSK-MEH (District of Colorado).

47. Declaration (April 2011) and Expert Report (July 16, 2012) in the matter of the Lower Colorado River Authority (LCRA)'s Fayette (Sam Seymour) Power Plant on behalf of the Texas Campaign for the Environment. *Texas Campaign for the Environment v. Lower Colorado River Authority,* Civil Action No. 4:11-cv-00791 (Southern District of Texas, Houston Division).

48. Declaration (June 2011) on behalf of the Plaintiffs MYTAPN in the matter of Microsoft-Yes, Toxic Air Pollution-No (MYTAPN) v. State of Washington, Department of Ecology and Microsoft Corporation Columbia Data Center to the Pollution Control Hearings Board, State of Washington, Matter No. PCHB No. 10-162.

49. Expert Report (June 2011) on behalf of the New Hampshire Sierra Club at the State of New Hampshire Public Utilities Commission, Docket No. 10-261 – the 2010 Least Cost Integrated Resource Plan (LCIRP) submitted by the Public Service Company of New Hampshire (re. Merrimack Station Units 1 and 2).

50. Declaration (August 2011) in the matter of the Sandy Creek Energy Associates L.P. Sandy Creek Power Plant on behalf of Sierra Club and Public Citizen. *Sierra Club, Inc. and Public Citizen, Inc. v. Sandy Creek Energy Associates, L.P.,* Civil Action No. A-08-CA-648-LY (Western District of Texas, Austin Division).

51. Expert Report (October 2011) on behalf of the Defendants in the matter of *John Quiles and Jeanette Quiles et al. v. Bradford-White Corporation, MTD Products, Inc., Kohler Co., et al.,* Case No. 3:10-cv-747 (TJM/DEP) (Northern District of New York).

52. Declaration (October 2011) on behalf of the Plaintiffs in the matter of *American Nurses Association et. al. (Plaintiffs), v. US EPA (Defendant)*, Case No. 1:08-cv-02198-RMC (US District Court for the District of Columbia).

53. Declaration (February 2012) and Second Declaration (February 2012) in the matter of *Washington Environmental Council and Sierra Club Washington State Chapter v. Washington State Department of Ecology and Western States Petroleum Association,* Case No. 11-417-MJP (Western District of Washington).

54. Expert Report (March 2012) and Supplemental Expert Report (November 2013) in the matter of *Environment Texas Citizen Lobby, Inc and Sierra Club v.*

ExxonMobil Corporation et al., Civil Action No. 4:10-cv-4969 (Southern District of Texas, Houston Division).

55. Declaration (March 2012) in the matter of *Center for Biological Diversity, et al. v. United States Environmental Protection Agency,* Case No. 11-1101 (consolidated with 11-1285, 11-1328 and 11-1336) (US Court of Appeals for the District of Columbia Circuit).

56. Declaration (March 2012) in the matter of *Sierra Club v. The Kansas Department of Health and Environment*, Case No. 11-105,493-AS (Holcomb power plant) (Supreme Court of the State of Kansas).

57. Declaration (March 2012) in the matter of the Las Brisas Energy Center *Environmental Defense Fund et al., v. Texas Commission on Environmental Quality,* Cause No. D-1-GN-11-001364 (District Court of Travis County, Texas, 261st Judicial District).

58. Expert Report (April 2012), Supplemental and Rebuttal Expert Report (July 2012), and Supplemental Rebuttal Expert Report (August 2012) on behalf of the states of New Jersey and Connecticut in the matter of the Portland Power plant *State of New Jersey and State of Connecticut (Intervenor-Plaintiff) v. RRI Energy Mid-Atlantic Power Holdings et al.,* Civil Action No. 07-CV-5298 (JKG) (Eastern District of Pennsylvania).

59. Declaration (April 2012) in the matter of the EPA's EGU MATS Rule, on behalf of the Environmental Integrity Project.

60. Expert Report (August 2012) on behalf of the United States in connection with the Louisiana Generating NSR Case. *United States v. Louisiana Generating, LLC*, 09-CV100-RET-CN (Middle District of Louisiana) – Harm Phase.

61. Declaration (September 2012) in the Matter of the Application of *Energy Answers Incinerator, Inc.* for a Certificate of Public Convenience and Necessity to Construct a 120 MW Generating Facility in Baltimore City, Maryland, before the Public Service Commission of Maryland, Case No. 9199.

62. Expert Report (October 2012) on behalf of the Appellants (Robert Concilus and Leah Humes) in the matter of Robert Concilus and Leah Humes v. Commonwealth of Pennsylvania Department of Environmental Protection and Crawford Renewable Energy, before the Commonwealth of Pennsylvania Environmental Hearing Board, Docket No. 2011-167-R.

63. Expert Report (October 2012), Supplemental Expert Report (January 2013), and Affidavit (June 2013) in the matter of various Environmental Petitioners v. North Carolina DENR/DAQ and Carolinas Cement Company, before the Office of Administrative Hearings, State of North Carolina.

64. Pre-filed Testimony (October 2012) on behalf of No-Sag in the matter of the North Springfield Sustainable Energy Project before the State of Vermont, Public Service Board.

65. Pre-filed Testimony (November 2012) on behalf of Clean Wisconsin in the matter of Application of Wisconsin Public Service Corporation for Authority to

Construct and Place in Operation a New Multi-Pollutant Control Technology System (ReACT) for Unit 3 of the Weston Generating Station, before the Public Service Commission of Wisconsin, Docket No. 6690-CE-197.

66. Expert Report (February 2013) on behalf of Petitioners in the matter of Credence Crematory, Cause No. 12-A-J-4538 before the Indiana Office of Environmental Adjudication.

67. Expert Report (April 2013), Rebuttal report (July 2013), and Declarations (October 2013, November 2013) on behalf of the Sierra Club in connection with the Luminant Big Brown Case. *Sierra Club v. Energy Future Holdings Corporation and Luminant Generation Company LLC*, Civil Action No. 6:12-cv-00108-WSS (Western District of Texas, Waco Division).

68. Declaration (April 2013) on behalf of Petitioners in the matter of *Sierra Club, et al., (Petitioners) v Environmental Protection Agency et al. (Resppondents),* Case No., 13-1112, (Court of Appeals, District of Columbia Circuit).

69. Expert Report (May 2013) and Rebuttal Expert Report (July 2013) on behalf of the Sierra Club in connection with the Luminant Martin Lake Case. *Sierra Club v. Energy Future Holdings Corporation and Luminant Generation Company LLC*, Civil Action No. 5:10-cv-0156-MHS-CMC (Eastern District of Texas, Texarkana Division).

70. Declaration (August 2013) on behalf of A. J. Acosta Company, Inc., in the matter of *A. J. Acosta Company, Inc., v. County of San Bernardino*, Case No. CIVSS803651.

71. Comments (October 2013) on behalf of the Washington Environmental Council and the Sierra Club in the matter of the Washington State Oil Refinery RACT (for Greenhouse Gases), submitted to the Washington State Department of Ecology, the Northwest Clean Air Agency, and the Puget Sound Clean Air Agency.

72. Statement (November 2013) on behalf of various Environmental Organizations in the matter of the Boswell Energy Center (BEC) Unit 4 Environmental Retrofit Project, to the Minnesota Public Utilities Commission, Docket No. E-015/M-12-920.

73. Expert Report (December 2013) on behalf of the United States in *United States of America v. Ameren Missouri*, Civil Action No. 4:11-cv-00077-RWS (Eastern District of Missouri, Eastern Division).

74. Expert Testimony (December 2013) on behalf of the Sierra Club in the matter of Public Service Company of New Hampshire Merrimack Station Scrubber Project and Cost Recovery, Docket No. DE 11-250, to the State of New Hampshire Public Utilities Commission.

75. Expert Report (January 2014) on behalf of Baja, Inc., in *Baja, Inc., v. Automotive Testing and Development Services, Inc. et. al*, Civil Action No. 8:13-CV-02057-GRA (District of South Carolina, Anderson/Greenwood Division).

76. Declaration (March 2014) on behalf of the Center for International Environmental Law, Chesapeake Climate Action Network, Friends of the Earth, Pacific

Environment, and the Sierra Club (Plaintiffs) in the matter of *Plaintiffs v. the Export-Import Bank (Ex-Im Bank) of the United States*, Civil Action No. 13-1820 RC (District Court for the District of Columbia).

77. Declaration (April 2014) on behalf of Respondent-Intervenors in the matter of *Mexichem Specialty Resins Inc., et al., (Petitioners) v Environmental Protection Agency et al.,* Case No., 12-1260 (and Consolidated Case Nos. 12-1263, 12-1265, 12-1266, and 12-1267), (Court of Appeals, District of Columbia Circuit).

78. Direct Prefiled Testimony (June 2014) on behalf of the Michigan Environmental Council and the Sierra Club in the matter of the Application of DTE Electric Company for Authority to Implement a Power Supply Cost Recovery (PSCR) Plan in its Rate Schedules for 2014 Metered Jurisdictional Sales of Electricity, Case No. U-17319 (Michigan Public Service Commission).

79. Expert Report (June 2014) on behalf of ECM Biofilms in the matter of the US Federal Trade Commission (FTC) v. ECM Biofilms (FTC Docket #9358).

80. Direct Prefiled Testimony (August 2014) on behalf of the Michigan Environmental Council and the Sierra Club in the matter of the Application of Consumers Energy Company for Authority to Implement a Power Supply Cost Recovery (PSCR) Plan in its Rate Schedules for 2014 Metered Jurisdictional Sales of Electricity, Case No. U-17317 (Michigan Public Service Commission).

81. Declaration (July 2014) on behalf of Public Health Intervenors in the matter of *EME Homer City Generation v. US EPA* (Case No. 11-1302 and consolidated cases) relating to the lifting of the stay entered by the Court on December 30, 2011 (US Court of Appeals for the District of Columbia).

82. Expert Report (September 2014), Rebuttal Expert Report (December 2014) and Supplemental Expert Report (March 2015) on behalf of Plaintiffs in the matter of *Sierra Club and Montana Environmental Information Center (Plaintiffs) v. PPL Montana LLC, Avista Corporation, Puget Sound Energy, Portland General Electric Company, Northwestern Corporation, and Pacificorp (Defendants)*, Civil Action No. CV 13-32-BLG-DLC-JCL (US District Court for the District of Montana, Billings Division).

83. Expert Report (November 2014) on behalf of Niagara County, the Town of Lewiston, and the Villages of Lewiston and Youngstown in the matter of CWM Chemical Services, LLC New York State Department of Environmental Conservation (NYSDEC) Permit Application Nos.: 9-2934-00022/00225, 9-2934-00022/00231, 9-2934-00022/00232, and 9-2934-00022/00249 (pending).

84. *Declaration (January 2015) relating to Startup/Shutdown in the MATS Rule (EPA Docket ID No. EPA-HQ-OAR-2009-0234) on behalf of the Environmental Integrity Project.*

85. Pre-filed Direct Testimony (March 2015), Supplemental Testimony (May 2015), and Surrebuttal Testimony (December 2015) on behalf of Friends of the Columbia Gorge in the matter of the Application for a Site Certificate for the Troutdale Energy Center before the Oregon Energy Facility Siting Council.

86. Brief of Amici Curiae Experts in Air Pollution Control and Air Quality Regulation in Support of the Respondents, On Writs of Certiorari to the US Court of Appeals for the District of Columbia, No. 14-46, 47, 48. *Michigan et. al., (Petitioners) v. EPA et. al., Utility Air Regulatory Group (Petitioners) v. EPA et. al., National Mining Association et. al., (Petitioner) v. EPA et. al.,* (Supreme Court of the United States).

87. Expert Report (March 2015) and Rebuttal Expert Report (January 2016) on behalf of Plaintiffs in the matter of *Conservation Law Foundation v. Broadrock Gas Services LLC, Rhode Island LFG GENCO LLC, and Rhode Island Resource Recovery Corporation (Defendants)*, Civil Action No. 1:13-cv-00777-M-PAS (US District Court for the District of Rhode Island).

88. Declaration (April 2015) relating to various Technical Corrections for the MATS Rule (EPA Docket ID No. EPA-HQ-OAR-2009-0234) on behalf of the Environmental Integrity Project.

89. Direct Prefiled Testimony (May 2015) on behalf of the Michigan Environmental Council, the Natural Resources Defense Council, and the Sierra Club in the matter of the Application of DTE Electric Company for Authority to Increase its Rates, Amend its Rate Schedules and Rules Governing the Distribution and Supply of Electric Energy and for Miscellaneous Accounting Authority, Case No. U-17767 (Michigan Public Service Commission).

90. Expert Report (July 2015) and Rebuttal Expert Report (July 2015) on behalf of Plaintiffs in the matter of *Northwest Environmental Defense Center et. al., v. Cascade Kelly Holdings LLC, d/b/a Columbia Pacific Bio-Refinery, and Global Partners LP (Defendants)*, Civil Action No. 3:14-cv-01059-SI (US District Court for the District of Oregon, Portland Division).

91. Declaration (August 2015, Docket No. 1570376) in support of "Opposition of Respondent-Intervenors American Lung Association, et. al., to Tri-State Generation's Emergency Motion;" Declaration (September 2015, Docket No. 1574820) in support of "Joint Motion of the State, Local Government, and Public Health Respondent-Intervenors for Remand Without Vacatur;" Declaration (October 2015) in support of "Joint Motion of the State, Local Government, and Public Health Respondent-Intervenors to State and Certain Industry Petitioners' Motion to Govern, *White Stallion Energy Center, LLC v. US EPA*, Case No. 12-1100 (US Court of Appeals for the District of Columbia).

92. Declaration (September 2015) in support of the Draft Title V Permit for Dickerson Generating Station (Proposed Permit No 24-031-0019) on behalf of the Environmental Integrity Project.

93. Expert Report (Liability Phase) (December 2015) and Rebuttal Expert Report (February 2016) on behalf of Plaintiffs in the matter of *Natural Resources Defense Council, Inc., Sierra Club, Inc., Environmental Law and Policy Center, and Respiratory Health Association v. Illinois Power Resources LLC, and Illinois Power Resources Generating LLC (Defendants)*, Civil Action No. 1:13-cv-01181 (US District Court for the Central District of Illinois, Peoria Division).

94. Declaration (December 2015) in support of the Petition to Object to the Title V Permit for Morgantown Generating Station (Proposed Permit No 24-017-0014) on behalf of the Environmental Integrity Project.

95. Expert Report (November 2015) on behalf of Appellants in the matter of *Sierra Club, et al. v. Craig W. Butler, Director of Ohio Environmental Protection Agency et al.,* ERAC Case No. 14-256814.

96. Affidavit (January 2016) on behalf of Bridgewatch Detroit in the matter of *Bridgewatch Detroit v. Waterfront Petroleum Terminal Co., and Waterfront Terminal Holdings, LLC.*, in the Circuit Court for the County of Wayne, State of Michigan.

97. Expert Report (February 2016) and Rebuttal Expert Report (July 2016) on behalf of the challengers in the matter of the Delaware Riverkeeper Network, Clean Air Council, et. al., vs. Commonwealth of Pennsylvania Department of Environmental Protection and R. E. Gas Development LLC regarding the Geyer well site before the Pennsylvania Environmental Hearing Board.

98. Direct Testimony (May 2016) in the matter of Tesoro Savage LLC Vancouver Energy Distribution Terminal, Case No. 15-001 before the State of Washington Energy Facility Site Evaluation Council.

99. Declaration (June 2016) relating to deficiencies in air quality analysis for the proposed Millenium Bulk Terminal, Port of Longview, Washington.

100. Declaration (December 2016) relating to EPA's refusal to set limits on PM emissions from coal-fired power plants that reflect pollution reductions achievable with fabric filters on behalf of Environmental Integrity Project, Clean Air Council, Chesapeake Climate Action Network, Downwinders at Risk represented by Earthjustice in the matter of *ARIPPA v EPA, Case No. 15-1180.* (D.C. Circuit Court of Appeals).

101. Expert Report (January 2017) on the Environmental Impacts Analysis associated with the Huntley and Huntley Poseidon Well Pad on behalf citizens in the matter of the special exception use Zoning Hearing Board of Penn Township, Westmoreland County, Pennsylvania.

102. Expert Report (January 2017) on the Environmental Impacts Analysis associated with the Apex Energy Backus Well Pad on behalf citizens in the matter of the special exception use Zoning Hearing Board of Penn Township, Westmoreland County, Pennsylvania.

103. Expert Report (January 2017) on the Environmental Impacts Analysis associated with the Apex Energy Drakulic Well Pad on behalf citizens in the matter of the special exception use Zoning Hearing Board of Penn Township, Westmoreland County, Pennsylvania.

104. Expert Report (January 2017) on the Environmental Impacts Analysis associated with the Apex Energy Deutsch Well Pad on behalf citizens in the matter of the special exception use Zoning Hearing Board of Penn Township, Westmoreland County, Pennsylvania.

105. Affidavit (February 2017) pertaining to deficiencies water discharge compliance issues at the Wood River Refinery in the matter of *People of the State of Illinois (Plaintiff) v. Phillips 66 Company, ConocoPhillips Company, WRB Refining LP (Defendants)*, Case No. 16-CH-656, (Circuit Court for the Third Judicial Circuit, Madison County, Illinois).

106. Expert Report (March 2017) on behalf of the Plaintiff pertaining to non-degradation analysis for waste water discharges from a power plant in the matter of *Sierra Club (Plaintiff) v. Pennsylvania Department of Environmental Protection (PADEP) and Lackawanna Energy Center*, Docket No. 2016-047-L (consolidated), (Pennsylvania Environmental Hearing Board).

107. Expert Report (March 2017) on behalf of the Plaintiff pertaining to air emissions from the Heritage incinerator in East Liverpool, Ohio in the matter of *Save our County (Plaintiff) v. Heritage Thermal Services, Inc. (Defendant), Case No. 4:16-CV-1544-BYP*, (US District Court for the Northern District of Ohio, Eastern Division).

108. Rebuttal Expert Report (June 2017) on behalf of Plaintiffs in the matter of *Casey Voight and Julie Voight (Plaintiffs) v Coyote Creek Mining Company LLC (Defendant),* Civil Action No. 1:15-CV-00109 (US District Court for the District of North Dakota, Western Division).

109. Expert Affidavit (August 2017) and Penalty/Remedy Expert Affidavit (October 2017) on behalf of Plaintiff in the matter of *Wildearth Guardians (Plaintiff) v Colorado Springs Utility Board (Defendant,)* Civil Action No. 1:15-cv-00357-CMA-CBS (US District Court for the District of Colorado).

110. Expert Report (August 2017) on behalf of Appellant in the matter of *Patricia Ann Troiano (Appellant) v. Upper Burrell Township Zoning Hearing Board (Appellee)*, Court of Common Pleas of Westmoreland County, Pennsylvania, Civil Division.

111. Expert Report (October 2017), Supplemental Expert Report (October 2017), and and Rebuttal Expert Report (November 2017) on behalf of Defendant in the matter of *Oakland Bulk and Oversized Terminal (Plaintiff) v City of Oakland (Defendant,)* Civil Action No. 3:16-cv-07014-VC (US District Court for the Northern District of California, San Francisco Division).

112. Declaration (December 2017) on behalf of the Environmental Integrity Project in the matter of permit issuance for ATI Flat Rolled Products Holdings, Breckenridge, PA to the Allegheny County Health Department.

113. Expert Report (Harm Phase) (January 2018) on behalf of Plaintiffs in the matter of *Natural Resources Defense Council, Inc., Sierra Club, Inc., and Respiratory Health Association v. Illinois Power Resources LLC, and Illinois Power Resources Generating LLC (Defendants)*, Civil Action No. 1:13-cv-01181 (US District Court for the Central District of Illinois, Peoria Division).

C. Occasions where Dr. Sahu has provided oral testimony in depositions, at trial or in similar proceedings include the following:

114. Deposition on behalf of Rocky Mountain Steel Mills, Inc. located in Pueblo, Colorado – dealing with the manufacture of steel in mini-mills including methods of air pollution control and BACT in steel mini-mills and opacity issues at this steel mini-mill.

115. Trial Testimony (February 2002) on behalf of Rocky Mountain Steel Mills, Inc. in Denver District Court.

116. Trial Testimony (February 2003) on behalf of the United States in the Ohio Edison NSR Cases, *United States, et al. v. Ohio Edison Co., et al.*, C2-99-1181 (Southern District of Ohio).

117. Trial Testimony (June 2003) on behalf of the United States in the Illinois Power NSR Case, *United States v. Illinois Power Co., et al.*, 99-833-MJR (Southern District of Illinois).

118. Deposition (10/20/2005) on behalf of the United States in connection with the Cinergy NSR Case. *United States, et* al. *v. Cinergy Corp., et al.*, IP 99-1693-C-M/S (Southern District of Indiana).

119. Oral Testimony (August 2006) on behalf of the Appalachian Center for the Economy and the Environment re. the Western Greenbrier plant, WV before the West Virginia DEP.

120. Oral Testimony (May 2007) on behalf of various Montana petitioners (Citizens Awareness Network (CAN), Women's Voices for the Earth (WVE) and the Clark Fork Coalition (CFC)) re. the Thompson River Cogeneration plant before the Montana Board of Environmental Review.

121. Oral Testimony (October 2007) on behalf of the Sierra Club re. the Sevier Power Plant before the Utah Air Quality Board.

122. Oral Testimony (August 2008) on behalf of the Sierra Club and Clean Water re. Big Stone Unit II before the South Dakota Board of Minerals and the Environment.

123. Oral Testimony (February 2009) on behalf of the Sierra Club and the Southern Environmental Law Center re. Santee Cooper Pee Dee units before the South Carolina Board of Health and Environmental Control.

124. Oral Testimony (February 2009) on behalf of the Sierra Club and the Environmental Integrity Project re. NRG Limestone Unit 3 before the Texas State Office of Administrative Hearings (SOAH) Administrative Law Judges.

125. Deposition (July 2009) on behalf of MTD Products, Inc., in the matter of *Alice Holmes and Vernon Holmes v. Home Depot USA, Inc., et al*.

126. Deposition (October 2009) on behalf of Environmental Defense and others, in the matter of challenges to the proposed Coleto Creek coal fired power plant project at the Texas State Office of Administrative Hearings (SOAH).

127. Deposition (October 2009) on behalf of Environmental Defense, in the matter of permit challenges to the proposed Las Brisas coal fired power plant project at the Texas State Office of Administrative Hearings (SOAH).

128. Deposition (October 2009) on behalf of the Sierra Club, in the matter of challenges to the proposed Medicine Bow Fuel and Power IGL plant in Cheyenne, Wyoming.

129. Deposition (October 2009) on behalf of Environmental Defense and others, in the matter of challenges to the proposed Tenaska coal fired power plant project at the Texas State Office of Administrative Hearings (SOAH). (April 2010).

130. Oral Testimony (November 2009) on behalf of the Environmental Defense Fund re. the Las Brisas Energy Center before the Texas State Office of Administrative Hearings (SOAH) Administrative Law Judges.

131. Deposition (December 2009) on behalf of Environmental Defense and others, in the matter of challenges to the proposed White Stallion Energy Center coal fired power plant project at the Texas State Office of Administrative Hearings (SOAH).

132. Oral Testimony (February 2010) on behalf of the Environmental Defense Fund re. the White Stallion Energy Center before the Texas State Office of Administrative Hearings (SOAH) Administrative Law Judges.

133. Deposition (June 2010) on behalf of the United States in connection with the Alabama Power Company NSR Case. *United States v. Alabama Power Company*, CV-01-HS-152-S (Northern District of Alabama, Southern Division).

134. Trial Testimony (September 2010) on behalf of Commonwealth of Pennsylvania – Dept. of Environmental Protection, State of Connecticut, State of New York, State of Maryland, and State of New Jersey (Plaintiffs) in connection with the Allegheny Energy NSR Case in US District Court in the Western District of Pennsylvania. *Plaintiffs v. Allegheny Energy Inc., et al.,* 2:05cv0885 (Western District of Pennsylvania).

135. Oral Direct and Rebuttal Testimony (September 2010) on behalf of Fall-Line Alliance for a Clean Environment and others in the matter of the PSD Air Permit for Plant Washington issued by Georgia DNR at the Office of State Administrative Hearing, State of Georgia (OSAH-BNR-AQ-1031707-98-WALKER).

136. Oral Testimony (September 2010) on behalf of the State of New Mexico Environment Department in the matter of Proposed Regulation 20.2.350 NMAC – *Greenhouse Gas Cap and Trade Provisions,* No. EIB 10-04 (R), to the State of New Mexico, Environmental Improvement Board.

137. Oral Testimony (October 2010) on behalf of the Environmental Defense Fund re. the Las Brisas Energy Center before the Texas State Office of Administrative Hearings (SOAH) Administrative Law Judges.

138. Oral Testimony (November 2010) regarding BART for PSCo Hayden, CSU Martin Drake units before the Colorado Air Quality Commission on behalf of the Coalition of Environmental Organizations.

139. Oral Testimony (December 2010) regarding BART for TriState Craig Units, CSU Nixon Unit, and PRPA Rawhide Unit) before the Colorado Air Quality Commission on behalf of the Coalition of Environmental Organizations.

140. Deposition (December 2010) on behalf of the United States in connection with the Louisiana Generating NSR Case. *United States v. Louisiana Generating, LLC*, 09-CV100-RET-CN (Middle District of Louisiana).

141. Deposition (February 2011 and January 2012) on behalf of Wild Earth Guardians in the matter of opacity exceedances and monitor downtime at the Public Service Company of Colorado (Xcel)'s Cherokee power plant. No. 09-cv-1862 (D. Colo.).

142. Oral Testimony (February 2011) to the Georgia Office of State Administrative Hearings (OSAH) in the matter of Minor Source HAPs status for the proposed Longleaf Energy Associates power plant (OSAH-BNR-AQ-1115157-60-HOWELLS) on behalf of the Friends of the Chattahoochee and the Sierra Club).

143. Deposition (August 2011) on behalf of the United States in *United States of America v. Cemex, Inc.*, Civil Action No. 09-cv-00019-MSK-MEH (District of Colorado).

144. Deposition (July 2011) and Oral Testimony at Hearing (February 2012) on behalf of the Plaintiffs MYTAPN in the matter of Microsoft-Yes, Toxic Air Pollution-No (MYTAPN) v. State of Washington, Department of Ecology and Microsoft Corporation Columbia Data Center to the Pollution Control Hearings Board, State of Washington, Matter No. PCHB No. 10-162.

145. Oral Testimony at Hearing (March 2012) on behalf of the United States in connection with the Louisiana Generating NSR Case. *United States v. Louisiana Generating, LLC*, 09-CV100-RET-CN (Middle District of Louisiana).

146. Oral Testimony at Hearing (April 2012) on behalf of the New Hampshire Sierra Club at the State of New Hampshire Public Utilities Commission, Docket No. 10-261 – the 2010 Least Cost Integrated Resource Plan (LCIRP) submitted by the Public Service Company of New Hampshire (re. Merrimack Station Units 1 and 2).

147. Oral Testimony at Hearing (November 2012) on behalf of Clean Wisconsin in the matter of Application of Wisconsin Public Service Corporation for Authority to Construct and Place in Operation a New Multi-Pollutant Control Technology System (ReACT) for Unit 3 of the Weston Generating Station, before the Public Service Commission of Wisconsin, Docket No. 6690-CE-197.

148. Deposition (March 2013) in the matter of various Environmental Petitioners v. North Carolina DENR/DAQ and Carolinas Cement Company, before the Office of Administrative Hearings, State of North Carolina.

149. Deposition (August 2013) on behalf of the Sierra Club in connection with the Luminant Big Brown Case. *Sierra Club v. Energy Future Holdings Corporation and Luminant Generation Company LLC*, Civil Action No. 6:12-cv-00108-WSS (Western District of Texas, Waco Division).

150. Deposition (August 2013) on behalf of the Sierra Club in connection with the Luminant Martin Lake Case. *Sierra Club v. Energy Future Holdings Corporation and Luminant Generation Company LLC*, Civil Action No. 5:10-cv-0156-MHS-CMC (Eastern District of Texas, Texarkana Division).

151. Deposition (February 2014) on behalf of the United States in *United States of America v. Ameren Missouri*, Civil Action No. 4:11-cv-00077-RWS (Eastern District of Missouri, Eastern Division).

152. Trial Testimony (February 2014) in the matter of *Environment Texas Citizen Lobby, Inc and Sierra Club v. ExxonMobil Corporation et al.,* Civil Action No. 4:10-cv-4969 (Southern District of Texas, Houston Division).

153. Trial Testimony (February 2014) on behalf of the Sierra Club in connection with the Luminant Big Brown Case. *Sierra Club v. Energy Future Holdings Corporation and Luminant Generation Company LLC*, Civil Action No. 6:12-cv-00108-WSS (Western District of Texas, Waco Division).

154. Deposition (June 2014) and Trial (August 2014) on behalf of ECM Biofilms in the matter of the *US Federal Trade Commission (FTC) v. ECM Biofilms* (FTC Docket #9358).

155. Deposition (February 2015) on behalf of Plaintiffs in the matter of *Sierra Club and Montana Environmental Information Center (Plaintiffs) v. PPL Montana LLC, Avista Corporation, Puget Sound Energy, Portland General Electric Company, Northwestern Corporation, and Pacificorp (Defendants)*, Civil Action No. CV 13-32-BLG-DLC-JCL (US District Court for the District of Montana, Billings Division).

156. Oral Testimony at Hearing (April 2015) on behalf of Niagara County, the Town of Lewiston, and the Villages of Lewiston and Youngstown in the matter of CWM Chemical Services, LLC New York State Department of Environmental Conservation (NYSDEC) Permit Application Nos.: 9-2934-00022/00225, 9-2934-00022/00231, 9-2934-00022/00232, and 9-2934-00022/00249 (pending).

157. Deposition (August 2015) on behalf of Plaintiff in the matter of *Conservation Law Foundation (Plaintiff) v. Broadrock Gas Services LLC, Rhode Island LFG GENCO LLC, and Rhode Island Resource Recovery Corporation (Defendants)*, Civil Action No. 1:13-cv-00777-M-PAS (US District Court for the District of Rhode Island).

158. Testimony at Hearing (August 2015) on behalf of the Sierra Club in the matter of *Amendments to 35 Illinois Administrative Code Parts 214, 217, and 225* before the Illinois Pollution Control Board, R15-21.

159. Deposition (May 2015) on behalf of Plaintiffs in the matter of *Northwest Environmental Defense Center et. al., (Plaintiffs) v. Cascade Kelly Holdings LLC, d/b/a Columbia Pacific Bio-Refinery, and Global Partners LP (Defendants)*, Civil Action No. 3:14-cv-01059-SI (US District Court for the District of Oregon, Portland Division).

160. Trial Testimony (October 2015) on behalf of Plaintiffs in the matter of *Northwest Environmental Defense Center et. al., (Plaintiffs) v. Cascade Kelly Holdings LLC, d/b/a Columbia Pacific Bio-Refinery, and Global Partners LP (Defendants)*, Civil Action No. 3:14-cv-01059-SI (US District Court for the District of Oregon, Portland Division).

161. Deposition (April 2016) on behalf of the Plaintiffs in *UNatural Resources Defense Council, Respiratory Health Association, and Sierra Club (Plaintiffs) v. Illinois Power Resources LLC and Illinois Power Resources Generation LLC (Defendants)*, Civil Action No. 1:13-cv-01181 (Central District of Illinois, Peoria Division).

162. Trial Testimony at Hearing (July 2016) in the matter of Tesoro Savage LLC Vancouver Energy Distribution Terminal, Case No. 15-001 before the State of Washington Energy Facility Site Evaluation Council.

163. Trial Testimony (December 2016) on behalf of the challengers in the matter of the Delaware Riverkeeper Network, Clean Air Council, et. al., vs. Commonwealth of Pennsylvania Department of Environmental Protection and R. E. Gas Development LLC regarding the Geyer well site before the Pennsylvania Environmental Hearing Board.

164. Trial Testimony (July-August 2016) on behalf of the United States in *United States of America v. Ameren Missouri*, Civil Action No. 4:11-cv-00077-RWS (Eastern District of Missouri, Eastern Division).

165. Trial Testimony (January 2017) on the Environmental Impacts Analysis associated with the Huntley and Huntley Poseidon Well Pad Hearing on behalf citizens in the matter of the special exception use Zoning Hearing Board of Penn Township, Westmoreland County, Pennsylvania.

166. Trial Testimony (January 2017) on the Environmental Impacts Analysis associated with the Apex energy Backus Well Pad Hearing on behalf citizens in the matter of the special exception use Zoning Hearing Board of Penn Township, Westmoreland County, Pennsylvania.

167. Trial Testimony (January 2017) on the Environmental Impacts Analysis associated with the Apex energy Drakulic Well Pad Hearing on behalf citizens in the matter of the special exception use Zoning Hearing Board of Penn Township, Westmoreland County, Pennsylvania.

168. Trial Testimony (January 2017) on the Environmental Impacts Analysis associated with the Apex energy Deutsch Well Pad Hearing on behalf citizens in the matter of the special exception use Zoning Hearing Board of Penn Township, Westmoreland County, Pennsylvania.

169. Deposition Testimony (July 2017) on behalf of Plaintiffs in the matter of *Casey Voight and Julie Voight v Coyote Creek Mining Company LLC (Defendant)* Civil Action No. 1:15-CV-00109 (US District Court for the District of North Dakota, Western Division).

170. Deposition Testimony (November 2017) on behalf of Defendant in the matter of *Oakland Bulk and Oversized Terminal (Plaintiff) v City of Oakland (Defendant,)* Civil Action No. 3:16-cv-07014-VC (US District Court for the Northern District of California, San Francisco Division).

171. Deposition Testimony (December 2017) on behalf of Plaintiff in the matter of *Wildearth Guardians (Plaintiff) v Colorado Springs Utility Board (Defendant)* Civil Action No. 1:15-cv-00357-CMA-CBS (US District Court for the District of Colorado).

172. Deposition Testimony (January 2018) in the matter of National Parks Conservation Association (NPCA) v. State of Washington Department of Ecology and British Petroleum (BP) before the Washington Pollution Control Hearing Board, Case No. 17-055.

173. Trial Testimony (January 2018) on behalf of Defendant in the matter of *Oakland Bulk and Oversized Terminal (Plaintiff) v City of Oakland (Defendant,)* Civil Action No. 3:16-cv-07014-VC (US District Court for the Northern District of California, San Francisco Division).

ATTACHMENT B

CITY OF BALTIMORE
COUNCIL BILL 18-0101R
(Resolution)

Introduced by: Councilmembers Clarke, Henry, Middleton, Scott, Burnett, Cohen, Dorsey, Bullock, Sneed, Reisinger
Introduced and adopted: September 17, 2018

A COUNCIL RESOLUTION CONCERNING

Request for State Action – Require a Rigorous Pollution Control Study and Stronger Nitrogen Oxides Limits for the Wheelabrator Baltimore Incinerator

FOR the purpose of urging that the Maryland Department of the Environment ("MDE") require a rigorous analysis relating to the installation of new pollution control technology for nitrogen oxides ("NOx") at the Wheelabrator Baltimore incinerator; requesting that, following the receipt of this analysis, MDE commence a second rulemaking process and set much stronger NOx pollution limits; and requesting that MDE share the analysis with the Council as soon as possible after receiving it.

Recitals

Emissions of nitrogen oxides ("NOx") contribute to the formation of three pollutants in the ambient (outdoor) air: ground-level ozone, nitrogen dioxide, and fine particulate matter. Each of these pollutants can have adverse effects on human health, including worsening symptoms of asthma in people who already have the condition. Baltimore City has substantially higher rates of asthma hospitalizations and emergency room visits due to asthma than the rest of the State of Maryland.

The Baltimore area, which includes Baltimore City and five additional counties, is designated as a nonattainment area for ground-level ozone by the U.S. EPA, meaning that the area does not meet federal air quality standards for ozone. NOx is the primary pollutant that contributes to the formation of ground-level ozone.

Many factors contribute to Baltimore's ozone problem, including pollution from power plants located in other states. Locally, the municipal solid waste incinerator operated by Wheelebrator Baltimore, L.P. and located in South Baltimore is a major source of NOx emissions.

In 2016, the Baltimore incinerator emitted 1,141 tons of NOx, making it the fifth largest emitter of NOx in the State of Maryland that year. The Baltimore incinerator also emitted more NOx per unit of energy generated in 2016 than any of the seven coal plants in Maryland.

Short-term emission limits for incinerators are expressed in parts per million by volume dry at 7% oxygen (hereinafter "ppm"). On October 16, 2017, the Council passed Resolution 17-0034R, which requested that the Maryland Department of the Environment ("MDE") set a NOx limit no higher than 150 ppm on a 24-hour average for the Wheelabrator Baltimore incinerator. This limit had been previously adopted under the federal Reasonably Available Control Technology ("RACT") standard in Connecticut and New Jersey and proposed in Massachusetts. Resolution 17-0034R also requested, pursuant to an amendment adopted on September 28, 2017,

EXPLANATION: Underlining indicates matter added by amendment.
~~Strike out~~ indicates matter deleted by amendment.

that MDE use its legal authority to go beyond the RACT standard in order to set a NOx limit of 45 ppm on a 24-hour basis, which is the limit that would likely be set for a new incinerator.

On August 17, 2018, MDE issued a notice of proposed action in the Maryland Register for a regulation that sets new NOx emission limits for Maryland's two municipal solid waste incinerators. Under MDE's proposed regulation, the Wheelabrator Baltimore incinerator must meet a NOx limit of 150 ppm on a 24-hour average starting on May 1, 2019 and a NOx limit of 145 ppm on a 30-day average starting on May 1, 2020. MDE projects that these new limits will reduce the incinerator's NOx emissions by 200 tons per year, meaning that, after the limits go into effect, the Wheelabrator Baltimore incinerator will likely continue to emit around 900 tons per year of NOx.

In addition, the proposed regulation requires that, no later than January 1, 2020, Wheelabrator must submit an analysis of the feasibility of additional control of NOx emissions to MDE, including the potential to install state-of-the-art NOx control technology on the Wheelabrator Baltimore incinerator. Wheelabrator Baltimore would also be required to propose new NOx pollution limits to MDE by January 1, 2020 for the Baltimore incinerator based on the results of the feasibility analysis.

MDE has the legal authority to set NOx emission limits that are much stronger and more protective of health than the 150 and 145 ppm limits in the regulation that was proposed on August 17, 2018. However, there is no language in the proposed regulation that compels MDE to commence a second rulemaking and to set stronger NOx emissions limits for the Baltimore incinerator after it receives the feasibility analysis and proposed NOx limits from Wheelabrator.

The Baltimore incinerator receives financial benefits because it is treated as a Tier 1 source of renewable energy under Maryland's Renewable Portfolio Standard. Under this program, Marylanders are supposed to reap benefits from renewable energy resources that include long-term decreased emissions and a healthier environment.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF BALTIMORE, That the Council requests that Maryland Department of the Environment ensure that the analysis submitted by Wheelabrator by January 1, 2020 is a rigorous and serious assessment of the feasibility of installing new NOx pollution control technology on the Wheelabrator Baltimore incinerator. Specifically, MDE should not accept an analysis that fails to evaluate any kind of pollution control technology on the basis that the control technology has not been installed on an existing incinerator as part of a retrofit elsewhere. The Council requests that MDE ensure that Wheelabrator fully evaluate the technical feasibility of installing, at minimum, the following control technology on the Wheelabrator Baltimore facility, regardless of cost or whether the technology has been used in other retrofits: selective catalytic reduction (SCR); hybrid SCR/selective non-catalytic reduction (SNCR); and regenerative selective catalytic reduction (RSCR). In addition, the study should evaluate the options of boiler modification and boiler replacement. If cost is a concern for Wheelabrator, this should be explained separately from the evaluation of technical feasibility.

AND BE IT FURTHER RESOLVED, That the Council also urges the Maryland Department of the Environment to commence a second rulemaking process as soon as possible after receiving the feasibility analysis from Wheelabrator in order to set a second set of NOx emission limits. The Council requests that MDE use this rulemaking process to establish much stronger and more health-protective limits than those set forth in the August 17, 2018 proposed rule.

AND BE IT FURTHER RESOLVED, That the Council requests that MDE transmit the feasibility analysis and proposed emissions limits that it receives from Wheelabrator to the Baltimore City Health Department, the Baltimore City Department of Public Works, and the Office of the President of the Baltimore City Council upon MDE's receipt.

AND BE IT FURTHER RESOLVED, That a copy of this Resolution be sent to the Governor, the Secretary of the Maryland Department of the Environment, the Director of the Air and Radiation Management Administration, the Division Chief of the Air Quality Regulations Division, the Mayor, and the Mayor's Legislative Liaison to the City Council.

ATTACHMENT C

EMISSIONS TESTING REPORT 16009
Volume I - Text and Appendices A and B
COPY 0
REVISION 0

PERFORMED FOR:

WHEELABRATOR TECHNOLOGIES, INC.

Hampton, New Hampshire

at the

Wheelabrator Baltimore, LP

Baltimore, Maryland

Units 1, 2, and 3 SDA Inlets and ESP Outlets

May 2016

by

TESTAR Engineering, P.C.

7424-108 ACC Boulevard

Raleigh, North Carolina 27617

License Number C-3896

Table 2-17
Summary of Run-by-Run Air Flow Results

Run Number	Run Date	Run Time	Steam Flow, Klbs/hour	Flue Gas Temp, Deg F	Air Flow, ACFM	CO2, %	O2, %	Air Flow, DSCFM	Air Flow, DSCFM @ 7%O_2
1-O-M29-1	05/17/16	0828-1103	193	297	191,760	8.4	11.0	111,572	79,465
1-O-M29-2	05/17/16	1129-1403	192	298	189,304	8.5	10.8	108,062	78,520
1-O-M29-3	05/17/16	1434-1702	192	298	200,799	8.3	11.2	116,022	80,965
1-O-M29-4	05/18/16	0813-1035	192	297	178,673	8.2	11.2	102,704	71,671
		Average =>	**192**	**298**	**190,134**	**8.4**	**11.1**	**109,590**	**77,655**
2-O-M29-1	05/18/16	0942-1208	192	305	202,188	8.0	11.4	114,156	78,020
2-O-M29-2	05/18/16	1252-1527	192	305	203,513	8.5	11.0	113,933	81,147
2-O-M29-3	05/18/16	1556-1826	192	306	199,175	8.7	10.8	111,048	80,690
2-O-M29-4	05/19/16	0808-1036	192	304	189,193	8.3	11.2	106,791	74,523
		Average =>	**192**	**305**	**198,517**	**8.4**	**11.1**	**111,482**	**78,595**
3-O-M23-1	05/17/16	0821-1236	191	311	193,942	8.4	11.0	111,547	79,447
3-O-M23-2	05/18/16	0801-1224	192	310	181,921	8.9	10.6	103,996	77,062
3-O-M23-3	05/18/16	1246-1707	192	312	187,611	9.0	10.5	105,590	79,003
3-O-M29-1	05/19/16	0923-1214	192	310	190,809	8.2	11.3	109,577	75,679
3-O-M29-2	05/19/16	1301-1522	192	310	183,769	8.3	11.2	104,775	73,117
3-O-M29-3	05/19/16	1601-1821	192	311	183,783	8.8	10.7	105,577	77,474
3-O-M29-4	05/20/16	0740-0952	192	312	173,432	8.7	10.8	100,467	73,001
		Average =>	**192**	**311**	**185,038**	**8.6**	**10.9**	**105,933**	**76,398**
	Facility Average =>		**192**	**304**	**191,230**	**8.4**	**11.0**	**109,002**	**77,549**

ATTACHMENT D

ANNUAL CEM RATA TESTING #16009R

Text and Appendices

COPY 0
REVISION 0

PERFORMED FOR:

WHEELABRATOR TECHNOLOGIES, INC.
Hampton, New Hampshire

at the

Wheelabrator Baltimore, LP
Baltimore, Maryland
Units 1, 2, and 3 SDA Inlets and ESP Outlets
May 2016

by

TESTAR Engineering, P.C.
7424-108 ACC Boulevard
Raleigh, North Carolina 27617
License Number C-3896
919/957-9500

integrated signal processing and PLC for control all analyzer functions including optical bench operation, detector signal processing, dynamic gas calibrations, sample system operation, and operational status alarms. The dry-based CO_2, SO_2, NO_x, CO, and actual H_2O measurements and operational status outputs are sent to the ESC 8816 data logger.

Table 3-1
Facility CEMS Analyzers

Pollutant Monitor	Unit	Location	Range	Analyzer	Serial Number
O_2	1	Economizer	0 - 25%	Perkin-Elmer MCS 100e	91
SO_2	1	Economizer	0 - 600 ppm	Perkin-Elmer MCS 100e	91
O_2	1	ESP Outlet	0 - 25%	Perkin-Elmer MCS 100e	94
SO_2	1	ESP Outlet	0 - 150 ppm	Perkin-Elmer MCS 100e	94
NO_x	1	ESP Outlet	0 - 300 ppm	Perkin-Elmer MCS 100e	94
CO	1	ESP Outlet	0 - 200 ppm 0 - 2000 ppm	Perkin-Elmer MCS 100e	94
CO_2	1	ESP Outlet	0 - 20%	Perkin-Elmer MCS 100e	94
H_2O	1	ESP Outlet	0 - 25%	Perkin-Elmer MCS 100e	94
Flow Rate	1	ESP Outlet	0 - 7920 fpm	OFS 2000	10100560
O_2	2	Economizer	0 - 25%	Ecochem MC3	583-O2
SO_2	2	Economizer	0 - 600 ppm	Ecochem MC3	583-SO2
O_2	2	ESP Outlet	0 - 25%	Ecochem MC3	618-O2
SO_2	2	ESP Outlet	0 - 150 ppm	Ecochem MC3	618-SO2
NO_x	2	ESP Outlet	0 - 300 ppm	Ecochem MC3	618-NOx
CO	2	ESP Outlet	0 - 200 ppm 0 - 2000 ppm	Ecochem MC3	618-CO
CO_2	2	ESP Outlet	0 - 20%	Ecochem MC3	618-CO2
H_2O	2	ESP Outlet	0 - 25%	Ecochem MC3	618-H2O
Flow Rate	2	ESP Outlet	0 - 7920 fpm	OFS 2000	10100561
O_2	3	Economizer	0 - 25%	Perkin-Elmer MCS 100e	93
SO_2	3	Economizer	0 - 600 ppm	Perkin-Elmer MCS 100e	93
O_2	3	ESP Outlet	0 - 25%	Ecochem MC3	555-O2
SO_2	3	ESP Outlet	0 - 150 ppm	Ecochem MC3	555-SO2
NO_x	3	ESP Outlet	0 - 300 ppm	Ecochem MC3	555-NOx
CO	3	ESP Outlet	0 - 200 ppm 0 - 2000 ppm	Ecochem MC3	555-CO
CO_2	3	ESP Outlet	0 - 20%	Ecochem MC3	555-CO2
H_2O	3	ESP Outlet	0 - 25%	Ecochem MC3	555-H2O
Flow Rate	3	ESP Outlet	0 - 7920 fpm	OFS 2000	10100562 E

3.4 Oxygen Analyzer

The oxygen analyzer in the MCS100e and MC3 uses the zirconium oxide measurement technique and is integrated into the sample flow path inside the MCS 100e/MC3 analyzers.

3.5 OFS 2000 Stack Gas Flow Rate Monitor

Each outlet is equipped with a stack flow rate monitoring system consisting of an Optical Scientific Inc (OSI) Model OFS 2000. The OFS 2000 measures the velocity of scintillation or turbulence patterns in stack gas flow to determine stack gas velocity. Scintillation is the variation of light caused by its passage through pockets of air with different temperature and density. An LED in the transmitter of the motor emits a light beam that illuminates twin photo detectors in the receiver. The time it takes for the same scintillation pattern to pass from one detector to the other is converted to stack gas velocity. The received signal is then amplified and sent to the Digital Signal Processor (DSP) in the Control Unit which in turn is sent to the ESC Model data logger where the velocity signal is converted to wet standard flow (wscfm). The data logger converts dry CO_2 to wet CO_2 and calculates lbs/hr from wet scfm and wet CO_2.

3.6 ESC Data Acquisition System

The ESC data acquisition system (DAS) consists of three Model 8816 data loggers (one for each MWC unit), a UNIX based central polling and reporting computer, and an engineering workstation. The 8816 data loggers receive measurement data and signals from the MCS 100e/MC3 analyzers and transmit the data to the central polling computer. The 8816 loggers also receive the status inputs from the MCS 100e/MC3 CEMs to record analyzer calibrations, provide data status flags, and generate alarms to alert operators of CEM problems or excess emissions events. The data loggers store up to four weeks of hourly CEM analyzer data so data recording is not affected if the central computer goes down. The loggers also receive the steam flow, carbon feed rate, and ESP inlet temperature signals from the plant DCS to calculate averages and for permanent recording. The Central Polling and Reporting computer is located in the CEM shelter and receives all data from the 8816 loggers, calculates the required emission units and averaging times, generates the daily calibration reports, and provides all required data recording and reporting. Data from the Central Computer is used for the relative accuracy testing and calibration drift determinations. The computer also provides the necessary permanent data storage. Computer data is also periodically transmitted to an offsite remote file server for backup. The Engineering workstation provides a remote link to the Central Computer for data review and generation of reports.

September 21, 2018

Via e-mail
Mr. Randy Mosier
Chief of the Regulation Division
Air and Radiation Administration
Department of the Environment
1800 Washington Boulevard, Suite 730
Baltimore, Maryland 21230-1720
randy.mosier@maryland.gov

RE: Public Comments on Proposed Action on Regulation for Incinerator NOx Limits, COMAR 26.11.08

Dear Mr. Mosier:

The Environmental Integrity Project ("EIP") and the Chesapeake Bay Foundation ("CBF") (collectively, "Commenters") respectfully submit these comments on the Maryland Department of the Environment's ("MDE's") Notice of Proposed Action for revising its air quality regulations at COMAR 26.11.08 (Control of Incinerators), as published in the Maryland Register on August 17, 2018.[1]

Commenters are appreciative of the effort that MDE has put into this rulemaking and the relatively transparent nature of the public stakeholder process. However, we do not believe that the proposed regulation lives up to MDE's statement to the Baltimore Sun, as reported in July of 2017, that MDE would issue a "'very tough, aggressive' rule [for the Wheelabrator incinerator in Baltimore] that [will] force the plant to invest in technology to clean up its exhaust."[2] The NOx limits that take effect in 2019 and 2020 for this incinerator, also known as "BRESCO," are based on optimizing its existing pollution control technology, and, as explained more fully in Section I below, Commenters think that the facility could achieve lower NOx limits than those proposed just by further optimizing the existing system. In addition, neither MDE nor Wheelabrator has

[1] 45:17 Md. R. 809-814 (Aug. 17, 2018).
[2] Dance, Scott, *Maryland moving to cut emissions from BRESCO trash incinerator*, Baltimore Sun (July 5, 2017), available at http://www.baltimoresun.com/news/maryland/environment/bs-md-bresco-pollution-20170630-story.html.

performed a thorough analysis of the potential to install new NOx pollution controls on the BRESCO facility.

More importantly, however, the proposed regulation lacks sufficient specificity regarding what is supposed to be the most important piece of the next step toward a stronger NOx limit. Commenters have repeatedly noted to MDE the importance of a meaningful and specific feasibility analysis for additional NOx controls. However, the section of the proposed rule describing the feasibility analysis appears tailored to allow Wheelabrator to exclude the most effective NOx pollution controls in its assessment. In addition, the preamble to the rule lacks any statement about MDE's intent to use the feasibility analysis as the basis for a separate rulemaking to commence in 2020. MDE staff expressly represented to its air regulatory advisory council, the Air Quality Control Advisory Council ("AQCAC"), that such a statement would be in the preamble. Commenters also believe that MDE must clarify certain matters with respect to the startup and shutdown limits, and we remain concerned, as we have expressed repeatedly, about MDE's failure to require the use of a continuous emissions monitoring system ("CEMS") for ammonia at BRESCO.

I. Further NOx Reductions are Achievable at BRESCO.

The NOx emission limits for the BRESCO incinerator set in the proposed rule represent a step forward. However, the public stakeholder process for this rulemaking, in which Commenters have engaged extensively, has not unearthed evidence that it is infeasible to install more effective pollution controls on this incinerator. In addition, our expert's review of information submitted by Wheelabrator during the stakeholder process found that the BRESCO incinerator can meet lower pollution limits today just by using its existing NOx control system. While Commenters understand that MDE will likely finalize the NOx limits set forth in the proposed rule, the fact that that Wheelabrator can almost certainly do far better at controlling its emissions means that MDE must set much stronger NOx limits for this plant in the future. This is particularly important because 2017 emissions data (discussed in more detail below) confirms that Wheelabrator is unlikely to voluntarily reduce its NOx emissions in the absence of a legal mandate compelling it to do so.

MDE's proposed rule sets a 150 parts per million dry volume at 7% oxygen (hereinafter "ppm") limit on a 24-hour average for the facility, which takes effect in 2019, and a 145 ppm limit on a 30-day average, which takes effect in 2020. Commenters recognize that this represents a more aggressive standard when compared with Reasonably Available Control Technology ("RACT") standards currently in effect or proposed in other states.[3] However, we note that New York State has announced that it is considering a 150 ppm limit on a 24-hour basis for its incinerators.[4] The Virginia Department of Environmental Quality ("VDEQ") concluded in September 2017 that Reasonably Available Control Technology ("RACT") for a Covanta-operated incinerator in Lorton, Virginia requires that facility to meet NOx limits of 110 ppm on a

[3]Connecticut and New Jersey have 150 ppm RACT limits for similar incinerators and Massachusetts has proposed such a limit. Pennsylvania has submitted a limit of 180 ppm to EPA as RACT.
[4] New York State Department of Environmental Conservation letter to stakeholders, March 26, 2018.

daily average, 90 ppm on an annual average, and 233 tons per year.[5] In addition, all of these limits allow far greater emissions than the NOx limit required for new incinerators in Maryland, which is 45 ppm on a 24-hour basis.[6]

Commenters believe that, with additional controls, Wheelabrator can greatly reduce its NOx emissions and reduce the health burden of its pollution on Baltimoreans. MDE clearly has the legal authority to require additional reductions at this very large source of NOx emissions and it should exercise this authority to reduce the human health and environmental impacts of ozone levels that exceed federal standards. EPA has stated that "a state has discretion to require beyond-RACT reductions from any source, and has an obligation to demonstrate attainment as expeditiously as practicable. Thus, states may require . . . NOx reductions that are 'beyond RACT' if such reductions are needed . . . to provide for timely attainment of the ozone NAAQS." [7]

A. Wheelabrator should be required to install the most effective pollution controls available for NOx.

Commenters submit the attached report of Dr. Ranajit Sahu, [8] who has reached several salient conclusions after reviewing information that Commenters obtained following AQCAC's December 2017 meeting, including the report on the optimization study performed in June 2017 by Fuel Tech, Inc.[9] and the 2017 1-hour CEMS data from the datasets made available on MDE's website. [10]

Dr. Sahu has concluded that he sees "no technical impediments to the implementation of the [most effective] NOx-reducing technologies, such as SCR (or hybrid SNCR/SCR), in the appropriate locations along the gas paths at each of the [Wheelabrator Baltimore] boilers."[11] Dr. Sahu has reviewed numerous materials relating to the Wheelabrator Baltimore incinerator,[12] including the reports for both optimization studies performed at the facility (one in 2016 and one

[5] Letter from Thomas J. Faha, Regional Director, VDEQ, to Frank N. Capibianco, Covanta Facility Manager (September 29, 2017), available at https://www.epa.gov/sites/production/files/2017-10/documents/2017updatecaroline.11cfi_nox_ract.pdf.

[6] A 45 ppm NOx limit on a 24-hour average was set forth in the permit for the proposed Energy Answers incinerator in Baltimore City and Frederick/Carroll Renewable Waste-to-Energy Facility in Frederick County. Both facilities received their air quality permits but neither facility was constructed.

[7] EPA, Implementation of the 2008 National Ambient Air Quality Standards for Ozone: State Implementation Plan Requirements, 80 Fed. Reg. 12264, 12279 (March 6, 2015).

[8] Expert Report on NOx Emissions from the Wheelabrator Baltimore Municipal Waste Incinerator in Baltimore, owned and operated by Wheelabrator Baltimore, L.P. by Dr. Ranajit (Ron) Sahu, Consultant, dated May 10, 2018 (hereinafter "May 2018 Sahu Report"). Attached hereto as Attachment A.

[9] Bisnett, M. "NOx Optimization Project Wheelabrator Baltimore Inc." Fuel Tech Project 459S, June 5-9, 2017 (hereinafter "June 2017 Fuel Tech Study"), p. 5. Technical Support Document p. 427.

[10] MDE, Air & Radiation Administration, Research and Special Studies, Wheelabrator Annual CEM Data Reports, at http://mde.maryland.gov/programs/Air/Pages/ARAResearch.aspx.

[11] May 2018 Sahu Report, p. 10.

[12] Expert Report on NOx Emissions from the Wheelabrator Baltimore Municipal Waste Incinerator in Baltimore City, owned and operated by Wheelabrator Baltimore, L.P. ("Wheelabrator") By Dr. Ranajit (Ron) Sahu, Consultant, May 5, 2017 (hereinafter "May 2017 Sahu Report"), p. 1., Attachment B to May 9, 2017 comments of CBF. Technical Support Document Appendix B.

in 2017), the 1-hour averaged NOx CEMS data collected at the three boilers during 2017,[13] and the Wheelabrator NOx RACT PowerPoint presentation made at the January 2017 stakeholder meeting.

Thus, any objection to using the most effective NOx pollution controls available at BRESCO appears to be solely financial. This is a particularly troubling position when taken by a company that, according to the Baltimore Sun, has been rewarded approximately $10 million over the past six years for being a renewable, and ostensibly green and environmentally friendly, source of energy in Maryland.[14] In the case of hybrid SNCR/SCR, the financial concerns are reduced as this technology is typically much less expensive than SCR. Commenters note that we have no record of Wheelabrator ever providing more than a cursory response to our recommendation that it analyze the feasibility of using hybrid SNCR/SCR[15] or Regenerative Selective Catalytic Reduction ("RSCR"), the technology that would have been installed on the proposed Energy Answers incinerator in Baltimore City and was touted in project materials as more cost-effective than SCR while achieving an 80% reduction efficiency.

As Dr. Sahu notes in his report, installation of SCR would likely allow Wheelabrator to achieve levels around 50 ppm on a 24-hour average at BRESCO, assuming roughly 75% NOx reduction efficiency, which he notes is a lenient target for this technology.[16] This would cut approximately 803 tons of NOx per year from the incinerator's 2016 annual emissions, reducing the annual number from 1141 tons to 338 tons.[17]

Commenters continue to feel strongly that a presumptive limit should have been included in the rule requiring that BRESCO achieve SCR-level reductions of NOx and requiring a demonstration by Wheelabrator that it cannot meet this limit if the company wishes to avoid it. Our concerns about the lack of such a limit are only heightened by the inadequacy of the section of the proposed regulation on the feasibility analysis, which we believe must be revised.

B. Wheelabrator can achieve NOx limits lower than those proposed simply by using its current pollution controls.

In addition, Dr. Sahu concludes, based on his review of 2017 1-hour CEMS data and the June 2017 Fuel Tech Study that Wheelabrator can meet NOx limits lower than the 150 ppm and

[13] May 2018 Sahu Report, p. 1.
[14] Dance, Scott, *Power struggle: How a trash incinerator – Baltimore's biggest polluter – became 'green' energy*, Baltimore Sun, Dec. 15, 2017, at http://www.baltimoresun.com/news/maryland/environment/bs-md-trash-incineration-20171107-story.html
[15] At the September 22, 2017 stakeholder meeting, Wheelabrator Representative Tim Porter gave brief feedback on in-duct hybrid SNCR/SCR technology, stating his concerns about catalyst interference and poisoning at the Wheelabrator Baltimore facility. In Commenters' October 6, 2017 comments, we recommended additional engineering analysis and the collection of gas composition data needed to assess the validity of these concerns and to identify potential ways to address any potential poisoning or interference. As expressed below in Section II relating to the feasibility analysis, Commenters still consider it critical that MDE obtain this data in order to evaluate the feasibility of installing hybrid SCR/SNCR on the BRESCO incinerator.
[16] May 2018 Sahu Report, p. 10.
[17] Potential NOx emission reductions were calculated by applying the proportion of average 24-hour concentrations (50 ppm to 169 ppm in 2016) to the 2016 annual NOx emissions of 1141 tons, effectively calculating the emission rate assuming effluent stack flow and oxygen percentage remain constant.

145 ppm limits proposed using its existing control technology, solely through further optimization of those controls.[18] Specifically, Dr. Sahu states in his report that Wheelabrator can achieve a 24-hour limit of 135 ppm on a 24-hour basis and 130 ppm on a 30-day basis as demonstrated by the hourly CEMS data during the optimization tests and the failure to use more effective testing approaches during the optimization runs.[19] Adoption of a 135 ppm limit on a 24-hour basis would reduce 230 tons of NOx per year from the incinerator, using 2016 annual emissions as a baseline, reducing annual emissions to 911 tons.[20]

Given Maryland's action against the U.S. EPA under Clean Air Act Section 126 seeking an order that requires coal plants in other states to run their controls more effectively, we do not understand why MDE is not requiring Wheelabrator to run its existing controls in the most effective way possible.[21] Requiring the most reduced emissions rate for this source category would be consistent with Maryland's statements in its Clean Air Act 126 and 176a Petitions.

C. Wheelabrator did not maintain the same emissions reductions that it achieved during 2017 optimization testing in the following months.

Even given Wheelabrator's failure to use approaches during optimization that could have reduced its NOx levels further during those tests, CEMS data shows that Wheelabrator did not maintain the NOx reductions achieved during optimization in the following months.[22] Instead it allowed its emissions to increase again. This is likely because Wheelabrator had no legal incentive to do so as the limits in MDE's draft rule have not yet taken effect. Commenters are troubled that Wheelabrator has not voluntarily maintained the lower levels of NOx that achieved at the BRESCO incinerator in June 2017, especially, as stated above, since it is treated as a source of environmentally friendly energy under the state's Renewable Portfolio Standard. This also further demonstrates the need for MDE to set a very strong NOx limit for this plant following MDE's receipt of the feasibility analysis by the end of 2019.

As described in Dr. Sahu's report and shown in the tables below - reproduced, using a slightly altered form, from Dr. Sahu's report - NOx emissions increased again at each unit following the optimization tests. For unit 2, Wheelabrator achieved an hourly average of 148.1 ppm during optimization testing and its NOx levels increased to an hourly average of 165.1 ppm after the optimization tests (though this was lower than pre-optimization average of 168.6 ppm). For unit 3, NOx levels of 144.9 ppm were achieved during testing but increased to 165.1 ppm in the following months. Again, however, this was lower than pre-optimization levels, which measured at 167.6 ppm. Finally, at unit 1, optimization testing achieved levels of 147.1 ppm and levels increased in the following months to 164.8 ppm, which was actually higher than pre-optimization levels of 158.1 ppm.

[18] May 2018 Sahu Report, pp. 3-8
[19] *Id.* at 8.
[20] Potential NOx emissions reductions were calculated using the same methodology as described in note 17, *supra.*
[21] As stated above, Commenters could have raised this earlier in the stakeholder process had we received the 2017 Fuel Tech Report earlier and hourly CEMS data earlier.
[22] May 2018 Sahu Report, p. 9.

UNIT 1		
Time Period Relative to Optimization Test	**Dates**	**NOx emissions in ppm (average hourly)**
Before Optimization	January 1 - June 6, 2017	158.1
During Optimization	June 7, June 12-14, June 20-29, 2017	147.1
After Optimization	June 30 - December 31, 2017	164.8

UNIT 2		
Time Period Relative to Optimization Test	**Dates**	**NOx emissions in ppm (average hourly)**
Before Optimization	January 1 - June 7, 2017	168.6
During Optimization	June 8, June 12-14, June 20-29, 2017	148.1
After Optimization	June 30 - December 31, 2017	165.1

UNIT 3		
Time Period Relative to Optimization Test	**Dates**	**NOx emissions in ppm (average hourly)**
Before Optimization	January 1 - June 5, 2017	167.6
During Optimization	June 6, June 12-14, June 20-29, 2017	144.9
After Optimization	June 30 - December 31, 2017	165.1

II. MDE Must Revise the Proposed Regulation to Ensure That The Feasibility Analysis Addresses the Potential to Install the Most Effective NOx Control Technology on the Baltimore Incinerator.

Proposed COMAR 26.11.08.10(E) sets forth the requirements for the feasibility analysis that Wheelabrator is required to submit by January 1, 2020 in order to assess whether additional NOx reductions can be obtained at BRESCO. Commenters have repeatedly noted that this section of the regulation needs serious improvements and have recommended specific improvements to prior drafts that are not reflected in the current proposed regulation.[23] The feasibility analysis is meaningless if it does not include an assessment of whether the most

[23] *See* Commenters' October 6, 2017 and May 11, 2018 comments. Commenters also attempted to share the specific changes that we consider necessary to the feasibility study section of the November 2017 draft of the rule at the December 11, 2017 AQCAC meeting.

effective NOx controls can be technically implemented on the Baltimore incinerator. MDE must revise this section of the proposed regulation in order to ensure that Wheelabrator does not exclude from the analysis any type of NOx control on the basis that it has not been used on another retrofit.

On September 17, 2018, the Baltimore City Council adopted Resolution 18-0101R, which calls on MDE to require that Wheelabrator's analysis evaluates the technical feasibility of installing the most effective pollution controls that exist for NOx on the Baltimore incinerator and the potential for boiler modification and replacement.[24] Put simply, it is completely unacceptable to Commenters and to the general public[25] for Wheelabrator to be allowed to submit an analysis that fails to assess whether the most effective control technology for NOx can be installed on its Baltimore incinerator. Such an analysis would also be contrary to the express statements made by MDE's own advisory board, AQCAC, which clearly intended for MDE to require that Wheelabrator analyze the potential to meet NOx limits down to 45 ppm on a 24-hour average, which is the limit that would have to be met by a new incinerator in Maryland.[26]

A. Minimum Requirements for the Feasibility Analysis.

As Commenters have previously stated to MDE in their joint letter dated October 6, 2017, the analysis submitted to MDE by Wheelabrator should, *at minimum*, address the feasibility of installing the following at the BRESCO incinerator:

- Optimized SNCR, including analysis of ammonia versus urea injection
- Flue Gas Recirculation
- Fuel nitrogen content reduction strategy
- In-duct Hybrid SNCR/SCR
- Regenerative SCR (RSCR)
- Advanced Natural Gas Injection
- Injection or Combustion Optimization
    - Additional temperature and flow profiling to inform injector height, positions, injection rates, and injector technology
    - Additional flow modeling (in boiler and ducts) and optimization of combustion practices
- Replacement of electrostatic precipitator (ESP) with Baghouses
- Boiler modification to accommodate Covanta Low-NO_x or similar technology
- Boiler replacement

[24] Baltimore City Council, Resolution 18-0101R, details available at https://baltimore.legistar.com/LegislationDetail.aspx?ID=3678576&GUID=35FB7815-0A94-4195-8820-AB5256B6AEE1&Options=ID|Text|&Search=. City Council Resolution 18-0101R is attached as Attachment B.

[25] In addition to the Baltimore City Council's statement on this matter, Commenters are aware that at least 156 individual comments from residents of Baltimore City, Baltimore County, or Anne Arundel County (counties in the Baltimore ozone nonattainment area) have been submitted to MDE calling for a thorough evaluation of the potential to install new controls on the BRESCO incinerator.

[26] A 45 ppm NOx limit on a 24-hour average was set forth in the permit for the proposed Energy Answers incinerator in Baltimore City and Frederick/Carroll Renewable Waste-to-Energy Facility in Frederick County. Both facilities received their air quality permits but neither facility was constructed.

In addition, MDE should collect the following data from Wheelabrator now or as soon as possible in order to evaluate the feasibility study.

- Detailed temperature profile and computational fluid dynamics modeling of gas flow path, including vertical profiling within boiler and along the gas path after it leaves the boiler to the stack.
- Ammonia[27] CEMS data reported on a 1-hour average, provided electronically by Wheelabrator on a semiannual basis.
- Temporal Fuel/waste composition data, provided in a quarterly report.[28]
- Quarterly gas composition sample[29] collected as a 12-hour integrated sample at the first practical location after leaving the boiler. Sample shall be sent to accredited lab and will be analyzed for:
    - O_2, CO, CO_2, NO, NO_2, NH_3, SO_2 and total reduced sulfur.
    - Organics and toxics included within EPA Method TO-15
    - Alkaline Metals (sodium, potassium)
    - Heavy Metals
    - Arsenic

B. <u>MDE Must Revise Subparagraphs E1(b) and (c) in Proposed COMAR 26.11.08.10 to prevent Wheelabrator from excluding the most effective NOx controls from the analysis.</u>

Subparagraphs E(1)(b) and (c) of proposed COMAR 26.11.08.10 are drafted in such a way that Wheelabrator will likely exclude pollution control technology in the first step of the analysis if the technology has not been used in a retrofit on a similar existing incinerator. While Commenters consider it acceptable for Wheelabrator to conclude, after consideration and if supported with an explanation, that a certain technology cannot feasibly be installed on the incinerator, it is completely unacceptable for Wheelabrator to rule it out in the first step of the assessment.

Wheelabrator must be required to analyze the feasibility of installing all of the most effective NOx controls. MDE is fully authorized to craft a regulation ensuring that Wheelabrator submits such a report. Such an analysis would still afford Wheelabrator the option of explaining that it is technically infeasible to install these controls on the incinerator or why Wheelabrator considers said technology cost prohibitive. However, it should not be allowed to rule these technologies out in the first step of the analysis. At bare minimum, MDE must remove the language shown in strike-out below from subparagraph E(1)(b) if it is going to limit the rest of the analysis to the technologies identified in that paragraph.

(b) A written narrative and schematics detailing various

[27]Commenters recognizes that ammonia monitoring is not currently required at the facility, but it should be required.
[28] At the September 22, 2017 stakeholder meeting, Tim Porter stated that Wheelabrator had conducted a study regarding fuel NO_x going back to regulation development in the mid-90's, and found that there was limiting yard waste had no measurable effect on NO_x reductions. Commenters have never received any follow-up communication from Wheelabrator or MDE about this study.
[29] As stated above, Wheelabrator has raised concerns about catalyst poisoning in the past. Gas sampling will show whether catalyst poisoning is a valid concern, and, if so, identify potential ways to work around it.

state-of-the-art NOx control technologies for achieving additional NOx emission reductions ~~from existing MWCs~~, including technologies capable of achieving NOx emission levels comparable to those for a new source~~ in consideration of the overall facility design at Wheelabrator Baltimore Inc.;~~

(c) An analysis of whether each state-of-the-art control technology identified under §E(1)(b) of this regulation could technically be implemented at the Wheelabrator Baltimore Inc. facility;

C. MDE Should Revise Subparagraph E(2) in Proposed COMAR 26.11.08.10 to require that additional information be provided within a defined time frame.

Subparagraph E(2) of Proposed COMAR 26.11.08.10 requires that Wheelabrator Baltimore submit additional information to MDE upon written request. This section should not allow Wheelabrator to engage in further foot-dragging but should require that the additional information must be submitted to MDE within a defined time frame. Commenters recommend that MDE revise the regulation to require that the information must be submitted within 30 days of the date of MDE's written request unless Wheelabrator can show good cause for why it should have 60 days from the date of the written request.

III. MDE Must Revise the Preamble to the Proposed Rule to State that MDE will Commence a Second Rulemaking In 2020 In Order To Adopt Stronger NOx Limits for the Wheelabrator Incinerator.

The preamble to the proposed rule does not include a statement about MDE's future rulemaking process in accordance with statements made by MDE senior staff to AQCAC. During the AQCAC meeting on December 11, 2017, Mr. George (Tad) Aburn, the Director of MDE's Air & Radiation Administration, stated to AQCAC that the preamble to the regulation would state that MDE would move ahead and adopt new NOx limits for the Wheelabrator incinerator after receiving the feasibility analysis.[30] The preamble to the proposed regulation does not include such a statement, and, in fact, makes only one extremely vague reference to a future rulemaking. In the first paragraph, the preamble states that "[t]he purpose of this action is to . . . establish new . . . analysis of possible additional NOx emission control requirements under COMAR."

MDE has represented to its advisory council on air regulations that the preamble to the rule would include a statement about MDE's adoption of additional NOx limits after receiving the feasibility study. This statement was made in the context of a discussion among AQCAC members about whether MDE should have included a presumptive limit in the rule in order to ensure the adoption of stronger limits for the BRESCO plant in the future. AQCAC ultimately concluded that MDE would, in good faith, require stronger limits based on the feasibility study. MDE must revise the preamble so that it is consistent with the representations made to AQCAC.

[30] Recording of AQCAC December 11, 2017 meeting at 2:54:23, *available at* http://mdewin76.mde.state.md.us/MDEMeetings/ARMA_Audio_Files/AQCAC_12_11_17.MP4; *see also* recording at 2:52:45.

IV. MDE Must Revise the Proposed Rule to Clarify Requirements During Startup and Shutdown Events.

In general, Commenters appreciate MDE's approach of requiring mass-based limits that correspond with the concentration-based 24-hour NOx limits during startup and shutdown events of no more than 3 hours each. However, the proposed regulation is not sufficiently clear about the averaging period for startup and shutdown limits and how startup and shutdown events affect the time period during which the concentration-based 24-hour limits are measured. MDE must revise the proposed regulation to clarify. In addition, the methodology for calculating the mass-based emissions for Wheelabrator during startup and shutdown is based on what appears to be a very shaky assumption about the relationship between measured steam flow and stack flow. MDE should revise the proposed regulation so that Wheelabrator is required to calculate compliance with mass-based limits by using flow data from stack flow monitors in the same way that is required for the Montgomery County Resource Recovery Facility ("MCRRF").

A. MDE Must Clarify the Averaging Period for Mass-Based Startup Shutdown Limits.

MDE has proposed mass-based limits during startup and shutdown events, which events are limited by definition to no more than 3 hours. However, the startup and shutdown limits are measured on a 24-hour average. It appears that MDE is contemplating that the 24-hour periods that include startup and shutdown events will combine up to 3 hours of mass-based limits with no less than 21 hours of concentration-based limits.

As Commenters stated in their October 6, 2017 joint comments, we believe that the startup and shutdown emissions should be averaged over the period of the actual event, i.e. over 3 hours at most. However, if MDE proceeds with an approach that blends startup/shutdown emissions with emissions during normal operations, then the proposed regulation should be revised to clarify this. Specifically, MDE should make add the text shown below in bold to proposed COMAR 26.11.08.10M(1)[31]:

> M. Compliance with the NOx Mass Loading Emission Limitation for the Wheelabrator Baltimore Inc.
> (1) Compliance with the NOx mass loading emission limitation for periods of startup and shutdown in §D(2) of this regulation shall be demonstrated by calculating the 24-hour average of all hourly average NOx emission concentrations from continuous emission monitoring systems **for the 24-hour period that begins with the first hour of the startup or shutdown event.**

B. MDE Must Clarify How Startup and Shutdown Events Affect the Period Over Which The 24-Hour Limits for Normal Operations Are Measured.

In addition, MDE should clarify how a startup or shutdown event affects the period over which the 24-hour limits applicable during normal operations are calculated. Proposed COMAR

[31] MDE should also make the same change to proposed COMAR 26.11.08.10L(1), which applies to the Montgomery County facility.

26.11.08.10(D)(3)-(4) states the following with respect to the 24-hour limits during normal operations:

> (3) On days when the unit is in startup, the NOx 24-hour block average emission rate under §B of this regulation will apply for the 24-hour period after startup is completed.
>
> (4) On days when the unit is in shutdown, the NOx 24-hour block average emission rate under §B of this regulation will apply for the 24-hour period prior to the commencement of shutdown.

Under these provisions, if a startup event were to occur from midnight until 3 am on a given day, the concentration-based limit would be measured from 3 am until 3 am the following day. However, this is contradicted by the definition of "24-hour block average emissions rate," which term is used to identify the emissions limits in proposed COMAR 26.11.08.10(B) and contemplates a block that is always from midnight to midnight. The proposed definition of "24-hour block average emission rate" is:

> a value of NOx emissions in ppmv, corrected to 7 percent oxygen, calculated by:
> (a) Summing the hourly average ppmv of NOx emitted from the unit during 24 hours between midnight of one day and ending the following midnight, excluding periods of startup and shutdown; and
> (b) Dividing the total sum of hourly NOx ppmv values emitted during 24 hours between midnight of one day and ending the following midnight by 24.[32]

Commenters recommend that MDE stick with an approach that measures the 24-hour limits during normal operations as between midnight and midnight with startup and shutdown periods excluded but with the following changes (strikeout shows removed text and bold shows added text). The changes below also reflect the fact that it is not appropriate to divide emissions during normal operations by 24 if they do not reflect 24 hours of actual data.

> (b) Dividing the total sum of hourly NOx ppmv values emitted during 24 hours between midnight of one day and ending the following midnight by ~~24~~ **the number of hours for which data is available after startup and shutdown periods have been excluded.**

C. <u>MDE Should Require that the Mass-Based Startup and Shutdown Limits for the BRESCO Incinerator Must Be Calculated Based on Stack Flow Rates Derived From Flow Monitors</u>.

Under proposed COMAR 26.11.08.10M(2), Wheelabrator is to calculate its mass-based limits during startup and shutdown by utilizing "the applicable Prevention of Significant

[32] Proposed COMAR 26.11.08.01(B)(62).

Deterioration calculation methodology[,]" which is set forth in its Title V permit.[33] However, this methodology uses a "stack test air flow to steam flow factor" assuming a linear relationship between steam flow and stack flow. As demonstrated in the attached stack test data from the BRESCO incinerator,[34] this relationship does not appear to be an accurate predictor of stack flow rate even during normal operations at high steam loads. Additionally, Commenters have not seen any evidence to suggest this relationship will accurately predict stack air flow during periods of startup and shutdown. During startup, high levels of excess air are introduced into the furnace to establish good combustion, which is likely to have a direct impact on stack air flow.[35] Commenters are very concerned about the proposed use of this methodology for calculating total emissions during startup and shutdown and especially concerned it will make it difficult to assess compliance with mass-based emission limits.

According to statements in Wheelabrator's 2016 Relative Accuracy Test Audit ("RATA") documents,[36] there are stack flow monitors currently installed on the BRESCO incinerator.[37] It would make far more sense and be far more accurate for Wheelabrator to use air flow data from these existing monitors to calculate the mass-based limits as is required at the MCRRF. MDE should revise proposed COMAR 26.11.08.10(M)(2) (applicable to BRESCO) so that it mirrors proposed COMAR 26.11.08.10(L)(2) (applicable to MCRRF). MDE should also revise COMAR 26.11.08.10(M)(2) so that it reflects the fact that not all startup or shutdown events will take the maximum time of 3 hours that is allowed for such an event. Commenters believe that COMAR 25.11.08.10(M)((2) should read as follows:

> (2)The calculations in §M(1) of this regulation shall utilize stack flow rates derived from flow monitors, for all the hours during the startup or shutdown period and the remaining hours of the 24-hour period.

V. MDE Should Require Installation of Ammonia CEMS at BRESCO.

Commenters have ongoing concerns regarding the apparent failure to monitor ammonia slip at the facility. As stated within the June 2017 Fuel Tech Study, "ammonia slip needs to be

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[33]Wheelabrator Baltimore, L.P., Title V Permit No. 24-510-01886 (April 1, 2014) p. 39.

[34] Table 2-17 (Summary of Run-by-Run Air Flow Results), Emissions Testing Report 16009 Volume I – Text and Appendices A and B Performed by Testar Engineering P.C. for Wheelabrator Technologies, Inc. at the Wheelabrator Baltimore, LP Baltimore Maryland Units 1, 2, and 3 SDA Inlets and ESP Outlets (May 2016) p. 2-19. Excerpts attached hereto as Attachment C.

[35]Preamble to the Proposed Rule. 45:17 Md. R. at 810 (Aug. 17, 2018) ("During periods of startup and shutdown, additional ambient air is introduced into the furnace. Applying the correction factor of 7 percent oxygen during these periods grossly misrepresents the actual NOx emissions produced from startup and shutdown operations. Therefore, an equivalent mass-based emission limit is substituted.")

[36] 2016 is the most recent RATA test that Commenters possess, but we have no reason to believe that the stack flow monitors have been removed from the BRESCO incinerator since then.

[37] Annual CEM RATA Testing #16009R Text and Appendices performed by Testar Engineering P.C. for Wheelabrator Technologies, Inc. at the Wheelabrator Baltimore, LP Baltimore Maryland Units 1, 2, and 3 SDA Inlets and ESP Outlets (May 2016) ("2016 RATA)") p. 3-3 ("Each outlet is equipped with a stack flow rate monitoring system consisting of an Optical Scientific Inc (OSI) Model OFS 2000.") *See also* Table 3-1 (Facility CEMS Analyzers), 2016 RATA, p. 3-2 (showing a flow rate monitor at each ESP outlet). Excerpts attached hereto at Attachment D.

determined given its importance in determining the effectiveness of the SNCR process."[38] Ammonia slip is a key parameter to measure as an indicator of whether the urea is being released into the ideal temperature range and is given adequate residence time to react for SNCR systems. Although the facility does not currently have a concentration-based ammonia slip limit within its Title V/Part 70 permit, Wheelabrator has acknowledged that ammonia slip is a key design parameter for the facility to determine its ability to meet NOx emission limits without resulting in visible emissions.[39]

It appears fairly certain that the facility has not been routinely and continuously monitoring ammonia with CEMS or that MDE has received annual ammonia slip CEMS data from the facility. Commenters are also concerned about the absence of a limit for ammonia slip in the proposed rule especially as Connecticut includes such a limit in its incinerator NOx RACT regulations. EIP also provided examples in its May 9, 2017 comments of similar Wheelabrator incinerators in other states that are subject to a NOx limit of 150 ppm on a 24-hour basis and an ammonia slip limit of 20 ppm.

Ammonia slip measurement is critical for ongoing optimization, for the feasibility study of alternatives, and is an essential part of maintaining efficient operations in the future if any combination of SNCR or SCR is chosen as the control technology. Given its importance in monitoring the success of control technology, there appears to be no reason for MDE not to require use of ammonia CEMS at the incinerator and no reason for not requiring an ammonia slip limit. MDE should revise the proposed regulation to include an ammonia slip limit of no higher than 20 ppm and should require that ammonia CEMS be installed to monitor ammonia slip, as also discussed in EIP and CBF's October 6, 2017 comments, EIP's May 9, 2017 comments, and the May 2017 Sahu Report.

Thank you for considering our comments.

Sincerely,

Leah Kelly, Senior Attorney
Ben Kunstman, Engineer
Environmental Integrity Project
1000 Vermont Ave. NW, Suite 1100
Washington, D.C. 20005
Phone: 202-263-4448 (Kelly)
202-263-4458 (Kunstman)
Email: lkelly@environmentalintegrity.org
bkunstman@environmentalintegrity.org

[38] June 2017 Fuel Tech Study, p. 5.
[39] Wheelabrator Technologies PowerPoint, Wheelabrator Baltimore NOx RACT Review January 17, 2017, pp. 5-7, a http://mde.maryland.gov/programs/Regulations/air/Documents/SHMeetings/MunicipalWasteCombustors/MWCWheelabratorNOxRACTPresentation.pdf

Alison Prost, Esq.
Maryland Executive Director
Chesapeake Bay Foundation
6 Herndon Ave.
Annapolis, MD 21403
Phone: 410-268-8816
Email: aprost@cbf.org

Food & Water Watch • 3121 St. Paul Street, Suite 28 • Baltimore, MD 21218
T +410.394.7650 • foodandwaterwatch.org

Mr. Randy Mosier, Chief of the Regulation Division
Air and Radiation Administration, Maryland Department of the Environment
1800 Washington Blvd, Baltimore, MD 21230

Mr. Mosier,

I am Mitch Jones, Senior Policy Advocate with Food & Water Watch and a resident of Baltimore City. On behalf of our 41,000 members and supporters across Maryland, I am writing to urge MDE to approve the proposed NOx RACT standards for incinerators.

The proposed standards would require the Wheelabrator Baltimore incinerator (BRESCO) to meet a NOx limit of 150 ppm on a 24-hour average starting on May 1, 2019 and a NOx limit of 145 ppm on a 30-day average starting on May 1, 2020.

The incinerator currently releases approximately 205 ppm of NOx. It is the largest stationary emitter of NOx in the City. This plant emitted 1,141 tons of NOx in 2016, making it the state's fifth largest emitter of that pollutant. Eliminating a quarter of the NOx emitted by the BRESCO incinerator would create an immense health benefit for the Greater-Baltimore community, and would be an important step in moving away from combustion energy sources.

As you know, NOx reacts with volatile organic compounds to create ground-level ozone, as well as particulate matter that negatively impacts respiratory health. It exacerbates respiratory illnesses such as asthma. 12.4% of adults in Baltimore City currently suffer from asthma, compared to 8.4% statewide and 8.6 % nationally. 20% of children in Baltimore City have asthma, compared to the national average of 9.4%. Baltimore's pediatric hospitalization rate is one of the highest in the nation, and asthma accounts for the greatest loss of missed work and school days in our city.

BRESCO's NOx emissions have remained about the same over the last decade, while emissions from coal plants and the state's other incinerator have for the most part significantly declined. BRESCO needs to be held accountable for the pollution it has created, and have stricter regulations enforced in order to safeguard our community.

There is strong public support for these regulations, or even more stringent ones, in Baltimore, and MDE should respond. Additionally, the Baltimore City Council has passed a resolution calling for a 45-ppm limit for the BRESCO incinerator.

We believe that approval of these standards is a good step towards helping to protect vulnerable communities in Baltimore City and urge you again to please approve the proposed NOx RACT standards for incinerators.

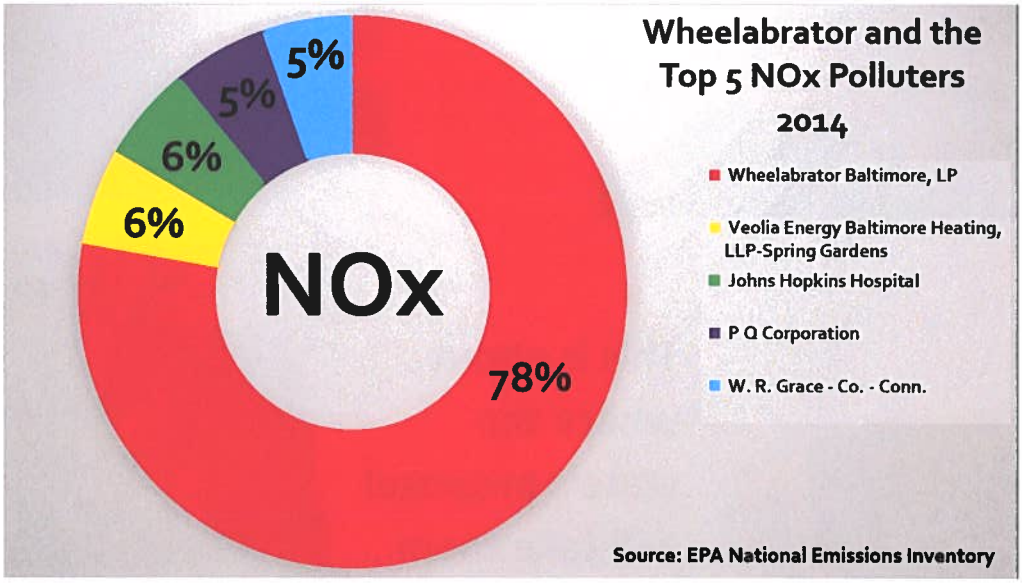
Sincerely,

Mitch Jones
Senior Policy Advocate

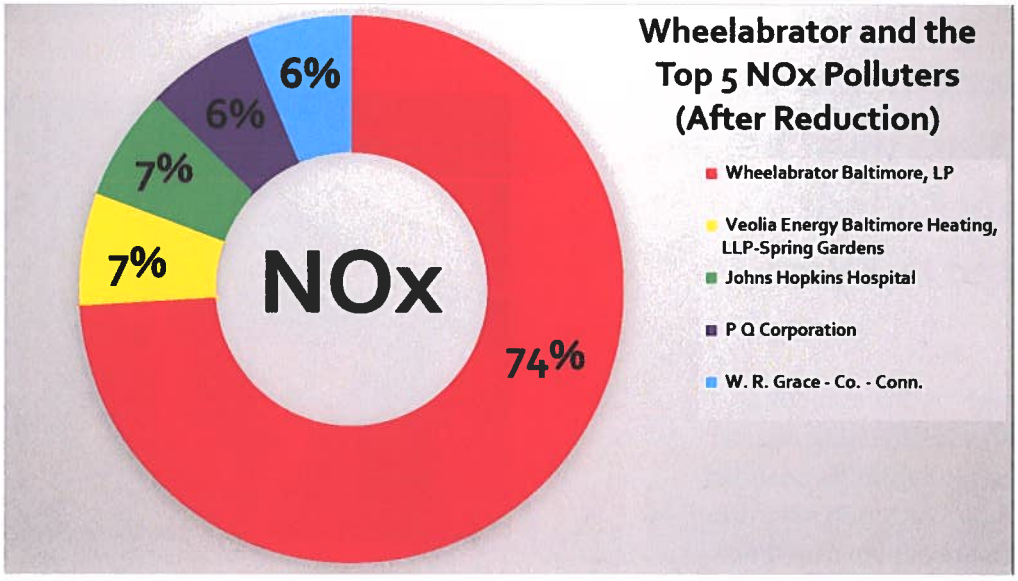
National Headquarters • 1616 P St. NW, Suite 300 • Washington, DC 20036 • T +202.683.2500 • F +202.683.2501

Wheelabrator Baltimore Emissions Comparisons

Top 5 Point (Stationary) Sources for NOx in Baltimore (2014)



What would the proposed reduction by MDE/Wheelabrator do?



Basically, nothing.

Let's think about it with temperature...

This is about where Wheelabrator is with its NOx emissions:

This is about where the state's proposal will take them...

This is where new trash incinerators must be, and what City Council requested last year...

'Like' us on Facebook at
Energy Justice Network and
Clean Air Baltimore Coalition
Follow us on Twitter **@CleanAirBmore**
Learn more about incineration at
energyjustice.net/incineration
Learn about Wheelabrator at **cleanairbmore.org**

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

India Kushner <inkus001@gmail.com> Wed, Sep 19, 2018 at 12:42 PM
Reply-To: inkus001@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Ms. India Kushner
2300 N Calvert St
Apt 202
Baltimore, MD 21218
347-218-1751

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Irina Spector-Marks <spectormarksi@gmail.com> Fri, Sep 21, 2018 at 2:14 PM
Reply-To: spectormarksi@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Irina Spector-Marks
1913 Fairbank Rd
Baltimore, MD 21209

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

1 message

Jack Roallaun <ilaroal43@comcast.net> Fri, Sep 21, 2018 at 2:42 PM
Reply-To: ilaroal43@comcast.net
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Jack Roallaun
3722 Thomas Point Road
Annapolis, MD 21403
410-268-8527

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Jill Vasbinder Morrison <Jillvasbinder@gmail.com>
Reply-To: Jillvasbinder@gmail.com
To: randy.mosier@maryland.gov

Mon, Sep 17, 2018 at 9:17 AM

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Ms. Jill Vasbinder Morrison
2417 Fleet St
Baltimore, MD 21224
443-742-9371

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comment on proposed incinerator NOx regulation, COMAR 26.11.08

Jill Warzer <jwarzer@gmail.com> Mon, Sep 17, 2018 at 9:26 AM
Reply-To: jwarzer@gmail.com
To: randy.mosier@maryland.gov

Dear Mr. Mosier,

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for our region. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a feasibility study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Mr. Mosier, I retired recently after 19 years in City Schools. I can tell you that asthma, and students missing school for asthma problems is real. We must have clean air in Baltimore, and everywhere.! I try to reduce my need for incineration by recycling and composting. I think Mayor Pugh's interest in citywide composting is great!
Thanks for your efforts.

Jill Warzer
Dobler Ave. 21218
Baltimore, MD 21218
4105982684

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Jon Hyman <jonadjoint@gmail.com> Tue, Sep 18, 2018 at 12:14 PM
Reply-To: jonadjoint@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.
The Federal Government no longer cares about air pollution and the damage it can do so we have to be even more assertive in protecting our air quality.
Jon Hyman, 1104 S Kenwood Avenue, Baltimore

Mr. Jon Hyman
1104 S Kenwood Ave
Baltimore, MD 21224
NA

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comment on proposed incinerator NOx regulation, COMAR 26.11.08

Jonathan Law <jon.k.law@gmail.com> Wed, Sep 19, 2018 at 1:59 PM
Reply-To: jon.k.law@gmail.com
To: randy.mosier@maryland.gov

Dear Mr. Mosier,

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for our region. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a feasibility study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Jonathan Law
1022 W. Lombard St
Baltimore, MD 21223
301-908-5080

Randy Mosier -MDE- <randy.mosier@maryland.gov>

COMAR 26.11.08

Julie Burris <burrisdesign@comcast.net> Fri, Sep 14, 2018 at 12:29 PM
To: randy.mosier@maryland.gov

My name is Julie Burris and I am a long-time resident of Baltimore. I'm grateful to have the opportunity to make a comment to MDE about the BRESCO trash incinerator.

Tighter regulation of emissions is a big step forward in protecting the citizens of our city from asthma and other respiratory diseases. The toll that asthma takes on our children is an unfair burden on them, and when kids can't get to school because of health problems and adults are missing work, that becomes a problem for all of us.

So, I am glad to see that MDE plans to enact a stricter regulation of BRESCO. It is important for Baltimore that MDE continues to hold the incinerator to higher and higher standards as technology improves.

And it is important for everyone that greenhouse gas emissions be cut as well. Florence and the many other tropical storms that are active as I write are another reminder of what these emissions have already done to make life on this planet and in this state more hazardous.

So I urge MDE to commit to continuing credible study and additional regulation that will set much stronger limits to pollution of all kinds.

Thank you for your attention and all you do for Maryland.

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Jung Elky <jelky@gcmeadows.com>
Reply-To: jelky@gcmeadows.com
To: randy.mosier@maryland.gov

Mon, Sep 17, 2018 at 9:35 AM

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Ms. Jung Elky
11716 Teri Lynn Dr
Fulton, MD 20759
2405686175

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Justin Gallardo <jsbgallardo@gmail.com> Wed, Sep 19, 2018 at 12:57 PM
Reply-To: jsbgallardo@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Justin Gallardo
6201 Hilltop Ave
Baltimore, MD 21206
410-818-7002

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Justina Gruling <blossomwolf24@frontier.com> Thu, Sep 13, 2018 at 6:55 PM
Reply-To: blossomwolf24@frontier.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Ms. Justina Gruling
163790 Townline Rd
Wausau, WI 54403
7153707427

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Kathy Becraft <kkbecraft@comcast.net>
Reply-To: kkbecraft@comcast.net
To: randy.mosier@maryland.gov

Fri, Sep 21, 2018 at 3:34 PM

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Kathy Becraft
1508 Gordon Cove Dr
Annapolis, MD 21403
443-463-1772

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

1 message

Kelly Casillo <kellycasillo@gmail.com> Fri, Sep 21, 2018 at 2:40 PM
Reply-To: kellycasillo@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Kelly Casillo
1203 Thomas Point Ct
Annapolis, MD 21403
240-354-7765

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comment on proposed incinerator NOx regulation, COMAR 26.11.08

Kris Cook <kristingamzoncook@gmail.com>
Reply-To: kristingamzoncook@gmail.com
To: randy.mosier@maryland.gov

Fri, Sep 21, 2018 at 5:00 PM

Dear Mr. Mosier,

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for our region. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a feasibility study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Mrs. Kris Cook
9408 Jongroner Ct
Potomac, MD 20854
2404836789

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Kristen Howard <jandkhoward0420@gmail.com>
Reply-To: jandkhoward0420@gmail.com
To: randy.mosier@maryland.gov

Mon, Sep 17, 2018 at 2:50 PM

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Mrs. Kristen Howard
1515 Alconbury Rd Apt H
Essex, MD 21221
15712246705

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Kurt Schwarz <krschwa1@verizon.net> Mon, Sep 17, 2018 at 9:47 AM
Reply-To: krschwa1@verizon.net
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

With family members who suffer from asthma, we welcome cleaner air.

Mr. Kurt Schwarz
9045 Dunloggin Ct
9045 Dunloggin Ct.
Ellicott City, MD 21042
410-461-1643

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

1 message

L. Sandler <lsandlermd@gmail.com> Fri, Sep 21, 2018 at 2:21 PM
Reply-To: lsandlermd@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

L. Sandler
1819 Fairbank Rd
Baltimore, MD 21209

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Leah Malone <lrmalone@gmail.com>
Reply-To: lrmalone@gmail.com
To: randy.mosier@maryland.gov

Wed, Sep 19, 2018 at 12:45 PM

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Ms. Leah Malone
119 S Wolfe St, #3
Baltimore, MD 21231
607-201-6641

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comment on proposed incinerator NOx regulation, COMAR 26.11.08

Leslie Kopchinski <lezleekay@gmail.com>
Reply-To: lezleekay@gmail.com
To: randy.mosier@maryland.gov

Mon, Sep 17, 2018 at 9:00 AM

Dear Mr. Mosier,

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for our region. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a feasibility study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Ms. Leslie Kopchinski
4638 Harcourt Road
Baltimore, MD 21214
410-919-8194

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

1 message

Lindsay Folkmann <lindsay.folkmann@gmail.com> Fri, Sep 21, 2018 at 2:38 PM
Reply-To: lindsay.folkmann@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Lindsay Folkmann
2227 Rogene Drive
#204
Baltimore, MD 21209
615-686-9915

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

1 message

Lisa Jones <lmjones215@gmail.com> Fri, Sep 21, 2018 at 3:38 PM
Reply-To: lmjones215@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Lisa Jones
23 N Milton Ave
Baltimore, MD 21224
404-441-3157

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

1 message

Lorelei Meier <lmeier1991@gmail.com> Fri, Sep 21, 2018 at 1:53 PM
Reply-To: lmeier1991@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Lorelei Meier
6207 Elmbank Ave
Baltimore, MD 21209
585-402-3137

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Lori Nicolle <Lnicolle@alumni.rutgers.edu> Tue, Sep 18, 2018 at 12:17 PM
Reply-To: Lnicolle@alumni.rutgers.edu
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.
It really should be a no-brainer that cleaner air benefits everyone. The TRUE cost of dirty air should be taken into account and I strenuously object to subsidizing an incinerator with my health.

Ms. Lori Nicolle
2812 E Baltimore St
Baltimore, MD 21224
NA

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comment on proposed incinerator NOx regulation, COMAR 26.11.08

Louise Harmony <harmonylouise3@gmail.com> Wed, Sep 12, 2018 at 8:10 PM
Reply-To: harmonylouise3@gmail.com
To: randy.mosier@maryland.gov

Dear Mr. Mosier,

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for our region. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a feasibility study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

These reductions will help protect the health of residents in Baltimore City, Baltimore County, Harford County, and Anne Arundel County -- ALL OF WHICH ARE IN AN AREA THAT EXCEED FEDERAL OZONE REQUIREMENTS.

In addition, I have asthma and hay fever. The more my body has to struggle to breath normally, THE MORE SENSITIVE I GET TO ** ANY ** INCREASE IN AIR POLLUTION.

Ms. Louise Harmony
5105 Walter Avenue
Baltimore, MD 21214
4102540489

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

1 message

Luis Quiroga <luishquiroga@gmail.com> Fri, Sep 21, 2018 at 3:43 PM
Reply-To: luishquiroga@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Luis Quiroga
22 N Milton Ave
Baltimore, MD 21224
513-748-9696

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

1 message

Lydia Seidler <rainrunner36@gmail.com> Fri, Sep 21, 2018 at 2:22 PM
Reply-To: rainrunner36@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Lydia Seidler
6014A Green Meadow Pkwy
Baltimore, MD 21209

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Mackenzie Pope <mackenzie.pope@colorado.edu> Mon, Sep 17, 2018 at 11:41 AM
Reply-To: mackenzie.pope@colorado.edu
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Ms. Mackenzie Pope
42 W Biddle St Apt 1R
Baltimore, MD 21201
2522301529

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Madeline Amend <mamend@mica.edu> Wed, Sep 19, 2018 at 12:41 PM
Reply-To: mamend@mica.edu
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Ms. Madeline Amend
1811 Eutaw Place
Baltimore, ME 21217
816-777-8201

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

1 message

Margaret Campbell <git4d@comcast.net> Fri, Sep 21, 2018 at 2:13 PM
Reply-To: git4d@comcast.net
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Margaret Campbell
1811 Dixon Rd
Baltimore, MD 21209
410-664-2538

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Mary Cox <mary.cox1@verizon.net> Mon, Sep 17, 2018 at 9:33 AM
Reply-To: mary.cox1@verizon.net
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Ms. Mary Cox
5655 Phelps Luck Dr
Columbia, MD 21045
410-965-2310

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Mary Triandafilou <mtrianda28@gmail.com> Mon, Sep 17, 2018 at 1:50 PM
Reply-To: mtrianda28@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Ms. Mary Triandafilou
808 S Sharp St
Baltimore, MD 21230
4106291589

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

1 message

Matthew O'Connor <m.oconnor305@gmail.com> Fri, Sep 21, 2018 at 2:36 PM
Reply-To: m.oconnor305@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Matthew O'Connor
1216 Cross Rd
Baltimore, MD 21405

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Melinda Walker <walkermelindab@gmail.com> Wed, Sep 19, 2018 at 12:42 PM
Reply-To: walkermelindab@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Ms. Melinda Walker
2007 Fleet St
Baltimore, MD 21231
410-812-8002

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Michael Hindle <passivetopositive@gmail.com> Mon, Sep 17, 2018 at 10:33 AM
Reply-To: passivetopositive@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Mr. Michael Hindle
2027 Edmondson Ave
Catonsville, MD 21228
240-431-1281

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Michael O'Donnel <makeitgroove@gmail.com>
Reply-To: makeitgroove@gmail.com
To: randy.mosier@maryland.gov

Wed, Sep 19, 2018 at 12:57 PM

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Michael O'Donnel
2736 Queensberry Dr
Huntingtown, MD 20693
301-785-4440

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

1 message

Michel Swartz <mswartz02@msn.com> Fri, Sep 21, 2018 at 2:04 PM
Reply-To: mswartz02@msn.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Michel Swartz
2208 Rogene Dr
Baltimore, MD 21209
410-241-5314

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Monika Springer Schnell <monikaspringer@schnell.us> Fri, Sep 21, 2018 at 1:56 PM
Reply-To: monikaspringer@schnell.us
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Monika Springer Schnell
2336 Bright Leaf Way
Baltimore, MD 21209
410-591-8589

Comments on COMAR 26.11.08: Control of Incinerators

Nikki Wojtalik <nwojtalik@hotmail.com>
Reply-To: nwojtalik@hotmail.com
To: randy.mosier@maryland.gov

Fri, Sep 21, 2018 at 7:33 AM

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Mrs. Nikki Wojtalik
3723 Green Oak Ct.
Parkville, MD 21234
4105600881

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Pat Heidel <pheidel1@verizon.net> Mon, Sep 17, 2018 at 12:16 PM
Reply-To: pheidel1@verizon.net
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Ms. Pat Heidel
6060 Wild Ginger Ct
Columbia, MD 21044
4108846983

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Paul Hanley <paulfromboston@gmail.com> Fri, Sep 21, 2018 at 2:19 PM
Reply-To: paulfromboston@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Paul Hanley
1700 Regent Rd
Baltimore, MD 21209

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

1 message

Peter Bertrand <pmbertrand@verizon.net> Fri, Sep 21, 2018 at 2:39 PM
Reply-To: pmbertrand@verizon.net
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Peter Bertrand
1220 Thomas Point Court
Annapolis, MD 21403
410-280-9028

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Philip Ateto <pateto@vt.edu>
Reply-To: pateto@vt.edu
To: randy.mosier@maryland.gov

Wed, Sep 19, 2018 at 12:45 PM

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Mr. Philip Ateto
1800 Poplar Ave
Annapolis, MD 21401
443-223-8202

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Reeta Khindri <rkk798@gmail.com>
Reply-To: rkk798@gmail.com
To: randy.mosier@maryland.gov

Tue, Sep 18, 2018 at 1:08 AM

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Ms. Reeta Khindri
604 Valley Ln
Towson, MD 21286
2403626695

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

1 message

Robb Fish <rfish@verizon.net> Fri, Sep 21, 2018 at 2:26 PM
Reply-To: rfish@verizon.net
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Robb Fish
1263 Creek Dr
Annapolis, MD 21403

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

1 message

Robin Eckman <bobreckman@gmail.com> Fri, Sep 21, 2018 at 2:24 PM
Reply-To: bobreckman@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Robin Eckman
3303 Booker Rd
Annapolis, MD 21403
443-254-7457

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Roman Machan <romanandkathy@verizon.net> Mon, Sep 17, 2018 at 1:01 PM
Reply-To: romanandkathy@verizon.net
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Mr. Roman Machan
718 Ticonderoga Ave
Severna Park, MD 21146
4436946169

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Ronald Tate <the2tates@verizon.net> Tue, Sep 18, 2018 at 9:26 AM
Reply-To: the2tates@verizon.net
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.
While converting trash to energy is a great idea, it is only beneficial when the full impact is taken into account. Please continue your efforts to make this concept a win-win situation.

Mr. Ronald Tate
4091 Waterview Drive
Edgewater, MD 21037
410-798-0447

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Ross Hackett <rosshackett@gmail.com> Wed, Sep 19, 2018 at 12:53 PM
Reply-To: rosshackett@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Ross Hackett
640 E 35th St
Baltimore, MD 21218
412-334-8005

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Russell Skeberdis <russellskeberdis@gmail.com> Fri, Sep 21, 2018 at 1:45 PM
Reply-To: russellskeberdis@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Russell Skeberdis
3 First Tee Ct
Baltimore, MD 21209
410-205-0546

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

1 message

Ruth Wood <nrwood51@gmail.com> Fri, Sep 21, 2018 at 2:25 PM
Reply-To: nrwood51@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Ruth Wood
3355 Arundel on the Bay Rd
Annapolis, MD 21403

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

1 message

Safina Kleinman <safinak@gmail.com> Fri, Sep 21, 2018 at 1:55 PM
Reply-To: safinak@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Safina Kleinman
2116 Northcliff Dr
Baltimore, MD 21209
410-302-7923

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Sander Zaben <sander.zaben@gmail.com>
Reply-To: sander.zaben@gmail.com
To: randy.mosier@maryland.gov

Mon, Sep 17, 2018 at 1:23 PM

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Mr. Sander Zaben
8712 Haycarriage Ct
Ellicott City, MD 21043
401-750-3969

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comment on proposed incinerator NOx regulation, COMAR 26.11.08

Sarah Grossman <elkinssarah@gmail.com> Fri, Sep 14, 2018 at 9:10 AM
Reply-To: elkinssarah@gmail.com
To: randy.mosier@maryland.gov

Dear Mr. Mosier,

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for our region. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a feasibility study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Mrs. Sarah Grossman
1349 w 41st st
Baltimore, MD 21211
2488843710

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Sean Scully <notnotsean@gmail.com> Mon, Sep 17, 2018 at 9:06 AM
Reply-To: notnotsean@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health. I live in Pigtown and my family is worried about how much pollution is in our city's air.

Mr. Sean Scully
1120 Cleveland St
Baltimore, MD 21230
202-507-9224

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Sharon Davlin <sldavlin4@gmail.com> Mon, Sep 17, 2018 at 9:10 AM
Reply-To: sldavlin4@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Ms. Sharon Davlin
327 Overbrook Rd
Baltimore, MD 21212
4103774574

Comments on COMAR 26.11.08: Control of Incinerators

Sonja Baris <sonja_baris@hotmail.com>
Reply-To: sonja_baris@hotmail.com
To: randy.mosier@maryland.gov

Fri, Sep 14, 2018 at 2:05 PM

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Ms. Sonja Baris
86 Grove St Apt 2
Clinton, MA 01510
9783331166

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comment on proposed incinerator NOx regulation, COMAR 26.11.08

Stacy Miller <stacy@chesapeakeclimate.org>
Reply-To: stacy@chesapeakeclimate.org
To: randy.mosier@maryland.gov

Wed, Sep 12, 2018 at 4:40 PM

Dear Mr. Mosier,

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for our region. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a feasibility study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Ms. Stacy Miller
4115 wisconsin Ave NW
washington, DC 29916
5188520836

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Steve Matters, Jr <smatters318@gmail.com> Mon, Sep 17, 2018 at 10:17 AM
Reply-To: smatters318@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Mr. Steve Matters, Jr
515 Jeremy Ct
Severna Park, MD 21146
4432315398

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

1 message

Stu Cushing <cushingstu@gmail.com> Fri, Sep 21, 2018 at 2:03 PM
Reply-To: cushingstu@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Stu Cushing
2116 Northcliff Dr
Baltimore, MD 21209
443-928-1503

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

Susan Manning <esmanning@gmail.com>
Reply-To: esmanning@gmail.com
To: randy.mosier@maryland.gov

Fri, Sep 21, 2018 at 1:43 PM

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Susan Manning
5705 Ranny Rd
Baltimore, MD 21209
410-340-8091

MARYLAND

Randy Mosier -MDE- <randy.mosier@maryland.gov>

SWANA Comments - COMAR 26.11.08 Control of Incinerators

David Biderman <dbiderman@swana.org> Fri, Sep 21, 2018 at 1:14 PM
To: "randy.mosier@maryland.gov" <randy.mosier@maryland.gov>
Cc: Jesse Maxwell <jmaxwell@swana.org>

Mr. Mosier – attached are SWANA's comments on the proposed regulations. Please feel free to contact me or Jesse Maxwell at SWANA if you have any questions.

Thank you.

David Biderman

Executive Director and CEO

Solid Waste Association of North America

1100 Wayne Ave, Suite 650

Silver Spring, MD, 20910

direct 240-494-2254, cell 703-967-2616

office 301-585-2898, fax 301-589-7068

dbiderman@swana.org

SWANA
SOLID WASTE ASSOCIATION of North America

September 21, 2018

VIA EMAIL

Randy Mosier

Chief of the Regulation Division

Air and Radiation Administration

Maryland Department of the Environment
1800 Washington Boulevard, Suite 730

Baltimore, Maryland 21230-1720

RE: COMAR 26.11.08 Control of Incinerators

Dear Mr. Mosier:

The Solid Waste Association of North America (SWANA) is an organization of over 10,000 public and private sector solid waste professionals across North America, including over 270 members within the State of Maryland. SWANA's mission is to advance from solid waste management to resource management with the core purpose to advance the responsible management of solid waste as a resource. While the Maryland Department of the Environment (DEQ) is currently accepting public comment on new NOx RACT requirements for the state's waste-to-energy facilities, SWANA would like to take the opportunity to reiterate the important role that waste-to-energy can play as an element of a responsible integrated solid waste management system.

Waste-to-energy technology provides a reliable and renewable source of energy that results in net carbon reductions when compared with most other methods of waste disposal. For this reason, a well-run and maintained waste-to-energy facility can be a valuable component of a local government's integrated solid waste management plan. This would be in conjunction with existing and planned waste prevention, waste reduction and recycling programs.

SWANA's International Board has reviewed and approved the attached Technical Policy (T-8), *Waste to Energy as Part of Integrated Solid Waste Management* which is submitted for reference when evaluating comments on the new proposed requirements for waste-to-energy facilities. It is important to understand how waste-to-energy fits into the USEPA's current waste management hierarchy, the solid waste management plans of the communities they serve, and the long term-needs of local governments. Appropriate public policy mechanisms should be put in place to ensure the viability of waste-to-energy projects, especially in those locations where significant investment by public and private entities has already occurred. Ultimately, sound science and research should be relied upon when evaluating any regulatory proposals.

Thank you for the opportunity to provide comment to DEQ as it evaluates new NOx RACT requirements for the state's waste-to-energy facilities. If you have any questions concerning these comments or waste-to-energy facilities or operations, please feel free to contact Jesse Maxwell, Advocacy & eLearning Program Manager for SWANA, at jmaxwell@swana.org or 240-494-2237.

Sincerely,

David Biderman

CEO & Executive Director

1100 Wayne Avenue • Suite 650 • Silver Spring, Maryland 20910 301.585.2898 phone • 301.589.7068 fax • www.swana.org

2 attachments

image002.jpg
19K

SWANA Technical Policy - Waste to Energy as Part of Integrated Solid Was....pdf
230K

SWANA TECHNICAL POLICY T-8

WASTE TO ENERGY AS PART OF

INTEGRATED SOLID WASTE MANAGEMENT

Background

SWANA supports the recovery of energy from solid waste as an element of integrated solid waste management. For the purposes of this policy, we are defining waste to energy (or energy from waste) as terms used to represent technologies that combust solid waste and recover energy from the waste in the form of steam, heated water or electricity. Other waste conversion technologies that do not involve combustion of the waste are not considered part of this technical policy. Waste to energy technology provides a renewable source of energy and results in net carbon reductions when compared with most other methods of waste disposal. The net carbon reduction is a result of: eliminating landfill methane emissions, recovering metals, and offsetting the burning of fossil fuels.

Policy

The use of waste to energy technology should be consistent with the USEPA's current waste management hierarchy and local government integrated solid waste management plans, that include existing and planned waste prevention, waste reduction and recycling programs. Permitting of waste to energy facilities should be consistent with the established long term needs of local government and their integrated solid waste management plans. Appropriate public policy mechanisms should be put in place to ensure the viability of waste to energy projects. Waste to energy projects are long term projects that require significant upfront capital and the economic feasibility of these projects should be reviewed by financial specialists. The full costs for the siting, design, construction and operation, including residue management and disposal, should be included in the costs assigned to a waste to energy facility, within an integrated solid waste management system. Expected revenues from sales of energy or recovered materials, as well as potential revenues related to renewable energy credits and

carbon credits should be considered as part of the full cost accounting. While combustion using mass burn or refuse derived fuel (RDF) technologies are the most common technologies used for recovering energy from solid waste, there are several new and emerging technologies that may be considered, based on the characteristics of the integrated solid waste management system and the attributes of the technology. The selection of a waste to energy technology should be consistent with best practices regarding economics, environmental performance, technical performance and public health issues. The use of waste to energy facilities should be based on the assurances that during siting, design, construction and operation, a waste to energy facility will comply with all federal, state/provincial and local government rules, regulations and permits.

The following are considered to be best practices in the planning, siting, design and operation of waste to energy facilities as part of integrated solid waste management:

1. Planning for waste to energy facilities should consider the following factors:
    - evaluation of need based on current and projected waste volumes and characteristics,
    - evaluation of the risks the community can or is willing to take,
    - evaluation of the environmental and regulatory requirements for the facility implementation,
    - evaluation of the potential delivery process and business model (Design/Build, Design Build Operate, Design Build Own Operate, etc.)
    - capability of being engineered to provide for best practices in design and operation, and to ensure compliance with all applicable environmental regulations,
    - evaluation of the environmental performance of the selected technology,
    - evaluation of compatibility with recycling and source reduction efforts in integrated solid waste plan,

- verification of the of the availability and viability of long term revenue sources for the facility products,

- evaluation of facility economics, including initial construction costs, financing costs, ongoing operational costs and revenue sources. Facility economics should consider financial return on investment on a life cycle basis and there should be a high level of confidence that projected pricing of energy and tipping fees are reasonable and consistent with market conditions,

- commercial and technical viability, and

- the use of experienced consultants and attorneys for development of appropriate procurement and contract documents.

2. Sites for waste to energy facilities should be selected based on the following principles:

   - consistency with local land use conditions and zoning codes,

   - consideration of projected waste availability and energy demand for the immediate surrounding area to minimize transportation and transmission costs,

   - siting in proximity to existing infrastructure such as roads, rail access, utilities, transmission lines, steam loops/customers, collection/transfer systems and residue reuse or disposal sites and,

   - with sufficient process to ensure adherence to environmental justice principles.

3. Facilities shall be designed by registered professional engineers and other licensed professionals, with clearly demonstrated knowledge in waste to energy facility design, and shall incorporate the following principles:

   - designed for long term operation at high availability levels,

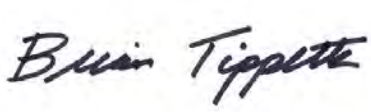
   - designed for environmental excellence in operations, including use of energy efficient equipment, minimizing use of chemicals and water, reuse of resources within operations, zero discharge of wastewater,

- designed in a manner to maximize energy and heat recovery
- designed with a means for the measurement of incoming solid waste and out-shipped residue energy and products,
- designed with a means for the screening of incoming solid waste,
- designed to include or be a part of a system that includes household hazardous waste and electronic waste recovery programs within an integrated solid waste management program,
- designed to control run-on and run-off to minimize/prevent surface water contamination,
- designed with a means to minimize generation of and/or control emissions of green house gases and other air quality contaminants to ensure compliance with applicable regulations,
- designed to incorporate continuous emissions monitoring systems,
- designed to support the beneficial use of residue,
- designed for maximum recovery of ferrous and non-ferrous metals or other reusable materials from residue, and
- designed to allow for the safe transport and disposal of unusable residue in permitted disposal areas.

4. Construction of waste to energy facilities shall be conducted by licensed contractors familiar with industrial level energy generating facilities with appropriate construction management, monitoring and certification.
5. Waste to energy facilities should be properly commissioned and tested to confirm achievement of performance guarantees.
6. Operation of waste to energy facilities shall aspire to the following principles:
    - operated under the management of a provincial/state certified manager/operator in those provinces/states where certification is required,

- operated by a manager with certification by the appropriate entity in the appropriate category of management and operation,
- operated and maintained using an asset management program, as well as preventive and predictive maintenance programs to minimize expense and down time,
- provision that operators have access to real-time operational and emissions data to enable operation at highest standards,
- provision for ongoing training of all on-site personnel appropriate to assigned area of responsibility,
- operated with high standard safety programs focused on worker health and safety as well as the safety of customers and contractors at the facility,
- provision for controlled access to facility and use by only authorized users,
- provision for an effective inspection and monitoring program of incoming loads to detect and prevent the disposal of hazardous, undesirable, or non-permitted waste, and
- operated so that residue is managed in a manner consistent with the design and permit conditions.

Approved by the International Board
on January 12, 2012



International Secretary

Dated January 12, 2012

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comment on proposed incinerator NOx regulation, COMAR 26.11.08

Thomas Butler <tjbutler003@gmail.com> Thu, Sep 20, 2018 at 9:31 AM
To: randy.mosier@maryland.gov

Dear Mr. Mosier,
My name is T.J. Butler and I am a resident of Charles Village in Baltimore. I work at the National Institute on Aging, which is in the Johns Hopkins Bayview Campus. I have lived in Baltimore for 3 years total, from 2013-2014 and again from January 2017 until now. I see a lot of improvement to city infrastructure and urban planning in my time, but I would like to see more. I gave up my car last year because I felt that a city should be bikeable, and I want to work to see that reality. However, I notice that biking through downtown, especially on code red days, I get a lot of respiratory aggravation and have gotten more sinus infections from aggravation since moving back to Baltimore from where I was living before. Based on the research of NOx emissions and other pollutants, I believe Wheelabrator is a big contributor to this and urge Baltimore and the city to do as much as it can to limit the pollution directly emitted by Wheelabrator. I applaud the city in its efforts to become more sustainable and "green", but projects like Wheelabrator that are highly pollution-heavy energy passed off as clean energy are creating lots of problems for people like me who would like to make the sustainable choice of biking rather than driving due to the real fear of asthma and respiratory aggravation from the pollutants such as NOx that are at higher levels in our city than most others on the east coast or even in the country. Based on some independent research, BRESCO could reduce NOx emissions to 135ppm without undue burden, which is a small price to pay for the health of residents. Speaking on this, I don't know how the city can effectively hope to improve itself if we don't first tackle citywide pollution problems, of which BRESCO is at the heart. Burning trash is harmful to our environment, and no matter how many bike lanes or parks or trails we put in the city, we can never escape dirty air. I hope the MDE will support this bill and set strict NOx emission standards for BRESCO, holding them accountable for the externalities that we the taxpayers are paying for, both by supporting BRESCO through subsidies and by the harm to our health. Baltimoreans are paying twice for a facility that is one of the most polluting in the country!
Thank you very much for the opportunity to comment, and I appreciate and value the work MDE is doing to create accountability within the Baltimore energy infrastructure.
Sincerely,
Thomas Butler

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

1 message

Tim Fantone <info@fantone.net> Fri, Sep 21, 2018 at 3:35 PM
Reply-To: info@fantone.net
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Tim Fantone
1209 Thomas Point Ct
Annapolis, MD 21403

September 21, 2018

Secretary Ben Grumbles
Maryland Department of the Environment
1800 Washington Boulevard
Suite 730
Baltimore, Maryland 21230-1720

RE: COMAR 26.11.08 Control of Incinerators

Dear Secretary Grumbles:

Thank you for the opportunity to submit comments in connection with the new NOx RACT requirements for Maryland's two large municipal waste combustors: Wheelabrator Baltimore, L.P. (Wheelabrator) and Montgomery County Resource Recovery Facility. In consideration of the National Ambient Air Quality Standards, we are pleased to learn that these facilities, particularly Wheelabrator, will optimize their existing controls to meet the new NOx RACT requirements.

As you may know, Veolia relies on ~~"G~~reen Steam" — steam generated by renewable energy — produced by Wheelabrator's waste-to-energy facility. Hidden beneath Baltimore City's iconic streets and bridges are Veolia's extensive heating and cooling networks providing steam, hot water and chilled water to over 255 prominent commercial, healthcare, government, institutional and hospitality customers in the central business district and in Inner Harbor East. Wheelabrator's Green Steam supplies nearly 50 percent of the steam Veolia delivers through its Baltimore district energy system, avoiding 47,000 tons of CO2 annually– the equivalent of removing 8,400 cars from the road, and displacing the need for onsite boiler plants.

Due to Wheelabrator's energy recovery systems, Veolia's steam system is four times more efficient than if steam was generated by combined heating and power alone – in addition to providing an alternative to fossil fuels like natural gas and fuel oil. The use of this renewable energy also helps the State of Maryland meet its goal of generating 25 percent of its energy from Tier 1 renewable resources by 2020.

We applaud Wheelabrator's long history of consistently meeting all state and federal environmental standards and regulations as well as its ongoing commitment to exploring technologies to optimize its facility. Our partnership with Wheelabrator and approach to renewable steam generation is reflective of our company mission and culture to protect the world's natural resources.

Sincerely,
Matthew Ware
Vice President of Operations
Veolia North America

Wheelabrator
TECHNOLOGIES

September 21, 2018

Mr. Randy Mosier
Division Chief of the Regulation Division
Air and Radiation Administration
Maryland Department of the Environment

RE: Wheelabrator Comments to Proposed NOx Requirements for Large Municipal Waste Combustors (COMAR 26.11.08.10)

Dear Mr. Mosier,

We are pleased to submit comments on the NOx Requirements for Large Municipal Waste Combustors (COMAR 26.11.08.10) proposed on August 17, 2018. MDE is to be commended for the open and deliberative stakeholder process used to develop and finalize these proposed NOx requirements for implementing NOx Reasonably Available Control Technology (NOx RACT) required for the 2008 ozone standard state implementation plan. Wheelabrator worked very hard with MDE over the last three years to evaluate and optimize the facility's NOx control technology to reduce NOx emissions consistent with NOx RACT requirements as applied to large municipal waste combustors (MWCs), i.e. waste to energy (WTE) facilities, in the Mid-Atlantic and Northeast states. The proposed secondary NOx limit of 145 ppm7%O2/30 day rolling average, effective May 1, 2020, will be the lowest NOx RACT limit achieved by any of our WTE facilities and represents a 30% reduction from the current Maximum Achievable Control Technology (MACT) limit for existing large MWCs promulgated by the U.S. Environmental Protection Agency (EPA). While Wheelabrator has demonstrated the proposed limits can be achieved in the short term, we will be working diligently over the next 6-8 months to complete the remainder of the NOx control technology upgrades needed to permanently achieve the proposed limits while minimizing potential impacts on facility reliability.

The NOx reductions associated with implementation of the MWC RACT regulations will help the Baltimore Area maintain the 2008 ozone national ambient air quality standard (NAAQS) of 75 ppb, which has been demonstrated to be achieved pending formal attainment designation from the EPA. These incremental NOx reductions from RACT implementation will also help Maryland achieve the more stringent 2015 ozone NAAQS of 70 ppb, which the State is already on the cusp of achieving. As provided for in the RACT regulations, Wheelabrator will be evaluating additional state of the art NOx control technologies that could provide further NOx reductions as may be needed for the State to maintain and meet air quality standards. We will continue to participate in MDE's voluntary Pilot Ozone Day Reduction Program, which calls for voluntary NOx reductions should atmospheric conditions be optimum for ozone formation. As MDE has suggested if this program is successful in reducing peak ozone days during the summer ozone season, the next round of regulations needed to comply with the 2015 70 ppb ozone standard could be avoided.

Though Wheelabrator is appreciative of the spirit of collaboration throughout this rulemaking period, below are specific issues that reflect ongoing concerns, which have been repeatedly expressed to MDE, but have not been adequately addressed in the proposed regulations.

Comments to Proposed Regulations:

1. Section E Additional NOx Emission Control Requirements: This section of the proposed regulation requires that Wheelabrator Baltimore conduct a feasibility study to evaluate: "*...NOx control technologies for achieving additional NOx reductions from existing MWCs including technologies capable of achieving NOx emission levels comparable to those for a new source in consideration of the overall facility design.*" While we understand the language "*emission levels comparable to those for a new source*" was added to the feasibility study as result of a December 11, 2017 Air Quality Control Advisory Council (AQCAC) meeting recommendation and that MDE is bound by AQCAC's decision to include such language, we do not agree that it is consistent with further evaluation of RACT based NOx limits for existing MWCs. Thus, the language should not be included in the final regulation.

   However, we are pleased that MDE has provided clarification to the feasibility study requirement in the "Technical Support Document (TSD) for Amendments to COMAR 26.11.08", stating that NOx technologies capable of achieving "emission levels comparable to those for a new source" is not intended to include Selective Catalytic Reduction (SCR) as the significantly high cost and design complexity of SCR goes well beyond what would be considered NOx RACT for an existing MWC facility. Like MDE, we are unaware of any existing MWCs that have retrofitted SCR and the application of SCR NOx control technology remains strictly in the realm of NOx control technology for new MWCs facilities where SCR can be cost effectively integrated into the new facility design and footprint. As MDE further clarifies in the TSD, we are in agreement that the intent of feasibility study is to evaluate what lower NOx RACT limit could be cost effectively achieved at our facility without a rebuild of entire facility.

   Additionally since the feasibility study requirement goes well beyond what is required for the ozone attainment state implementation plan (SIP), it should not be included in MDE's SIP submitted to EPA for the 2008 ozone standard and should remain only a State requirement. Given that the State and Baltimore Area are already very close to attaining the 2015 ozone standard, and if the voluntary Peak Ozone NOx Reduction Program is successful, further NOx reductions may not be required in the State plan to meet the state air quality goals.

2. Wheelabrator requests that the proposed January 1, 2020 feasibility study submittal date be pushed back one year until January 1, 2021. The proposed date for the study is not even one year after the 150 ppm limit is required to be achieved and is before the 145 ppm limit requirement by May 1, 2020. As such, there is very little time to gain experience complying with the new 150 ppm limit and no time to gain experience with the 145 ppm limit, especially with respect to evaluating potential impacts on facility reliability. As MDE is aware, there is potential for accelerated boiler corrosion and decrease in facility reliability from the increase in urea use required to meet the RACT limits. From a practical perspective, since further evaluation and optimization of existing NOx control technologies will be a large part of the feasibility study, sufficient time is needed in order to do a comprehensive evaluation since the outcome of the study is proposing new NOx limits that must be continuously achieved.

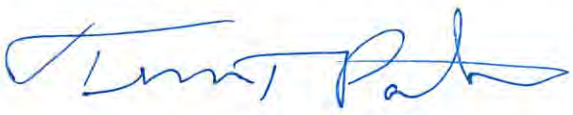
3. Section H Reporting Requirements: The quarterly reporting requirements under Section H could be aligned with reporting requirements under COMAR 26.11.01.11E (2) (c). As with these current reporting requirements, quarterly NOx RACT reporting would include dates, times, and information (i.e. reasons and corrective actions) for any exceedance of the NOx RACT limits and dates and averages for each startup and shutdown. MDE should clarify what is meant by "data, information and calculations" to be submitted in quarterly reports. Is the intent for MDE to receive all one hour averages

of all NOx monitoring data to reconstruct the averages to verify compliance? We are not sure why all this information may be required to be submitted quarterly for NOx RACT compliance since MDE has no such reporting requirement for the SO2, NOx and CO CEMS based limits under COMAR 26.11.08 A Emission Standards and General Requirements for and Existing Large MWC. In accordance with COMAR 26.11.01.11E (2) (c), MDE already has the discretion to ask for any additional information necessary to evaluate compliance with limits.

4. NOx Limit Compliance Dates: While we are proceeding to meet the schedule for compliance with the NOx emission limits in the proposed regulation, it may be prudent to provide alternative compliance times in the event that there is a delay in the final effective date of the regulation. As such, the 150 ppm limit compliance date could be changed to 6 months after the effective date of the regulation or May 1, 2019 whichever is later and the 145 ppm limit compliance date could be 12 months after effective date of the regulation or May 1, 2020 whichever is later. This is the approach other states have adopted for implementing final MWC RACT regulations.

Wheelabrator looks forward to working with MDE to implement the final rule. If you have questions or need further information, please do not hesitate to contact me.

Sincerely,



Timothy Porter
Director Air Quality Management

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

William Curtis <curtiswbc@gmail.com> Mon, Sep 17, 2018 at 6:18 PM
Reply-To: curtiswbc@gmail.com
To: randy.mosier@maryland.gov

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Mr. William Curtis
7038 Heathfield Rd
Baltimore, MD 21212
4103375017

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comments on COMAR 26.11.08: Control of Incinerators

William DuSold <wdusold05@verizon.net>
Reply-To: wdusold05@verizon.net
To: randy.mosier@maryland.gov

Mon, Sep 17, 2018 at 12:12 PM

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Mr. William DuSold
400 Ridgely Road
Glen Burnie, MD 21061
443-851-3905

Randy Mosier -MDE- <randy.mosier@maryland.gov>

Comment on proposed incinerator NOx regulation, COMAR 26.11.08

winstead rouse <ted@heal-thy-planet.com>
Reply-To: ted@heal-thy-planet.com
To: randy.mosier@maryland.gov

Wed, Sep 12, 2018 at 10:40 PM

Dear Mr. Mosier,

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for our region. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a feasibility study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Thank you for the chance to make comments on your work.

Ted Rouse

Mr. winstead rouse
801 south dallas street
Unit 406
baltimore, MD 21231
410 404 0669

Comments on COMAR 26.11.08: Control of Incinerators

Zach Kauffman <zakau111@gmail.com>
Reply-To: zakau111@gmail.com
To: randy.mosier@maryland.gov

Fri, Sep 21, 2018 at 2:23 PM

Thank you for publishing tighter regulations on the BRESCO trash incinerator in Baltimore that will take 200 tons of nitrogen oxides out of the air that I breathe every year. This is an important step forward - but it's not enough to build a healthier future for Baltimore. I am glad to see that the Maryland Department of the Environment (MDE) plans to publish a stricter regulation after BRESCO completes a study over the next year. It is essential for MDE to make sure that this is a rigorous and serious study that evaluates all options for pollution reduction. As someone who breathes the pollution from this incinerator, I expect MDE to then follow through by setting a new and much stronger regulation that will more fully protect public health.

Zach Kauffman
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828-446-9758

SECTION 9 – Response to Comments

DEPARTMENT OF THE ENVIRONMENT
AIR AND RADIATION ADMINISTRATION

RESPONSE TO COMMENTS

for the

PUBLIC HEARING held on September 21, 2018
in BALTIMORE, MD
related to
the amendments to Regulation .01 under COMAR 26.11.01 – General Administrative Provisions, the amendments to Regulations .01, .02, .04, .05, .07 and .08-2, the repeal of Regulation .08-1, and adoption of new Regulation .10 under COMAR 26.11.08 – Control of Incinerators, and the amendment to Regulation .08 under COMAR 26.11.09 - Control of Fuel Burning Equipment, Stationary Internal Combustion Engines, and Certain Fuel-Burning Installations

Purpose of Hearing: The purpose of the public hearing was to allow for public comment on the Maryland Department of the Environment's (the Department or MDE) proposal regarding amendments to Regulation .01 under COMAR 26.11.01 – General Administrative Provisions, the amendments to Regulations .01, .02, .04, .05, .07 and .08-2, the repeal of Regulation .08-1, and adoption of new Regulation .10 under COMAR 26.11.08 – Control of Incinerators, and the amendment to Regulation .08 under COMAR 26.11.09 - Control of Fuel Burning Equipment, Stationary Internal Combustion Engines, and Certain Fuel-Burning Installations.

The proposed action repeals nitrogen oxide (NOx) reasonable available control technology (RACT) requirements under COMAR 26.11.09.08H and establishes new NOx RACT requirements. This action also includes the study of possible additional NOx emission control requirements under COMAR 26.11.08.10 for Large municipal waste combustors (MWCs). Maryland has two existing Large MWCs: Wheelabrator Baltimore L.P. (Wheelabrator or BRESCO) and Montgomery County Resource Recovery Facility (MCRRF).

Additionally, this action amends opacity requirements under 26.11.01, adds definitions, repeals 26.11.08.08-1 and updates references to 26.11.08.08-2, containing the current emission standards and requirements for hospital, medical and infectious waste incinerators (HMIWIs).

Date and Location: The public hearing was held on September 21, 2018 at 10 a.m. at the Department of the Environment, 1800 Washington Boulevard, 1st Floor Aeris Conference Room, Baltimore, Maryland 21230.

Attendance: 51 attendees. (see Attachment A – MWC NOx RACT Hearing Sign-In Sheet)

Statement: The Department's statement was read by Carolyn Jones, Senior Regulatory and Compliance Engineer of the Regulations Development Division of the Air and Radiation Administration, Department of the Environment.

Comments and Responses: Comments were received from Northeast Maryland Waste Disposal Authority (NMWDA), Wheelabrator Baltimore, Inc., CCAN Action Fund, Environmental Integrity Project, Chesapeake Bay Foundation, Food & Water Watch, Energy Recovery Council, Solid Waste Association of North America, Veolia North America, Blue Water Baltimore, United Workers, Clean Water Action, Chesapeake Physicians for Social Responsibility, Energy Justice Network, Interfaith Power & Light and 118 citizens.

A summary of the comments received and the Departments responses are below.

COMMENT:
A commenter thanked the Department for the efforts related to drafting the regulations and the stakeholder outreach process. Although the Department was not able to incorporate all of the suggested language, the commenter supports the regulations as proposed and notes that the regulations will help Maryland meet ambient air quality standards for ozone.

RESPONSE:
The Department appreciates the comments and recognizes that throughout the stakeholder process, numerous comments and suggestions have been made, some diametrically opposed to comments offered by other stakeholders or federal policy. The Department made efforts to incorporate comments when appropriate and further took efforts to coordinate with federal agencies to develop regulatory language that was in compliance with the Clean Air Act (CAA).

COMMENT:
Multiple commenters supported the Department's effort to propose tighter regulations for Large municipal waste incinerators (MWCs). They also suggest that these regulations alone were not enough to be protective of public health and further called upon the Department to ensure that Wheelabrator Baltimore (Wheelabrator or BRESCO) prepares a rigorous and serious study that evaluates all options for pollution reduction as is required in the proposed regulation and that the Department then publish a stricter nitrogen oxide (NOx) regulation for BRESCO.

RESPONSE:
The Department appreciates the support for the proposed Large MWC NOx RACT regulations and encourages stakeholders to continue their collaborative efforts with the Department as we continue to review data and potential future control technologies for Large MWCs. With the adoption of the proposed regulations, NOx RACT limits will be effective by May 1, 2019, therefore, NOx reductions will be realized during the 2019 ozone season and beyond.

COMMENT:
Many commenters stated that air pollution from incinerators can worsen the symptoms of asthma and allergies, which are prevalent in Baltimore City. The commenters note that asthma is a leading cause of absenteeism in Baltimore schools and also causes Marylanders to miss work and increases health care expenses, causing economic hardship.

RESPONSE:
The Department agrees that reducing air pollution in the State of Maryland will provide beneficial human health and environmental outcomes. Researchers have associated ground-level ozone exposure with adverse health effects in numerous toxicological, clinical and

epidemiological studies. Reducing ozone concentrations is associated with significant human health benefits, including the avoidance of respiratory illnesses. NOx is an ozone precursor, and reducing NOx emissions will also reduce adverse health effects associated with nitrogen dioxide (NO2) exposure. These health benefits include fewer asthma attacks, hospital and emergency room visits, and lost work and school days.

COMMENT:
Several commenters stated that BRESCO produces far more NOx per energy output than the coal plants in the state - and its NOx emissions have remained about the same over the last decade, while emissions from coal plants and the state's other incinerator have significantly declined.

RESPONSE:
The progress the State has made on air pollution over the past 10 years is remarkable and much of this progress is due to recent laws and programs. In recent years Maryland has implemented the Maryland Healthy Air Act (HAA), one of the toughest power plant emissions laws on the East Coast, the Maryland Clean Cars Program, and the Federal Tier 2 Vehicle Standards. Maryland power plants have invested $2.6 billion in technology to comply with the Maryland HAA. Maryland has also adopted COMAR 26.11.38 - Control of NOx Emissions from Coal-Fired Electric Generating Units which has further reduced NOx emissions from Maryland's power plants.

These proposed regulations will continue the efforts to lower NOx emissions in the State. The proposed NOx RACT limits in this action for Large MWCs will result in approximately 200 tons of NOx emissions reduced on an annual basis. In regard to comparison of NOx per energy output, waste-to-energy (WTE) incineration typically does not have the same heat values that typical coal-fired power plants do because MWCs operate using a non-homogenous fuel source. Unlike the coal-fired power plants that are strictly for power supply, incineration has a dual purpose of reducing waste products and generating energy. BRESCO also generates steam which is used in Baltimore City's steam heating loop and further provides steam to power energy producing turbines.

COMMENT:
Several commenters stated that the Baltimore City Council has passed a resolution calling for MDE to use its legal authority to go beyond RACT and establish a 45-ppm NOx limit for the BRESCO incinerator.

RESPONSE: On July 17, 2017 the Baltimore City Council introduced Council Bill 17-0034R. In part, the Resolution stated that *"A NOx limit of 150 ppm on a 24-hour basis has been adopted as the RACT standard for municipal solid waste incinerators by the states of Connecticut and New Jersey and has been proposed for adoption in Massachusetts."* The Resolution further read *"That the Council urges the Maryland Department of the Environment to set a nitrogen oxides pollution limit for the Wheelabrator Baltimore incinerator that is no higher than the 150 ppm standard on a 24-hour average that has been adopted by Connecticut and New Jersey and proposed in Massachusetts, or, if at all possible, significantly lower than 150 ppm in order to provide maximum air quality benefits to residents of Baltimore."*

On August 30, 2017, Air Director Tad Aburn submitted a letter to the Baltimore City Council reading, in part, that the Department "*understands that the Council is considering a resolution 'urging the Maryland Department of the Environment to set a NOx pollution limit for the Wheelabrator Baltimore incinerator that is no higher than the 150 ppm standard on a 24-hour average…or, if at all possible, significantly lower than the 150 ppm in order to provide maximum air quality benefits to residents of Baltimore. The Department shares in your interest and concern for the health of our citizens and the protection of our environment'…The Department appreciates the City Council's attention to this matter. At their request, Council Members Edward Reisinger and Mary Pat Clarke have already been added to the Department's stakeholder list for this topic. The Department welcomes all members to attend a stakeholder meeting regarding the proposed regulations."*

On October 16, 2017, the Baltimore City Council adopted the Resolution which stated in part, *"The Council requests that the Maryland Department of the Environment use its legal authority to go beyond the RACT standard in order to set a nitrogen oxides limit of 45 ppm on a 24-hour basis, which is the limit that would likely be set for a new incinerator….Now, therefore, be it resolved by the City Council of Baltimore, That the Council urges the Maryland Department of the Environment to set a nitrogen oxides pollution limit for the Wheelabrator Baltimore incinerator that is no higher than the 150 ppm standard on a 24-hour average that has been adopted by Connecticut and New Jersey and proposed in Massachusetts, or, if at all possible, significantly lower than 150 pmm in order to provide maximum air quality benefits to the residents of Baltimore."*

As stated above, the purpose of these regulations is to establish new NOx RACT emissions rates. Under Section 182 of the CAA, 42 U.S.C. §7511a, sources in ozone nonattainment areas classified as moderate and above are subject to a NOx RACT requirement. Therefore, the CAA requires MDE to review and revise NOx RACT requirements in the Maryland State Implementation Plan (SIP) as necessary to achieve compliance with the NAAQS. EPA defines RACT as "the lowest emissions limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility." In reviewing existing NOx RACT requirements for adequacy, the Department considers technological advances, the stringency of the revised ozone standard and whether new sources subject to RACT requirements are present in the nonattainment area. The Department must examine existing controls on major sources of NOx to determine whether additional controls are economical and technically feasible, and include any such controls in Maryland's RACT SIP, where appropriate, to be approved by EPA.

The proposed amendments to COMAR 26.11.08 contain regulations requiring Wheelabrator to meet a NOx 24-hour block average emission rate of 150 ppmv. This NOx 24-hour block average emission rate of 150 ppmv is consistent with RACT rates in Connecticut, New Jersey and Massachusetts. Additionally, to further ensure consistent long-term operation of NOx control technologies, Maryland has taken the additional step of requiring the Large MWCs to meet new, individual NOx 30-day rolling average emission rates by May 1, 2020. Wheelabrator's NOx 30-day rolling average emission rate is 145 ppmv. The proposed NOx RACT requirements, when effective, will result in immediate reductions in NOx emissions from Wheelabrator.

This action also requires analysis of possible additional NOx emission control requirements under COMAR 26.11.08.10 for Large MWCs that may be needed by Maryland to attain and maintain compliance with the 2015 ozone NAAQS. Not later than January 1, 2020, Wheelabrator shall submit to the Department a feasibility analysis regarding additional control of NOx emissions from the Wheelabrator facility. Specifically, the proposed regulation under COMAR 26.11.08.10E(1)(b) requires: *"A written narrative and schematics detailing various state-of-the-art NOx control technologies for achieving additional NOx emission reductions from existing MWCs, including technologies capable of achieving NOx emission levels comparable to those for a new source in consideration of the overall facility design at Wheelabrator Baltimore Inc. facility;"*

COMMENT:
Some commenters stated that an expert evaluation of control tests and studies produced through the stakeholder process concluded that BRESCO could meet a 135-ppm daily NOx limit today just by optimizing its existing control technology. MDE should require BRESCO to run its existing controls in the most effective way possible. Requiring the most reduced emissions rate for this source category would be consistent with Maryland's statements in its Clean Air Act 126 and 176a Petitions.

RESPONSE: The Department has included optimization language in the proposed regulations that is similar to and consistent with the optimization language in Maryland State NOx regulations for coal-fired power plants and the requests in Maryland's CAA section 126(b) Petition. The proposed COMAR 26.11.08.10A requires: *"The owner and operator of a Large MWC shall minimize NOx emissions by operating and optimizing the use of all installed pollution control technology and combustion controls consistent with the technological limitations, manufacturers' specifications, good engineering and maintenance practices, and good air pollution control practices for minimizing emissions (as defined in 40 CFR §60.11(d)) for such equipment and the unit at all times the unit is in operation, including periods of startup and shutdown."*

With the inherent variability of the refuse being incinerated at Large MWCs, municipal solid waste is considered a non-homogeneous fuel. Correspondingly, there is the potential for variability in the NOx emissions depending on multiple factors including the variability of the waste itself (including seasonal variability), moisture levels, temperature, etc. Considering the optimization study conducted by Wheelabrator was of a limited time frame, the Department does not believe there is currently sufficient evidence to support a lower 24-hour NOx RACT emission limit. In addition, in order to ensure compliance and avoid violation with the proposed 24-hour NOx RACT limit, it is anticipated that operators will control NOx emission levels below 150 ppmv on an hourly basis.

COMMENT:
Multiple commenters stated the Maryland should be moving towards zero waste initiatives and stated that there is no need for the BRESCO facility.

RESPONSE:
The Department promotes and encourages waste diversion across the State of Maryland. Waste diversion combines both recycling and source reduction activities. In 2017, Governor Hogan signed Executive Order 01.01.2017.13 – Waste Reduction and Resource Recovery Plan for Maryland. This Executive Order calls for the Department to consult with stakeholders on the State's methodology for tracking waste generation, recycling, and source reduction, and to (1) recommend to the Governor a method of obtaining business source reduction and recycling data; (2) establish an improved method of tracking the statewide recycling and source reduction rates; and (3) establish voluntary statewide goals to encourage continuous improvement of sustainable materials management. MDE recently put Goals and Measurements Draft Recommendations out for public comment.

Currently, the primary metrics tracked in Maryland are those established under the Maryland Recycling Act (MRA). These include county and statewide recycling rates and waste diversion rates. The waste diversion rate consists of the recycling rate plus a "source reduction credit" of up to 5 percentage points. The credit is derived from activities that the counties report having conducted to reduce the generation of waste (*e.g.*, conducting waste prevention outreach). Under the MRA, counties are required to plan for and meet minimum recycling rates of 20 or 35 percent, depending on their populations. In 2012, the State established a voluntary statewide goal of 55 percent recycling and 60 percent waste diversion by 2020. Maryland's waste diversion rate has increased steadily from a 19% recycling rate in 1992 to the 46.9% waste diversion (*i.e.*, 42.9% recycling rate + 4% source reduction credit) rate in 2016.

According to Baltimore City's 10-Year Solid Waste Management Plan[1], Wheelabrator accepts waste from Baltimore City, and Harford, Howard, Anne Arundel, Montgomery, and Prince George's Counties. In 2011, Wheelabrator Baltimore, L.P. accepted 701,636 tons of commercial and residential refuse. A majority of this waste, 415,865 tons, is mixed municipal solid waste from Baltimore City.

Further, the Plan reads:
"…the City will continue to investigate other techniques and technologies to further enhance not only its disposal capability but also its recycling and reuse strategies. A proven strategy such as reusing landfill space through "landfill mining" will be explored… Waste prevention and source reduction are the most cost effective ways to cope with declining landfill capacity. The City of Baltimore is actively promoting waste reduction within City government, among its citizens, and within the Baltimore region. In the same way that the American public has embraced the concepts of recycling and demanded of their governments and institutions that recycling programs be initiated, waste prevention and reduction are developing increased support."

[1] City of Baltimore 10 Year Solid Waste Management Plan for 2013-2023
http://publicworks.baltimorecity.gov/sites/default/files/10%20Year%20Solid%20Waste%20Management%20Plan%20w%20Appendices_0.pdf

COMMENT:
A commenter stated that waste-to-energy (WTE) technology provides a reliable and renewable source of energy that results in net carbon reductions when compared with most other methods of waste disposal. For this reason, a well-run and maintained WTE facility can be a valuable component of a local government's integrated solid waste management plan. This would be in conjunction with existing and planned waste prevention, waste reduction and recycling programs. It is important to understand how waste-to-energy fits into the USEPA's current waste management hierarchy, the solid waste management plans of the communities they serve, and the long term-needs of local governments.

A commenter further stated that beneath Baltimore City's streets and bridges are extensive heating and cooling networks providing steam, hot water and chilled water to over 255 commercial, healthcare, government, institutional and hospitality customers in the central business district and in Inner Harbor East. Steam from the Wheelabrator facility supplies nearly 50 percent of the steam that a single energy business delivers through its Baltimore district energy system, avoiding 47,000 tons of CO2 annually– the equivalent of removing 8,400 cars from the road, and displacing the need for onsite boiler plants. Due to Wheelabrator's energy recovery systems, our business' steam system is four times more efficient than if steam was generated by combined heating and power alone – in addition to providing an alternative to fossil fuels like natural gas and fuel oil. The use of this renewable energy also helps the State of Maryland meet its goal of generating 25 percent of its energy from Tier 1 renewable resources by 2020.

And, a commenter states that WTE plants supply much needed base load renewable electricity to the nation's power grid. WTE facilities operate 365 days a year, 24 hours a day and can operate under severe conditions. For example, WTE facilities have continued to operate during hurricanes. In the aftermath of the storms, they have provided clean, safe and reliable waste disposal and energy generation. WTE facilities operate at an average of greater than 90% availability, which is higher than many forms of energy production.

RESPONSE:
The Department recognizes the benefit provided to Baltimore City through the production of steam and energy from Wheelabrator. According to Baltimore City's 10-Year Solid Waste Management Plan, Wheelabrator incinerates Baltimore's waste 24 hours a day, 7 days a week, and produces 510,000 pounds of steam per hour that is sold on the market and distributed through the City's steam heating loop or sent through power turbines that can produce 60 megawatts; enough to power 68,000 homes. The electricity generated at Wheelabrator is purchased by Baltimore Gas and Electric Company.

COMMENT:
Several commenters stated that incinerators are huge emitters of greenhouse gases and further stated that in 2015, the BRESCO incinerator emitted roughly double the amount of greenhouse gases per megawatt hour of energy than each of the six largest coal plants in Maryland.

Several commenters stated that the BRESCO incinerator receives subsidies under Maryland's Renewable Portfolio Standard (RPS) amounting to $10 million over the past six years, receiving

the same subsidies as wind and solar in our state. The commenters noted that the environmental community is working with the state legislature to stop subsidizing incineration.

A commenter supports the adoption of the proposed NOx RACT requirements reducing emissions from Maryland's two large WTE facilities, stating that both facilities are a clean, renewable, efficient, and economical form of energy production that have long been a proven and effective means of managing post-recycled waste within the State. WTE helps the U.S divert waste from landfills while producing renewable energy to reduce our reliance on fossil fuels to generate electricity.

RESPONSE:
Maryland has adopted numerous strategies as part of the ongoing efforts to combat climate change and reduce greenhouse gas emissions. Maryland's RPS requires Maryland to obtain 25 percent of its electricity from renewable sources, as defined by statute, by 2020, with a solar carve-out which requires that two percent be obtained from solar energy generation by 2020. The RPS incentivizes the development of renewable energy by requiring electricity suppliers to meet a prescribed portion of their energy supply needs using renewable energy sources.

Additionally, the State believes that enhanced recycling also plays an important role in reducing greenhouse gas emissions. In 2017, Governor Hogan signed Executive Order 01.01.2017.13 – Waste Reduction and Resource Recovery Plan for Maryland. This Executive Order lays out a path for even better results and a greater emphasis on sustainable materials management, and beneficial reuse. This promotes aggressive but achievable goals by coordinating Departmental efforts with local-decision-makers, business, and environmental stakeholders. Through that coordination, the Department continues to work on establishing multi-family and event recycling, finalizing and implementing new composting regulations and publishing composting facility guidance, encouraging food donation before composting or disposal, studying and updating source reduction credits, collaborating across agencies on business and market development, increasing environmentally preferable procurement and management of electronics and other materials, and conducting a waste study to target materials that can most easily be diverted from disposal.

COMMENT:
Commenters have stated that after reviewing numerous materials related to the BRESCO facility, that there are no technical impediments to the implementation of the most effective NOx-reducing technologies, such as selective catalytic reduction (SCR) (or hybrid SNCR/SCR), in the appropriate locations along the gas paths at each of the BRESCO boilers. These technologies should be reviewed in the feasibility analysis and could be installed to greatly reduce its NOx emissions and reduce the health burden of its pollution on Baltimoreans.

Further, commenters have stated that the feasibility analysis for BRESCO should, at minimum, address the installation of the following control technologies:

- Optimized SNCR, including analysis of ammonia versus urea injection
- Flue Gas Recirculation
- Fuel nitrogen content reduction strategy
- In-duct Hybrid SNCR/SCR

- Regenerative SCR (RSCR)
- Advanced Natural Gas Injection
- Injection or Combustion Optimization
- Additional temperature and flow profiling to inform injector height, positions, injection rates, and injector technology
- Additional flow modeling (in boiler and ducts) and optimization of combustion practices
- Replacement of electrostatic precipitator (ESP) with Baghouses
- Boiler modification to accommodate Covanta Low-NO_x or similar technology
- Boiler replacement

RESPONSE:
The Department's "Technical Support Document (TSD) for Amendments to COMAR 26.11.08" on page 8 reads, in part, *"The feasibility analysis for Wheelabrator Baltimore Inc. should review and examine NOx emission control technologies capable of achieving NOx emission levels comparable to those for a new source (e.g. selective catalytic reduction – SCR)… The intent of the feasibility analysis is to evaluate what lower NOx RACT emission limit could be achieved at Wheelabrator Baltimore Inc. without a re-build of the entire facility."*

Further, the proposed regulation under COMAR 26.11.08.10E(1)(b) requires:
"A written narrative and schematics detailing various state-of-the-art NOx control technologies for achieving additional NOx emission reductions from existing MWCs, including technologies capable of achieving NOx emission levels comparable to those for a new source in consideration of the overall facility design at Wheelabrator Baltimore Inc. facility;"

As noted in the above TSD and regulatory excerpts, it is the Department's intent that the feasibility analysis shall include the review of various state-of-the-art NOx control technologies.

COMMENT:
Commenters have stated that BRESCO did not maintain the same emissions reductions that it achieved during 2017 optimization testing in the following months.

RESPONSE:
The Department acknowledges that the Wheelabrator facility demonstrated the ability to operate their NOx emission controls more effectively to limit air pollution during the 2017 optimization testing. The optimization study conducted by Fuel-Tech for Wheelabrator stated that: *"Longer term testing needs to be conducted to ensure that the 150 ppmdc target can be sustained while WTE units are operating throughout the normal range of fuel variations and boiler maintenance cycles."*

The Department is not aware of any further long term testing conducted by the Wheelabrator facility by operating their NOx emission controls at the optimized levels to demonstrate and ensure the long-term capability to do so. The proposed action requires Wheelabrator to meet the 24-hour NOx RACT limit of 150 ppmv starting May 1, 2019.

COMMENT:
Commenters have stated that MDE should begin to collect data from BRESCO now in order to evaluate the feasibility study. Data to be collected should include temperature profile and

computational fluid dynamics modeling, ammonia CEMS data, temporal fuel/waste composition data, and gas composition samples.

RESPONSE:
Under existing COMAR regulations, Large MWCs shall continuously monitor NOx emissions with a continuous emission monitoring system (CEM) in accordance with COMAR 26.11.01.11. This regulation further requires the submittal of quarterly reports to the Department.

Beginning July 1, 2019, the proposed amendments to COMAR 26.11.08.10 also require Large MWCs to submit quarterly reports to the Department containing data, information, and calculations which demonstrate compliance with the NOx RACT emission rates and NOx mass loading emission limits. The data to be collected includes NOx continuous emission monitoring data, stack flow data, and total urea flow rate to the boiler averaged over a 1-hour period. The reports shall include flagging of periods of startup and shutdown and exceedance of emission rates, as well as documented actions taken during periods of startup and shutdown in signed, contemporaneous operating logs.

Under COMAR 26.11.08.10E(1)(c) and E(2) the Department requires:
(c) An analysis of whether each state-of-the-art control technology identified under §E(1)(b) of this regulation could technically be implemented at the Wheelabrator Baltimore Inc. facility; and
(2) Upon written request, Wheelabrator Baltimore Inc. shall submit any other information that the Department determines is necessary to evaluate the feasibility analysis.

The Department considers these provisions sufficient to collect the appropriate information to determine whether various NOx emission control technologies could be installed at the Wheelabrator facility.

COMMENT:
Commenters have stated that MDE must revise subparagraphs E1(b) and (c) in proposed COMAR 26.11.08.10 to prevent BRESCO from excluding the most effective NOx controls from the analysis.

RESPONSE:
The Department disagrees that subparagraphs E1(b) and (c) in proposed COMAR 26.11.08.10 allows BRESCO to exclude the most effective NOx controls from the analysis. The Department requires BRESCO to analyze all state-of-the-art NOx control technologies in the feasibility analysis and then demonstrate to the Department whether such control technologies are technically feasible in consideration of the overall facility design at BRESCO.

COMMENT:
Commenters have stated that MDE should revise subparagraph E(2) in proposed COMAR 26.11.08.10 to require that additional information be provided within a defined time frame.

RESPONSE:
The Department disagrees with the concept of adding arbitrary deadlines into subparagraph E(2) in proposed COMAR 26.11.08.10. The Department does not know how extensive any such

future request to Wheelabrator will be, nor of the reasonable time frame needed to respond to such request. The Department does intend to utilize all information collected from the feasibility analysis and other available technical information to determine further NOx emission control needs for Wheelabrator.

COMMENT:
Commenters have stated that a presumptive limit should have been included in the rule requiring that BRESCO achieve SCR-level reductions of NOx and requiring a demonstration by Wheelabrator that it cannot meet this limit if the company wishes to avoid the presumptive limit.

RESPONSE:
The Department disagrees with the concept of establishing presumptive limits upon industry prior to determining the technical feasibility of implementing proven NOx emission control technology. This issue was debated before the Air Quality Control Advisory Council on December 17, 2017 and the Council concurred with the Department on this matter.

COMMENT:
Commenters have stated that MDE must revise the preamble to the proposed rule to state that MDE will commence a second rulemaking in 2020 in order to adopt stronger NOx limits for the Wheelabrator incinerator.

RESPONSE:
As the Department communicated to the Air Quality Control Advisory Council on December 17, 2017, after reviewing the results of the feasibility analysis, the Department intends to adopt a rule, as expeditiously as practicable, which will strengthen the NOx emissions limits at levels that are determined to be feasible. The Department has worked in partnership with affected sources, environmental organizations and the local community on the development of the proposed NOx RACT limits for Large MWCs and shall continue to do so following the submittal of the feasibility analysis.

COMMENT:
Commenters have stated that MDE must revise the proposed rule to clarify requirements during startup and shutdown events and further stated that MDE should clarify how a startup or shutdown event affects the period over which the 24-hour limits applicable during normal operations are calculated.

RESPONSE:
Section XI.D. of the EPA Startup, Shutdown and Malfunction (SSM) Policy provides recommendations for the development of alternative emission limitations applicable during startup and shutdown. *See* 80 Fed. Reg. at 33980. The EPA recommends that, in order to be approvable (*i.e.,* meet CAA requirements), alternative requirements applicable to the source during startup and shutdown should be narrowly tailored and take into account considerations such as the technological limitations of the specific source category and the control technology that is feasible during startup and shutdown.

During periods of startup and shutdown, the NOx mass loading emission limitations of COMAR 26.11.08.10 D(1) or (2) shall apply. A startup or shutdown period is restricted to 3-hours. The

NOx emission limit average mass loading calculation includes the 3-hours during the startup or shutdown period plus the remaining 21-hours of the 24-hour period.

During periods of startup and shutdown, COMAR 26.11.08.10D(3) or (4) specifies that the facility-specific NOx 24-hour average emission rates of §B shall apply to the 24-hour period after startup or the 24-hour period before shutdown, as applicable.

As an example for a startup, COMAR 26.11.08.10D(3) specifies that the facility-specific, NOx 24-hour average emission rate of COMAR 26.11.08.10B shall apply and be calculated utilizing the 24-hour period beginning at the end of the 3-hour startup period. Additionally, the NOx 24-hour average block emission rate of §B shall begin to be calculated anew during midnight following initiation of a startup.

This process ensures that during all hours of operation there is an applicable standard in place, as is required by EPA's 2015 SSM policy.

COMMENT:
Commenters have stated that MDE should require that the mass-based startup and shutdown limits for the BRESCO incinerator must be calculated based on stack flow rates derived from flow monitors.

RESPONSE:
The mass emission limit calculations for Wheelabrator are derived utilizing 40 CFR 60.58b(h)(2) of subpart Eb (Concentration correction to 7 percent oxygen) and EPA Method 19 to determine NOx emission rates based upon oxygen concentrations. Facility average flue gas flow rates are also utilized into the calculations. The calculation methodology for the mass emission limit is based upon the existing Prevention of Significant Deterioration (PSD) Approval for Wheelabrator and follows EPA approved methodology.

COMMENT:
Commenters have stated that MDE should require installation of Ammonia CEMS at BRESCO.

RESPONSE:
On June 5-9, 2017, Fuel-Tech conducted optimization tests and analysis for Wheelabrator as detailed in their report entitled, *NOx Optimization Project Wheelabrator Baltimore Inc. Baltimore, Maryland Units 1, 2 & 3.*

Fuel-Tech's optimization test objective was to achieve NOx levels consistently below 150 ppmdc with low ammonia slip, without producing a visible plume at the stack and to minimize impact of SNCR operation on waterwall platens. An excerpt from the optimization analysis reads as follows:

"The use of the additional rear wall injector ports and modified injector tips enhanced the coverage of the injectors allowed for more flexibility to optimize the SNCR system to control NOx below the 150 ppmdc (corrected to 7% O2) target while simultaneously maintaining low ammonia slip levels."

and…

"Measuring the ammonia slip, a by-product of the SNCR process, is a very important part of evaluating SNCR performance in any application. Excessive ammonia slip can result in the formation of a detached visible ammonium chloride plume above the stack. As such, keeping the slip as low as possible is always a priority but increasing the NOx reduction efficiency is also as important. Finding the optimum balance between minimizing slip and achieving desired NOx reduction or emission levels is the key in getting the most out of the SNCR process.

The ammonia slip measurements that were taken on all 3 units were done using a modified EPA wet extraction method. This method is used exclusively by FTI to get a quick measurement of the slip. On all 3 units the slip samples were taken before the SDA to ensure that the measured slip was representative of the actual slip coming after the SNCR process. The samples were taken using a single glass lined and heated probe. During testing the plant was also monitoring the possible presence of a visible plume and at no time during the 3 days of testing and while running the units at the 150 ppmdc NOx set point was a detached plume visible. Ammonia slip results during the week registered the highest slip at 10 ppm but most of the tests were less than 5 ppm."

Additionally, Large MWCs are subject to stringent continuous opacity monitoring and visible emission requirements as specified in COMAR 26.11.01.10 and 26.11.08.04 which ensures that enforcement measures are in place to detect and determine compliance in the event of a detached plume resulting from excess ammonia emissions.

COMMENT:
A commenter stated that Baltimore Harbor is the most polluted tributary to the Chesapeake Bay, and was first listed in 1996 as impaired for nutrients on Maryland's 303(d) list. Baltimore Harbor suffers from chronic discharges of nitrogen pollution from two wastewater treatment plants, significant sewage system leakage and overflows, and stormwater pollution. Atmospheric deposition of nitrogen contributes to the impairment of our waterways. In 2010, when the Chesapeake Bay TMDL for nutrients was established, atmospheric deposition was the largest source of nitrogen to the Chesapeake Bay watershed. NOx are the primary source of this atmospheric nitrogen. NOx emissions from the Wheelabrator incinerator are a substantial contributor to poor local and regional water quality.

RESPONSE:
The Department recognizes that air deposition is a significant source of the nitrogen pollution entering the Chesapeake Bay. Pollutants released into the air from local and out-of-state sources (primarily from power plants, industry and vehicle emissions) eventually make their way back down to the earth's surface and are dispersed onto the land and transported into waterways. In addition to other State and federal regulations currently in effect, the standards and requirements in the proposed regulation will reduce the amount of nitrogen entering the Bay each year.

COMMENT:
A commenter stated that while we understand the language *"emission levels comparable to those for a new source"* was added to the feasibility study as result of a December 11, 2017 Air Quality

Control Advisory Council (AQCAC) meeting recommendation and that MDE is bound by AQCAC's decision to include such language, we do not agree that it is consistent with further evaluation of RACT based NOx limits for existing MWCs. Thus, the language should not be included in the final regulation.

RESPONSE:
The Department is obligated to consider recommendations from AQCAC. The Department has stated in the Notice of Proposed Action published in Volume 45, Issue 17, of the August 17, 2018 Maryland Register that "This action also contains possible additional NOx emission control requirements that may be needed by Maryland to attain and maintain compliance with the 2015 ozone NAAQS." The Department may determine that additional NOx emission reductions from Large MWCs are needed by Maryland to achieve and maintain compliance with the 2015 70 ppb ozone NAAQS. This does not imply that such a requirement would necessarily be NOx RACT for Large MWCs.

COMMENT:
A commenter stated that we are pleased that MDE has provided clarification to the feasibility study requirement in the "Technical Support Document (TSD) for Amendments to COMAR 26.11.08", stating that NOx technologies capable of achieving "emission levels comparable to those for a new source" is not intended to include Selective Catalytic Reduction (SCR) as the significantly high cost and design complexity of SCR goes well beyond what would be considered NOx RACT for an existing MWC facility. Like MDE, we are unaware of any existing MWCs that have retrofitted SCR and the application of SCR NOx control technology remains strictly in the realm of NOx control technology for new MWCs facilities where SCR can be cost effectively integrated into the new facility design and footprint.

RESPONSE:
The Department's "Technical Support Document (TSD) for Amendments to COMAR 26.11.08" on page 8 reads, in part, *"The feasibility analysis for Wheelabrator Baltimore Inc. should review and examine NOx emission control technologies capable of achieving NOx emission levels comparable to those for a new source (e.g. selective catalytic reduction – SCR). The Department conducted research on existing MWCs around the country and was not able to find examples of existing MWCs that were retrofitted with an SCR. Adding SCR NOx emission control technologies, or other comparable NOx emission reduction strategies, would likely not be considered RACT because of the complex design requirements and cost issues. SCR NOx emission control strategies are standard equipment on new Large MWCs. The intent of the feasibility analysis is to evaluate what lower NOx RACT emission limit could be achieved at Wheelabrator Baltimore Inc. without a re-build of the entire facility."*

Further, the proposed regulation under COMAR 26.11.08.10E(1)(b) requires:
"A written narrative and schematics detailing various state-of-the-art NOx control technologies for achieving additional NOx emission reductions from existing MWCs, including technologies capable of achieving NOx emission levels comparable to those for a new source in consideration of the overall facility design at Wheelabrator Baltimore Inc. facility;"

The TSD language and the regulatory requirements of COMAR 26.11.08.10E(1)(b) do require that Wheelabrator's feasibility analysis includes the evaluation of SCR and all other state-of-the-art NOx control technologies that could be employed to further reduce NOx emissions from the Wheelabrator facility.

The Department does recognize that, to date, there have not been any existing MWCs identified that have been retrofitted with an SCR. However, this technology could potentially be installed at the Wheelabrator facility without a re-build of the entire facility, but that has yet to be determined. The third-party feasibility analysis should thoroughly and definitively detail whether SCR and other state-of-the-art NOx control technologies could technically be installed at Wheelabrator, independent of cost issues.

The Department stated in the TSD that *adding "SCR NOx emission control technologies, or other comparable NOx emission reduction strategies, would likely not be considered RACT because of the complex design requirements and cost issues"*. However, the Department may determine that additional NOx emission reductions from Large MWCs are needed by Maryland to achieve and maintain compliance with the 2015 70 ppb ozone NAAQS. This statement was intended to clarify that, while MDE may require additional controls, those controls would not necessarily be considered NOx RACT for Large MWCs.

COMMENT:
A commenter has stated that MDE further clarifies in the TSD that the intent of feasibility study is to evaluate what lower NOx RACT limit could be cost effectively achieved at Wheelabrator without a rebuild of the entire facility. Additionally, since the feasibility study requirement goes well beyond what is required for the ozone attainment state implementation plan (SIP), it should not be included in Maryland's SIP submitted to EPA for the 2008 ozone standard and should remain only a State requirement.

RESPONSE:
As noted in the Department's response above, the TSD language and the regulatory requirements of COMAR 26.11.08.10E(1)(b) do require that Wheelabrator includes the evaluation of SCR and all other state-of-the-art NOx control technologies that could be employed to further reduce NOx emissions from the Wheelabrator facility, that do not necessitate a rebuild of the entire facility. The third-party feasibility analysis should thoroughly and definitively detail whether SCR and other state-of-the-art NOx control technologies could technically be installed at Wheelabrator, independent of cost issues.

The amendments pertaining to COMAR 26.11.08.10E will not be submitted to the U.S. Environmental Protection Agency (EPA) for approval as part of Maryland's State Implementation Plan (SIP) at this time. The Department does not consider COMAR 26.11.08.10E to be NOx RACT for the 2008 ozone NAAQS.

COMMENT:
A commenter states that given that the State and Baltimore Area are already very close to attaining the 2015 ozone standard, and if the voluntary Peak Ozone NOx Reduction Program is

successful, further NOx reductions may not be required in the State plan to meet the state air quality goals.

RESPONSE:
On October 1, 2015, EPA strengthened the NAAQS for ozone to 70 ppb, based on scientific evidence about ozone's effects on public health and welfare. The Baltimore metropolitan area currently has a design value of 75 ppb, which exceeds the 2015 ozone NAAQS.

The Department appreciates the voluntary efforts that are being made by facilities and hopes to see measurable NOx emission reductions from facilities on predicted unhealthy ozone days, and a corresponding decrease in ground-level ozone from the Department's air quality monitoring network.

COMMENT:
A commenter requests that the proposed January 1, 2020 feasibility study submittal date be pushed back one year until January 1, 2021. The proposed date for the study is not even one year after the 150 ppm limit is required to be achieved and is before the 145 ppm limit requirement by May 1, 2020. As such, there is very little time to gain experience complying with the new 150 ppm limit and no time to gain experience with the 145 ppm limit, especially with respect to evaluating potential impacts on facility reliability. As MDE is aware, there is potential for accelerated boiler corrosion and decrease in facility reliability from the increase in urea use required to meet the RACT limits. From a practical perspective, since further evaluation and optimization of existing NOx control technologies will be a large part of the feasibility study, sufficient time is needed in order to do a comprehensive evaluation since the outcome of the study is proposing new NOx limits that must be continuously achieved.

RESPONSE:
The Department believes that sufficient time is provided in the regulation to conduct the feasibility analysis. On January 9, 2017, MDE had requested that Wheelabrator address the feasibility of installing COVANTA's Low-NOx control technology at BRESCO. Wheelabrator was able to perform an initial feasibility analysis of the Low-NOx control technology and present this information to stakeholders on January 17, 2017. The feasibility analysis requirements of COMAR 26.11.08.10E require a more thorough and robust study on potential NOx control technologies. However, this preliminary analysis conducted by Wheelabrator demonstrates that an analysis should be able to be prepared in time to meet the January 1, 2020 compliance date.

Wheelabrator has had the optimized NOx control technologies in place since June 2017, which provides two and a half years to conduct long-term testing and evaluation of the NOx emission controls operating to meet a 24-hour 150 ppmv emission limit.

COMMENT:
A commenter states that the quarterly reporting requirements under Section H (proposed COMAR 26.11.08.10H) could be aligned with reporting requirements under COMAR 26.11.01.1 lE(2)(c). As with these current reporting requirements, quarterly NOx RACT reporting would include dates, times, and information (i.e. reasons and corrective actions) for any exceedance of the NOx RACT limits and dates and averages for each startup and shutdown.

RESPONSE:
The Department agrees that a single quarterly report may be submitted to the Department that contains information to satisfy the requirements of COMAR 26.11.01.11E(2)(c) and COMAR 26.11.08.10H.

COMMENT:
A commenter states that MDE should clarify what is meant by "data, information and calculations" to be submitted in quarterly reports. Is the intent for MDE to receive all one hour averages of all NOx monitoring data to reconstruct the averages to verify compliance?

RESPONSE:
Correct. The Department requires hourly averages of NOx CEM data to be included in the quarterly report. The quarterly report should also contain NOx 24-hour average and 30-day average values as applicable.

COMMENT:
A commenter states that they are unsure why this level of information is required to be submitted quarterly for NOx RACT compliance since MDE has no such reporting requirement for the SO2, NOx and CO CEMS based limits under COMAR 26.11.08.08A - Emission Standards and General Requirements for Large MWCs. In accordance with COMAR 26.11.01.11E(2)(c), MDE already has the discretion to ask for any additional information necessary to evaluate compliance with limits.

RESPONSE:
The regulations contained under COMAR 26.11.08.08A are not part of Maryland's SIP for Large MWCs. COMAR 26.11.08.08A satisfies Maryland 111d and 129 State Plan requirements. Section 129 of the Clean Air Act (CAA) directs the Administrator to develop regulations under section 111 of the Act limiting emissions of nine air pollutants (i.e., particulate matter, carbon monoxide, dioxins/furans, sulfur dioxide, nitrogen oxides, hydrogen chloride, lead, mercury, and cadmium) from four categories of solid waste incineration units: municipal solid waste; hospital, medical and infectious solid waste; commercial and industrial solid waste; and other solid waste.

MDE is authorized to require information as necessary to determine continuous compliance. The reporting requirements specified under existing COMAR 26.11.01.11E(2)(c) and proposed COMAR 26.11.08.10H serve the purpose of demonstrating compliance for Maryland's SIP to satisfy the ozone NAAQS. MDE believes the quarterly reports are necessary and appropriate.

COMMENT:
A commenter requests that the 24-hour NOx limit of 150 ppmv compliance date for Wheelabrator could be changed to 6 months after the effective date of the regulation or May 1, 2019 whichever is later and the 30-day NOx limit of 145 ppmv compliance date could be 12 months after effective date of the regulation or May 1, 2020 whichever is later.

RESPONSE:
The Department believes that sufficient time has been provided to meet the compliance dates contained in COMAR 26.11.08.10. Wheelabrator has had the optimized NOx control technologies in place since June 2017, which provided a full year to conduct long-term testing and evaluation of the NOx emission controls to meet a 24-hour 150 ppmv emission limit and an additional year to demonstrate compliance with the 30-day 145 ppmv emission limit. Additionally, altering the compliance dates contained in the regulation would constitute a substantive amendment which would require re-proposal of the entire regulation and would delay adoption of the regulation for another full year.

SECTION 10 - Second Revision – COMAR amendments effective May 4, 2020

(j) The Department shall publish public notice of a preliminary approval of the required plans in accordance with [§N(3)(c)] *§N(4)(c)* of this regulation. The notice shall provide for a period of 30 days for public comment and shall specify how to review and copy the preliminary approval, NOI, and the required plans. For a CAFO, the notice shall also specify the procedure for making a written request for a public hearing regarding the preliminary approval of the terms of the required plans.

(k)—(n) (text unchanged)

(o) Interested Persons.

(i)—(ii) (text unchanged)

(iii) The Department shall provide a copy of the public notice of the preliminary approval in [§N(3)(i)] *§N(4)(i)* of this regulation to interested persons and provide them access to a copy of the preliminary approval via electronic mail or U.S. mail or through providing a link to the Department's website.

(iv) (text unchanged)

(p)—(q) (text unchanged)

O.—P. (text unchanged)

.09-1 Fees for General Discharge Permits.

A.—I. (text unchanged)

J. Fee for Discharges from Concentrated Animal Feeding Operations.

[(1) A CAFO shall pay an annual permit fee. The first annual fee payment shall be submitted to the Department with the NOI form. The Department will bill the permittee annually, and the fee shall be paid annually not later than the anniversary of the effective date of the permit. The following permit fees shall be collected based on the size category of the facility defined in Table 1 under Regulation 26.08.03.09A(3):

Size Category	Large	Medium	Small
Annual Permit Fee	$1200	$600	$120]

(1) A CAFO with a total house capacity of 350,000 square feet or more shall pay fees to the Department in accordance with the following requirements:

(a) The CAFO shall pay to the Department an application fee of $2,000 with the NOI form if the operation is:

(i) A proposed new CAFO; or

(ii) A modification of an existing CAFO to expand the total house capacity of the facility to 350,000 square feet or more; and

(b) A CAFO that holds a discharge permit and has a total house capacity of 350,000 square feet or more shall pay to the Department an annual permit fee of $1,200 no later than 1 year after the date of renewed coverage under a discharge permit, and pay a $1,200 permit fee for every year thereafter.

(2) Except as provided under §J(1) of this regulation, a CAFO shall pay to the Department an application fee with the NOI form that is based on the size category of the CAFO defined in Table 1 under COMAR 26.08.03.09A(3), in the accordance with the following schedule:

Size Category	*Large*	*Medium*	*Small*
Application Fee	*$800*	*$300*	*$60*

(3) There is no annual fee for a CAFO with a total house capacity of less than 350,000 square feet.

[(2)] *(4)* (text unchanged)

K. (text unchanged)

BENJAMIN H. GRUMBLES
Secretary of the Environment

Subtitle 11 AIR QUALITY

26.11.08 Control of Incinerators

Authority: Environment Article, §§1-101, 1-404, 2-101—2-103, 2-301—2-303, 2-406, 10-102, and 10-103, Annotated Code of Maryland

Notice of Proposed Action

[19-190-P]

The Secretary proposes to amend Regulations **.01** and **.10** under **COMAR 26.11.08 Control of Incinerators**.

Statement of Purpose

The purpose of this action is to amend nitrogen oxide (NO_x) reasonable available control technology (RACT) requirements under COMAR 26.11.08.01 and COMAR 26.11.08.10 for large municipal waste combustors (Large MWCs). In order to satisfy the Environmental Protection Agency's (EPA) updated startup, shutdown, and malfunction (SSM) policy (80 Fed. Reg. 33840), NO_x emission limits shall be extended to cover periods when a Large MWC is combusting only fossil fuel, as a means to warm up the furnace and other critical components prior to municipal solid waste being fed to the combustor. Additional amendments are being made to clarify how the 24-hour block average emission rates and 30-day rolling average emission rates are to be calculated.

The amendments will be submitted to the U.S. Environmental Protection Agency for approval as part of Maryland's State Implementation Plan (SIP).

Background

On December 6, 2018, the Maryland Department of the Environment (MDE) adopted updates to NO_x RACT for Large MWCs with a capacity greater than 250 tons per day. New regulation COMAR 26.11.08.10 requires that Maryland's two Large MWCs shall meet specific NO_x 24-hour block average emission rates by May 1, 2019, and NO_x 30-day rolling average emission rates by May 1, 2020, except during periods of startup and shutdown.

During periods of startup and shutdown, additional ambient air is introduced into the furnace making concentration-based emission limits not practical during these times. The excess ambient air makes it technically infeasible for MWCs to comply with the emission rates due to the "7 percent oxygen correction factor" that is required to be applied to the NO_x 24-hour block rates. Therefore, an equivalent mass-based emission limit is required during startup and shutdown. In addition to the mass-based emission limit, the NO_x 24-hour block average emission rate will apply for the 24-hour period after startup is completed and before shutdown commences, as applicable.

EPA informed MDE that since the definition of "startup" excludes warm-up periods, the regulations present a period of time when no NO_x emission limits are in place. As is the case with startup and shutdown, warm-up periods require excess ambient air to be introduced into the furnace, making concentration-based emission limits not practical. Therefore, an equivalent mass-based emission limit will be required during warm-up periods.

Large MWCs operate solely on natural gas during warm-up periods. Input to natural gas burners and corresponding furnace temperatures are increased gradually to ensure safe operations and integrity of incinerator components. Warm-up periods may run from 3 hours to 16 hours depending upon a number of variables, such as ambient temperatures, duration of unit shutdown, furnace temperature, etc. The warm-up period ends when startup begins, which entails municipal solid waste being fed to the combustor. By definition, under COMAR 26.11.08 periods of startup and shutdown are limited to 3 hours in duration.

This regulatory action proposes NO_x RACT standards for Large MWCs during warm-up periods. There is no equivalent federal RACT standard for Large MWCs. Maryland's existing NO_x RACT for Large MWCs is based upon 40 CFR 60, Subpart Ea — Standards of Performance for Municipal Waste Combustors for Which Construction Is Commenced After December 20, 1989, and On or Before September 20, 1994, 40 CFR 60, Subpart Eb — New Source Performance Standards for Large Municipal Waste Combustors constructed after September 20, 1994, and 40 CFR 60.Subpart Cb — Emission Guidelines and Compliance Times for Large Municipal Waste Combustors constructed on or before September 20, 1994.

Sources Affected and Location

There are two large MWCs in Maryland, Wheelabrator Baltimore, L.P. (Wheelabrator), and Montgomery County Resource Recovery Facility (MCRRF).

Requirements

Warm-up Period

This action establishes warm-up period NO_x RACT emission limitations and related requirements for large MWCs with a capacity greater than 250 tons per day. The amendments to COMAR 26.11.08.10 will require that as of January 1, 2020, Maryland's two Large MWCs shall meet mass-based emission limits during warm-up periods. During periods of warm-up the Montgomery County Resource Recovery Facility shall meet a facility wide NO_x emission limit of 202 lbs/hr timed average mass loading averaged over the hours operated in warm-up period and the Wheelabrator Baltimore, Inc., facility shall meet a unit specific NO_x emission limit of 84 lbs/hr timed average mass loading averaged over the hours operated in warm-up period.

The startup, shutdown, and warm-up period mass emission limits are based upon the 24-hour block average NO_x RACT rates applicable to each Large MWC (incorporating the NO_x 24-hour block average emission rates of COMAR 26.11.08.10B into the calculation) and provide equivalent stringency to the concentration limits that apply at all other times. Mass-based emission calculations are derived utilizing 40 CFR 60.1460 (Concentration correction to 7 percent oxygen) or 40 CFR 60.45 (Conversion procedures to convert CEM data into applicable standards). EPA Method 19 may also be utilized to determine NO_x emission rates based upon oxygen concentrations. Facility average flue gas flow rates are also utilized in the calculations. The calculation methodology for the mass emission limits is based upon the Prevention of Significant Deterioration (PSD) Approval for each affected facility.

The NO_x RACT amendments further specify that Large MWCs shall minimize NO_x emissions during warm-up periods by operating and optimizing the use of all installed pollution control technology and combustion controls consistent with the technological limitations, manufacturers' specifications, good engineering and maintenance practices, and good air pollution control practices for minimizing emissions (as defined in 40 CFR §60.11(d)) for such equipment and the unit at all times the unit is in operation. These requirements are currently in place for normal operations and periods of startup and shutdown. Quarterly reporting requirements which demonstrate compliance with the NO_x RACT emission rates and NO_x mass loading emission limits are amended to include warm-up periods. The reports shall now include flagging of periods of warm-up and exceedance of warm-up period emission rates.

NO_x Emission Rate Calculations

The existing definition for "30-day rolling average emission rate" under COMAR 26.11.08.01 inadvertently required the summation of the total hourly ppmv NO_x in a 30-day period and then dividing by 30 days to determine the 30-day rolling average emission rate. The proposed amendment now clarifies that the 30-day rolling average emission rate is to be calculated by summing the total hourly ppmv of NO_x averages for the 30-day period and then dividing by the total number of hourly averages in the 30-day period. Total hourly ppmv NO_x averages are to exclude periods of warm-up, startup, and shutdown.

The following scenarios demonstrate the applicable NO_x emission limits for Large MWCs:

• For any operating day that does not include a warm-up, startup, or shut down event, each operating unit of a Large MWC must meet the applicable NO_x emission limits of COMAR 26.11.08.10B, corrected to 7% oxygen, for the 24-hour block average that occurs from midnight to midnight. [COMAR 26.11.08.10B]

• For any operating day which includes a warm-up event, the following emission limit must be met:

A NO_x mass loading emission limitation of either COMAR 26.11.08.10D(5) or (6), respectively, shall be met during the hours of the warm-up period. For example, if Unit 1 begins to warm-up at 5 p.m. on a Friday, then from 5 p.m. that Friday until startup is commenced (i.e., the unit begins the continuous burning of municipal solid waste), the facility or unit, respectively, will need to meet the NO_x mass loading emission limit averaged over the hours the unit was performing the warm-up. [COMAR 26.11.08.10D (5) and (6)]

• For any operating day which includes a startup event, the following emission limits must be met:

(i) The facility wide NO_x mass loading emission limit of COMAR 26.11.08.10D(1) or (2), respectively, over a 24-hour period beginning when startup commences. For example, if Unit 1 starts up at 5 p.m. on a Friday, then from 5 p.m. that Friday to 5 p.m. the following Saturday the facility will need to meet the 24-hour mass loading emission limit. [COMAR 26.11.08.10D (1) or (2)]

(ii) The unit that commenced startup will also need to meet the respective 24-hour block average emission limit of COMAR 26.11.08.10B, corrected to 7% oxygen, beginning after the 3-hour startup period ends. For example, if Unit 1 starts up at 5 p.m. on a Friday, then from 8 p.m. on that Friday to 8 p.m. the following Saturday the unit will need to meet their respective NO_x 24-hour block average emission rate, corrected to 7% oxygen. [COMAR 26.11.08.10D(3)]

(iii) The NO_x 24-hour block average emission rate of COMAR 26.11.08.10B shall begin to be calculated anew at midnight following initiation of a startup event. [COMAR 26.11.08.10B]

• For any operating day which includes a shutdown event, the following emission limits must be met:

(i) The facility wide NO_x mass loading emission limit of COMAR 26.11.08.10D(1) or (2), respectively, over a 24-hour period prior to the end of shutdown. For example, if Unit 1 commences shutdown at 2 p.m. on a Friday, then by definition shutdown is complete at 5 p.m. on that Friday. Accordingly, the facility must meet the 24-hour mass loading emission limit for the time period covering 5 p.m. that Friday to 5 p.m. the prior Thursday. [COMAR 26.11.08.10D(2)]

(ii) The unit that shutdown will also need to meet the respective 24-hour block average emission limit of COMAR 26.11.08.10B, corrected to 7% oxygen, prior to the commencement of shutdown. For example, if Unit 1 commences shutdown at 2 p.m. on a Friday, then the unit must meet the 24-hour block average emission limit, corrected to 7% oxygen limit, for the time period covering 2 p.m. on that Friday to 2 p.m. the prior Thursday. [COMAR 26.11.08.10D(4)]

(iii) The NO_x 24-hour block average emission rate of COMAR 26.11.08.10B shall be calculated up to and including the previous midnight prior to a shutdown event. [COMAR 26.11.08.10B]

• Excluding periods of warm-up, startup, or shutdown, each operating unit of a Large MWC must meet the applicable NO_x emission limits of COMAR 26.11.08.10C, corrected to 7% oxygen, for the 30-day rolling average. [COMAR 26.11.08.10C]

This process ensures that during all hours of operation there is an applicable NO_x emission standard in place, as is required by EPA's 2015 SSM policy.

Comparison to Federal Standards

There is no corresponding federal standard to this proposed action.

Estimate of Economic Impact

The proposed action has no economic impact.

Economic Impact on Small Businesses

The proposed action has minimal or no economic impact on small businesses.

Impact on Individuals with Disabilities

The proposed action has no impact on individuals with disabilities.

Opportunity for Public Comment

The Department of the Environment will hold a public hearing on the proposed action on October 29, 2019, at 1 p.m. at the Department of the Environment, 1800 Washington Boulevard, 1st Floor Conference Rooms, Baltimore, Maryland 21230-1720. Interested persons are invited to attend and express their views. Comments may be sent to Mr. Randy Mosier, Chief of the Regulation Division, Air and Radiation Administration, Department of the Environment, 1800 Washington Boulevard, Suite 730, Baltimore, Maryland 21230-1720, or email to randy.mosier@maryland.gov. Comments must be received no later than 5 p.m. on October 29, 2019, or be submitted at the hearing. For more information, call Randy Mosier at (410) 537-4488.

.01 Definitions.

A. (text unchanged)

B. Terms Defined.

(1) — (60) (text unchanged)

(61) "30-day rolling average emission rate" means a value of NO_x emissions in ppmv, corrected to 7 percent oxygen, calculated by:

(a) Summing the total hourly ppmv of NO_x *averages* emitted from the unit during the current operating day and *all hourly NO_x ppmv averages for* the previous 29 operating days, excluding periods of *warm-up,* startup, and shutdown; and

(b) Dividing the total hourly ppmv of NO_x emitted from the unit during the 30 operating days summed in §B(61)(a) of this regulation by [30] *the total number of hourly averages in the 30-day period*.

(62) "24-hour block average emission rate" means a value of NO_x emissions in ppmv, corrected to 7 percent oxygen, calculated by:

(a) Summing the hourly average ppmv of NO_x emitted from the unit during 24 hours between midnight of one day and ending the following midnight, excluding periods of *warm-up,* startup, and shutdown; and

(b) Dividing the total sum of hourly NO_x ppmv values emitted during 24 hours between midnight of one day and ending the following midnight by 24, *excluding periods of warm-up, startup, and shutdown*.

(63) "Warm-up period" means a period of time that:

(a) Commences when a unit at a Large MWC is combusting fossil fuel or other nonmunicipal solid waste fuel, and no municipal solid waste is being fed to the combustor; and

(b) Ends for a unit at a Large MWC when municipal solid waste is being fed to the combustor.

[(63)] *(64)* (text unchanged)

.10 NO_x Requirements for Large Municipal Waste Combustors.

A. The owner and operator of a Large MWC shall minimize NO_x emissions by operating and optimizing the use of all installed pollution control technology and combustion controls consistent with the technological limitations, manufacturers' specifications, good engineering and maintenance practices, and good air pollution control practices for minimizing emissions (as defined in 40 CFR §60.11(d)) for such equipment and the unit at all times the unit is in operation, including periods of startup, [and] shutdown, *and warm-up*.

B. As of May 1, 2019, the owner or operator of a Large MWC shall meet the following applicable NO_x emission rates, except for periods of startup, [and] shutdown, *and warm-up*:

(table unchanged)

C. As of May 1, 2020, the owner or operator of a Large MWC shall meet the requirements of §B of this regulation and the following applicable NO_x emission rates, except for periods of startup, [and] shutdown, *and warm-up*:

(table unchanged)

D. Startup, [and] Shutdown, *and Warm-Up* NO_x Emission Limitations.

(1) — (4) (text unchanged)

(5) As of January 1, 2020, a facility-wide NO_x emission limit of 202 lbs/hr timed average mass loading over the warm-up period shall apply for the Montgomery County Resource Recovery Facility.

(6) As of January 1, 2020, a unit-specific NO_x emission limit of 84 lbs/hr timed average mass loading over the warm-up period shall apply for Wheelabrator Baltimore Inc.

E. Additional NO_x Emission Control Requirements.

(1) — (2) (text unchanged)

(3) Not later than January 1, 2020, based upon the results of the feasibility analysis as required under §E(1) of this regulation, the owner or operator of Wheelabrator Baltimore Inc. shall propose and submit a NO_x 24-hour block average emission rate, NO_x 30-day rolling average emission rate, and NOx mass loading emission limitation for periods of startup, shutdown, [and] malfunction, *and warm-up*.

F. (text unchanged)

G. Not later than 45 days after the effective date of this regulation, the owner or operator of a Large MWC shall submit a plan to the Department and EPA for approval that demonstrates how the Large MWC will operate installed pollution control technology and combustion controls to meet the requirements of §A of this regulation. The plan shall summarize the data that will be collected to demonstrate compliance with §A of this regulation. The plan shall cover all modes of operation, including but not limited to normal operations, startup, [and] shutdown, *and warm-up*.

H. Beginning July 1, 2019, the owner or operator of a Large MWC shall submit a quarterly report to the Department containing:

(1) (text unchanged)

(2) Data, information, and calculations, including NO_x continuous emission monitoring data and stack flow data, which demonstrate compliance with the startup, [and] shutdown, *and warm-up* mass NO_x emission limits as required in §D of this regulation;

(3) Flagging of periods of startup, [and] shutdown, *and warm-up* and exceedances of emission rates;

(4) (text unchanged)

(5) Documented actions taken during periods of startup, [and] shutdown, *and warm-up* in signed, contemporaneous operating logs.

I. — K. (text unchanged)

L. Compliance with the NO_x Mass Loading Emission Limitation for the Montgomery County Resource Recovery Facility.

(1) — (2) (text unchanged)

(3) Compliance with the NOx mass loading emission limitations for warm-up periods in §D(5) of this regulation shall be demonstrated by calculating the average of all hourly average NOx

emission concentrations during the warm-up period from continuous emission monitoring systems.

(4) The calculations in §L(3) of this regulation shall utilize stack flow rates derived from flow monitors, for all the hours during the warm-up period.

M. Compliance with the NO_x Mass Loading Emission Limitation for the Wheelabrator Baltimore Inc.

(1) — (2) (text unchanged)

(3) Compliance with the NOx mass loading emission limitations for warm-up periods in §D(6) of this regulation shall be demonstrated by calculating the average of all hourly average NOx emission concentrations during the warm-up period from continuous emission monitoring systems.

(4) The calculations in §M(3) of this regulation shall utilize the applicable Prevention of Significant Deterioration calculation methodology, for all the hours during the warm-up period.

BENJAMIN H. GRUMBLES
Secretary of the Environment

Subtitle 11 AIR QUALITY

26.11.17 Nonattainment Provisions for Major New Sources and Major Modifications

Authority: Environment Article, §§1-101, 1-404, 2-101—2-103, 2-301—2-303, 10-102, and 10-103, Annotated Code of Maryland

Notice of Proposed Action

[19-189-P]

The Secretary of the Environment proposes to amend Regulation **.04** under **COMAR 26.11.17 Nonattainment Provisions for Major New Sources and Major Modifications**.

Statement of Purpose

The purpose of this action is to amend COMAR 26.11.17.04 to remove the Environmental Protection Agency (EPA) from the submittal and approval process for interprecursor trading (IPT).

The amendments will be submitted to the U.S. Environmental Protection Agency for approval as part of Maryland's State Implementation Plan (SIP).

Sources Affected and Location

Although these regulations will be particularly beneficial to new major stationary sources and major modifications at existing major stationary sources locating in the Baltimore metropolitan 8-hour ozone nonattainment area, the proposed amendments will apply throughout the entire State of Maryland. All areas of the State of Maryland are located either in an ozone nonattainment area or in the Ozone Transport Region and are, therefore, subject to nonattainment New Source Review (NSR) requirements.

Background

On April 9, 2018, the Department adopted new amendments to specifically address the nonattainment NSR requirement to offset new emissions with creditable emission reductions. The amendments allowed interprecursor trading for the ozone precursors—NO_x and VOC. In accordance with COMAR 26.11.17, new or modified major air emission sources of ozone precursors must obtain emission reduction credits (ERCs) to offset emission increases. The ERC program ensures that emission increases from the operation of relocated sources or from the operation of new or modified sources does not impede the progress of attaining the National Ambient Air Quality Standards (NAAQS). The amendments to the ERC regulations of COMAR 26.11.17.04 were adopted at the time in accordance with EPA guidance contained in EPA's proposed 2008 and 2015 Ozone Implementation Rules.

On December 6, 2018, EPA finalized their nonattainment area and ozone transport region (OTR) implementation requirements for the 2015 ozone NAAQS that were promulgated on October 1, 2015. In response to comments, EPA amended the final rule to include the following: "... air agencies will not be required to obtain EPA approval of IPT ratios when implementing a case-specific IPT program.... The EPA acknowledges, based on comments received, that the requirement of EPA approval of IPT ratios could impose additional burdens and result in permit delays. Hence, in the final rule, the EPA is eliminating this approval requirement for the case-specific ratios.... Finally, the EPA, will, of course, also have an opportunity to review and comment on the application of any IPT ratio (default or case-specific) to a particular source or location during the public comment period afforded as part of the NNSR [Nonattainment New Source Review] permitting process."

There are no expected economic impacts from this action. There will be no impact on the Department or other state agencies or local government as a result of this action.

Projected Emission Reductions

There are no emission reductions from these amendments.

Comparison to Federal Standards

There is a corresponding federal standard to this proposed action, but the proposed action is not more restrictive or stringent.

Estimate of Economic Impact

The proposed action has no economic impact.

Economic Impact on Small Businesses

The proposed action has minimal or no economic impact on small businesses.

Impact on Individuals with Disabilities

The proposed action has no impact on individuals with disabilities.

Opportunity for Public Comment

The Department of the Environment will hold a public hearing on the proposed action on October 29, 2019, at 1 p.m., at the Department of the Environment, 1800 Washington Boulevard, 1st Floor Conference Rooms, Baltimore, Maryland 21230-1720. Interested persons are invited to attend and express their views. Comments may be sent to Mr. Randy Mosier, Chief of the Regulation Division, Air and Radiation Administration, Department of the Environment, 1800 Washington Boulevard, Suite 730, Baltimore, Maryland 21230-1720, or email to randy.mosier@maryland.gov. Comments must be received no later than 5 p.m. on October 29, 2019 or be submitted at the hearing. For more information, call Randy Mosier at (410) 537-4488.

.04 Creating Emission Reduction Credits (ERCs).

A. — E. (text unchanged)

F. Interprecursor Trading.

(1) Provided that the other requirements for such offsets are satisfied, the offset requirements of COMAR 26.11.17.03B(3) for emissions of NOx and VOC may be satisfied through interprecursor trading by offsetting reductions of emissions of either NOx or VOC, by submitting to the Department [and EPA] for written approval the following information:

(a) — (c) (text unchanged)

(2) Approvals of precursor substitutions shall be made by the Department [and EPA] on a case-by-case basis and are permit specific.

BENJAMIN H. GRUMBLES
Secretary of the Environment

Final Action on Regulations

Symbol Key

- Roman type indicates text already existing at the time of the proposed action.
- *Italic type* indicates new text added at the time of proposed action.
- *Single underline, italic* indicates new text added at the time of final action.
- Single underline, roman indicates existing text added at the time of final action.
- [[Double brackets]] indicate text deleted at the time of final action.

Title 02
OFFICE OF THE ATTORNEY GENERAL

Subtitle 08 SEXUAL ASSAULT EVIDENCE KITS

Notice of Final Action

[20-066-F]

On April 14, 2020, the Office of the Attorney General adopted:

(1) Amendments to Regulations **.03** and **.04** and the repeal of Regulation **.05** under **COMAR 02.08.01 Sexual Assault Victims' Rights — Disposal of Rape Kit Evidence and Notification**;

(2) New Regulations **.01 — .05** under a new chapter, **COMAR 02.08.02 Sexual Assault Evidence Collection Kits — Analysis;**

(3) New Regulations **.01—.05** under a new chapter, **COMAR 02.08.03 Review of Law Enforcement Decisions Not to Test a Kit**; and

(4) New Regulations **.01** and **.02** under a new chapter, **COMAR 02.08.04 Reporting**.

This action, which was proposed for adoption in 47:5 Md. R. 314—316 (February 28, 2020), has been adopted as proposed.

Effective Date: May 4, 2020.

BRIAN E. FROSH
Attorney General

Title 26
DEPARTMENT OF THE ENVIRONMENT

Subtitle 11 AIR QUALITY

26.11.08 Control of Incinerators

Authority: Environment Article, §§1-101, 1-404, 2-101—2-103, 2-301—2-303, 2-406, 10-102, and 10-103, Annotated Code of Maryland

Notice of Final Action

[19-190-F]

On April 10, 2020, the Secretary of the Environment adopted amendments to Regulations **.01** and **.10** under **COMAR 26.11.08 Control of Incinerators**. This action, which was proposed for adoption in 46:20 Md. R. 862—865 (September 27, 2019), has been adopted as proposed.

Effective Date: May 4, 2020.

BENJAMIN H. GRUMBLES
Secretary of the Environment

Maryland General Assembly
Department of Legislative Services

Proposed Regulations
Department of the Environment

(DLS Control No. 19-155)

Overview and Legal and Fiscal Impact

These regulations establish nitrogen oxide (NOx) emissions control requirements for large municipal waste combustors (MWCs) that apply during periods of warm-up. The regulations also clarify how the "24-hour block average emission rate" and the "30-day rolling average emission rate" are to be calculated.

The regulations present no legal issue of concern.

There is no fiscal impact on State or local agencies.

Regulations of COMAR Affected

Department of the Environment:

Air Quality: Control of Incinerators: COMAR 26.11.08.01 and .10

Legal Analysis

Background

Ozone is produced when volatile organic compounds and NOx react in the presence of heat and sunlight. The federal Clean Air Act (CAA) requires the U.S. Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) for six criteria pollutants, including ozone, which are harmful to public health and the environment. States are responsible for developing State Implementation Plans to meet the standards.

With respect to NOx emissions, in accordance with the CAA, the Department of the Environment must adopt reasonably available control technology (RACT) requirements for major stationary sources of NOx in certain nonattainment areas, including most of Maryland. RACT is the lowest emissions limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility.

In December 2018, the department adopted regulations establishing NOx RACT requirements for large MWCs, which apply during periods of operation, startup, and shutdown (see DLS Control No. 18-179). EPA advised the department that the State's definition of "startup"

excludes periods of warm-up, thus presenting a period of time where no NOx emission limits are in place.

Summary of Regulations

The regulations establish NOx emissions limits for large MWCs that apply during the "warm-up period," which the regulations define as commencing when the unit is combusting fossil fuel or other non-municipal solid waste fuel, and no municipal solid waste is being fed to the combustor, and ending when municipal solid waste is being fed to the combustor. The regulations also establish compliance requirements and make conforming changes.

In addition to establishing warm-up period NOx emissions limitations and related requirements, the regulations clarify how the "24-hour block average emission rate" and the "30-day rolling average emission rate" are to be calculated.

Legal Issues

The regulations present no legal issue of concern.

Statutory Authority and Legislative Intent

The department cites §§ 1-101, 1-404, 2-101 through 2-103, 2-301 through 2-303, 2-406, 10-102, and 10-103 of the Environment Article as statutory authority for the regulations. More specifically, § 1-404 provides the Secretary of the Environment with broad authority to adopt regulations to carry out the provisions of law that are within the jurisdiction of the Secretary and to review and revise these regulations. Section 2-102 states that it is the policy of the State to maintain the degree of purity of the air necessary to protect the health, the general welfare, and the property of the people of the State. Section 2-301 authorizes the department to adopt regulations to control air pollution in the State and requires the department to adopt regulations that establish standards and procedures to be followed whenever pollution of the air reaches an emergency condition. Section 2-302 requires the department to adopt regulations that set emission standards and ambient air quality standards for each of the air quality control areas in the State, and § 2-303 requires the department to follow the requirements of the Administrative Procedure Act when adopting regulations for ambient air quality control. The remaining cited authority is not relevant to these regulations.

The relevant cited authority is correct and complete. The regulations comply with the legislative intent of the law.

Fiscal Analysis

There is no fiscal impact on State or local agencies.

Agency Estimate of Projected Fiscal Impact

The department advises that the regulations have no impact on State or local governments. The Department of Legislative Services concurs. The department notes that the regulations (1) clarify how certain emissions measurements are calculated and (2) update regulations to satisfy a new warm-up standard from EPA for large MWCs. The department advises that, even though one of the affected facilities, the Montgomery County Resource Recovery Facility, is operated by Montgomery County, the facility already operates within the warm-up standards established under the regulations. Thus, there is no fiscal or operational impact on the county.

Impact on Budget

There is no impact on the State operating or capital budget.

Agency Estimate of Projected Small Business Impact

The department advises that the regulations have minimal or no economic impact on small businesses in the State. The Department of Legislative Services concurs.

Additional Comments

The department notes that two large MWCs are affected by the regulations, including the Montgomery County Resource Recovery Facility discussed above. The other facility, Wheelabrator Baltimore, Inc. (which is neither a small business nor operated by a local government), is also operating within the emissions standards established under the regulations, and is not expected to incur any additional costs as a result of the regulations.

Contact Information

Legal Analysis: Cristen C. Flynn – (410) 946/(301) 970-5350
Fiscal Analysis: Kathleen P. Kennedy – (410) 946/(301) 970-5510

SECTION 11 - Technical Support Document

TECHNICAL SUPPORT DOCUMENT

FOR

Amendments to COMAR 26.11.08 – Control of Incinerators

September 25, 2019

PREPARED BY:
MARYLAND DEPARTMENT OF THE ENVIRONMENT
1800 Washington Boulevard
Baltimore Maryland 21230

Table of Contents

I. PURPOSE OF REGULATORY ACTION

The purpose of this action is to amend nitrogen oxide (NOx) reasonable available control technology (RACT) requirements under COMAR 26.11.08.10 for Large municipal waste combustors (MWCs). In order to satisfy the Environmental Protection Agency's (EPA) updated startup, shutdown and malfunction (SSM) policy (80 Fed. Reg. 33840), NOx emission limits shall be extended to cover periods when a Large MWC is solely combusting fossil fuel as a means to warm-up the furnace and other critical components prior to municipal solid waste being fed to the combustor. Additional amendments are being made to clarify how the 24-hour block average emission rates and 30-day rolling average emission rates are to be calculated.

The NOx RACT requirements pertaining to Large MWCs will be submitted to the U.S. Environmental Protection Agency (EPA) for approval as part of Maryland's SIP.

II. FACTS FOR PROPOSAL

A. Background

On December 6, 2018, the Maryland Department of the Environment (MDE) adopted updates to NOx RACT for Large MWCs with a capacity greater than 250 tons per day. New regulation COMAR 26.11.08.10 requires that Maryland's two Large MWCs shall meet specific NOx 24-hour block average emission rates by May 1, 2019 and NOx 30-day rolling average emission rates by May 1, 2020, except during periods of startup and shutdown.

During periods of startup and shutdown, additional ambient air is introduced into the furnace making concentration-based emission limits not practical during these times. The excess ambient air makes it technically infeasible for MWCs to comply with the emission rates due to the "7 percent oxygen correction factor" that is required to be applied to the NOx 24-hour block rates. Therefore, an equivalent mass-based emission limit is required during startup and shutdown. In addition to the mass-based emission limit, the NOx 24-hour block average emission rate will apply for the 24-hour period after startup is completed and before shutdown commences, as applicable.

EPA informed MDE that since the definition of "startup" excludes warm-up periods, the regulations present a period of time when no NOx emission limits are in place. As is the case with startup and shutdown, warm-up periods require excess ambient air to be introduced into the furnace making concentration-based emission limits not practical. Therefore, an equivalent mass-based emission limit will be required during warm-up periods.

Large MWCs operate solely on natural gas during warm-up periods. Input to natural gas burners and corresponding furnace temperatures are increased gradually to ensure safe operations and integrity of incinerator components. Warm-up periods may run from 3 hours to 16 hours depending upon a number of variables, such as ambient temperatures, duration of unit shutdown, furnace temperature, etc. The warm-up period ends when start-up begins, which entails municipal solid waste being fed to the combustor. By definition, under COMAR 26.11.08 periods of startup and shutdown are limited to 3 hours in duration.

B. Sources Affected and Location

There are two large MWCs in Maryland, Wheelabrator Baltimore, L.P. (Wheelabrator), and Montgomery County Resource Recovery Facility (MCRRF).

C. Requirements

Warm-up Period

This action establishes warm-up period NOx RACT emission limitations and related requirements for large MWCs with a capacity greater than 250 tons per day. The amendments to COMAR 26.11.08.10 will require that as of January 1, 2020, Maryland's two Large MWCs shall meet mass-based emission limits during warm-up periods. During periods of warm-up the Montgomery County Resource Recovery Facility shall meet a facility wide NOx emission limit of 202 lbs/hr timed average mass loading averaged over the hours operated in warm-up period and the Wheelabrator Baltimore, Inc. facility shall meet a unit specific NOx emission limit of 84 lbs/hr timed average mass loading averaged over the hours operated in warm-up period.

The startup, shutdown and warm-up period mass emission limits are based upon the 24-hour block average NOx RACT rates applicable to each Large MWC (incorporating the NOx 24-hour block average emission rates of COMAR 26.11.08.10B into the calculation) and provide equivalent stringency to the concentration limits that apply at all other times. Mass based emission calculations are derived utilizing 40 CFR 60.1460 (Concentration correction to 7 percent oxygen) or 40 CFR 60.45 (Conversion procedures to convert CEM data into applicable standards). EPA Method 19 may also be utilized to determine NOx emission rates based upon oxygen concentrations. Facility average flue gas flow rates are also utilized in the calculations. The calculation methodology for the mass emission limits is based upon the Prevention of Significant Deterioration (PSD) Approval for each affected facility.

The NOx RACT amendments further specify that Large MWCs shall minimize NOx emissions during warm-up periods by operating and optimizing the use of all installed pollution control technology and combustion controls consistent with the technological limitations, manufacturers' specifications, good engineering and maintenance practices, and good air pollution control practices for minimizing emissions (as defined in 40 CFR §60.11(d)) for such equipment and the unit at all times the unit is in operation. These requirements are currently in place for normal operations and periods of startup and shutdown. Quarterly reporting requirements which demonstrate compliance with the NOx RACT emission rates and NOx mass loading emission limits are amended to include warm-up periods. The reports shall now include flagging of periods of warm-up and exceedance of warm-up period emission rates.

NOx Emission Rate Calculations
The existing definition for "30-day rolling average emission rate" under COMAR 26.11.08.01 inadvertently required the summation of the total hourly ppmv NOx in a 30-day

period and then dividing by 30 days to determine the 30-day rolling average emission rate. The proposed amendment now clarifies that the 30-day rolling average emission rate is to be calculated by summing the total hourly ppmv of NOx averages for the 30-day period and then dividing by the total number of hourly averages in the 30 day period. Total hourly ppmv NOx averages are to exclude periods of warm-up, startup and shutdown.

The following scenarios demonstrate the applicable NOx emission limits for Large MWCs:

- For any operating day that does not include a warm-up, startup or shut down event, each operating unit of a Large MWC must meet the applicable NOx emission limits of COMAR 26.11.08.10B, corrected to 7% oxygen, for the 24-hour block average that occurs from midnight to midnight.
  [COMAR 26.11.08.10B]

- For any operating day which includes a warm-up event, the following emission limit must be met:

  i. A NOx mass loading emission limitation of either COMAR 26.11.08.10D(5) or (6), respectively, shall be met during the hours of the warm-up period. For example, if Unit 1 begins to warm-up at 5 pm on a Friday, then from 5 pm that Friday until startup is commenced (i.e. the unit begins the continuous burning of municipal solid waste), the facility or unit, respectively, will need to meet the NOx mass loading emission limit averaged over the hours the unit was performing the warm-up. **[COMAR 26.11.08.10D (5) and (6)]**

- For any operating day which includes a startup event, the following emission limits must be met:

  i. The facility wide NOx mass loading emission limit of COMAR 26.11.08.10D(1) or (2), respectively, over a 24-hr period beginning when startup commences. For example, if Unit 1 starts up at 5 pm on a Friday, then from 5 pm that Friday to 5 pm the following Saturday the facility will need to meet the 24-hour mass loading emission limit.
  [COMAR 26.11.08.10D (1) or (2)]

  ii. The unit that commenced startup will also need to meet the respective 24-hr block average emission limit of COMAR 26.11.08.10B, corrected to 7% oxygen, beginning after the 3-hr startup period ends. For example, if Unit 1 starts up at 5 pm on a Friday, then from 8 pm on that Friday to 8 pm the following Saturday the unit will need to meet their respective NOx 24-hour block average emission rate, corrected to 7% oxygen.
  [COMAR 26.11.08.10D(3)]

  iii. The NOx 24-hour block average emission rate of COMAR 26.11.08.10B shall begin to be calculated anew at midnight following initiation of a startup event.
  [COMAR 26.11.08.10B]

- For any operating day which includes a shutdown event, the following emission limits must be met:
    i. The facility wide NOx mass loading emission limit of COMAR 26.11.08.10D(1) or (2), respectively, over a 24-hr period prior to the end of shutdown. For example, if Unit 1 commences shutdown at 2 pm on a Friday, then by definition shutdown is complete at 5 pm on that Friday. Accordingly, the facility must meet the 24-hour mass loading emission limit for the time period covering 5 pm that Friday to 5 pm the prior Thursday.
    [COMAR 26.11.08.10 D (2)]

    ii. The unit that shutdown will also need to meet the respective 24-hr block average emission limit of COMAR 26.11.08.10B, corrected to 7% oxygen, prior to the commencement of shutdown. For example, if Unit 1 commences shutdown at 2 pm on a Friday, then the unit must meet the 24-hr block average emission limit, corrected to 7% oxygen limit, for the time period covering 2 pm on that Friday to 2 pm the prior Thursday.
    [COMAR 26.11.08.10D(4)]

    iii. The NOx 24-hour block average emission rate of COMAR 26.11.08.10B shall be calculated up to and including the previous midnight prior to a shutdown event.
    [COMAR 26.11.08.10B]

- Excluding periods of warm-up, startup or shut down, each operating unit of a Large MWC must meet the applicable NOx emission limits of COMAR 26.11.08.10C, corrected to 7% oxygen, for the 30-day rolling average.
  [COMAR 26.11.08.10C]

This process ensures that during all hours of operation there is an applicable NOx emission standard in place, as is required by EPA's 2015 SSM policy.

D. Projected Emission Reductions

There are no expected NOx emission reductions for Large MWCs from these amendments.

E. Estimate of Economic Impact

Economic Impact on Affected Sources, the Department, other State Agencies, Local Government, other Industries or Trade Groups, the Public

There are no expected economic impacts for Large MWCs. There will be no impact on the Department or other state agencies or local government as a result of this action.

Economic Impact on Small Businesses

The proposed action has minimal or no economic impact on small businesses.

III. COMPARISON TO FEDERAL STANDARDS

This regulatory action proposes NOx RACT standards for Large MWCs during warm-up periods. There is no equivalent federal RACT standard for Large MWCs. Maryland's existing NOx RACT for Large MWCs is based upon 40 CFR 60, Subpart Ea - Standards of Performance for Municipal Waste Combustors for Which Construction Is Commenced After December 20, 1989 and On or Before September 20, 1994, 40 CFR 60, Subpart Eb - New Source Performance Standards for Large Municipal Waste Combustors constructed after September 20, 1994 and 40 CFR 60,Subpart Cb - Emission Guidelines and Compliance Times for Large Municipal Waste Combustors constructed on or before September 20, 1994.

IV. PROPOSED REGULATIONS

DRAFT 9-25-2019
DOWNLOAD 12-11-2018

Title 26 DEPARTMENT OF THE ENVIRONMENT

Subtitle 11 AIR QUALITY

Chapter 08 Control of Incinerators

Authority: Environment Article, §§1-101, 1-404, 2-101—2-103, 2-301—2-303, 2-406, 10-102, and 10-103, Annotated Code of Maryland

.01 Definitions.

A. (text unchanged)

B. Terms Defined.

(1) — (60) (text unchanged)

(61) "30-day rolling average emission rate" means a value of NO_x emissions in ppmv, corrected to 7 percent oxygen, calculated by:

(a) Summing the total hourly ppmv of NO_x *averages* emitted from the unit during the current operating day and *all hourly NO_x ppmv averages for* the previous 29 operating days, excluding periods of *warm-up,* startup and shutdown; and

(b) Dividing the total hourly ppmv of NO_x emitted from the unit during the 30 operating days summed in §B(61)(a) of this regulation by **[**30**]** *the total number of hourly averages in the 30 day period.*

(62) "24-hour block average emission rate" means a value of NO_x emissions in ppmv, corrected to 7 percent oxygen, calculated by:

(a) Summing the hourly average ppmv of NO_x emitted from the unit during 24 hours between midnight of one day and ending the following midnight, excluding periods of *warm-up,* startup and shutdown; and

(b) Dividing the total sum of hourly NO_x ppmv values emitted during 24 hours between midnight of one day and ending the following midnight by 24*, excluding periods of warm-up, startup and shutdown.*

(63) "Warm-up period" means a period of time that:

(a) Commences when a unit at a Large MWC is combusting fossil fuel or other non-municipal solid waste fuel, and no municipal solid waste is being fed to the combustor; and

(b) Ends for a unit at a Large MWC when municipal solid waste is being fed to the combustor.

[(63)] *(64)* "Wet scrubber" means an add-on air pollution control device that utilizes an alkaline scrubbing liquor to collect particulate matter (including nonvaporous metals and condensed organics) or to absorb and neutralize acid gases, or both.

.02 — .09 (text unchanged)

.10 NO_x Requirements for Large Municipal Waste Combustors.

A. The owner and operator of a Large MWC shall minimize NO_x emissions by operating and optimizing the use of all installed pollution control technology and combustion controls consistent with the technological limitations, manufacturers' specifications, good engineering and maintenance practices, and good air pollution control practices for minimizing emissions (as defined in 40 CFR §60.11(d)) for such equipment and the unit at all times the unit is in operation, including periods of startup, **[**and **]**shutdown*, and warm-up*.

B. As of May 1, 2019, the owner or operator of a Large MWC shall meet the following applicable NO_x emission rates, except for periods of startup, **[**and **]**shutdown*, and warm-up*:

(text unchanged)

C. As of May 1, 2020, the owner or operator of a Large MWC shall meet the requirements of §B of this regulation and the following applicable NO_x emission rates, except for periods of startup, **[**and **]**shutdown*, and warm-up*:

(text unchanged)

D. Startup, [and]Shutdown, *and Warm-Up* NO_x Emission Limitations.

(1) — (4) (text unchanged)

(5) As of January 1, 2020, a facility-wide NO_x emission limit of 202 lbs/hr timed average mass loading over the warm-up period shall apply for the Montgomery County Resource Recovery Facility.

(6) As of January 1, 2020, a unit-specific NO_x emission limit of 84 lbs/hr timed average mass loading over the warm-up period shall apply for Wheelabrator Baltimore Inc.

E. Additional NO_x Emission Control Requirements.

(1) — (2) (text unchanged)

(3) Not later than January 1, 2020, based upon the results of the feasibility analysis as required under §E(1) of this regulation, the owner or operator of Wheelabrator Baltimore Inc. shall propose and submit a NO_x 24-hour block average emission rate, NO_x 30-day rolling average emission rate, and NOx mass loading emission limitation for periods of startup, shutdown, **[**and**]** malfunction, *and warm-up*.

F. (text unchanged)

G. Not later than 45 days after the effective date of this regulation, the owner or operator of a Large MWC shall submit a plan to the Department and EPA for approval that demonstrates how the Large MWC will operate installed pollution control technology and combustion controls to meet the requirements of §A of this regulation. The plan shall summarize the data that will be collected to demonstrate compliance with §A of this regulation. The plan shall cover all modes of operation, including but not limited to normal operations, startup, **[**and **]**shutdown, *and warm-up.*

H. Beginning July 1, 2019, the owner or operator of a Large MWC shall submit a quarterly report to the Department containing:

(1) (text unchanged)

(2) Data, information, and calculations, including NO_x continuous emission monitoring data and stack flow data, which demonstrate compliance with the startup, **[**and **]**shutdown, *and warm-up* mass NO_x emission limits as required in §D of this regulation;

(3) Flagging of periods of startup, **[**and **]**shutdown, *and warm-up* and exceedances of emission rates;

(4) (text unchanged)

(5) Documented actions taken during periods of startup **[**and **]**shutdown, *and warm-up* in signed, contemporaneous operating logs.

I. — K. (text unchanged)

L. Compliance with the NO_x Mass Loading Emission Limitation for the Montgomery County Resource Recovery Facility.

(1) — (2) (text unchanged)

(3) Compliance with the NOx mass loading emission limitations for warm-up periods in §D(5) of this regulation shall be demonstrated by calculating the average of all hourly average NOx emission concentrations during the warm-up period from continuous emission monitoring systems.

(4) The calculations in §L(3) of this regulation shall utilize stack flow rates derived from flow monitors, for all the hours during the warm-up period.

M. Compliance with the NO_x Mass Loading Emission Limitation for the Wheelabrator Baltimore Inc.

(1) — (2) (text unchanged)

(3) Compliance with the NOx mass loading emission limitations for warm-up periods in §D(6) of this regulation shall be demonstrated by calculating the average of all hourly average NOx emission concentrations during the warm-up period from continuous emission monitoring systems.

(4) The calculations in §M(3) of this regulation shall utilize the applicable Prevention of Significant Deterioration calculation methodology, for all the hours during the warm-up period.

Appendix A – Air Quality Control Advisory Council

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NOx RACT for Municipal Waste Combustors (MWCs)

AQCAC Meeting – June 17, 2019

Topics Covered

- Municipal Waste Combustors (MWCs) in Maryland
  - MWC overview
  - Purpose of NO_x RACT amendments
- MDE NO_x RACT amendments
  - NO_x 30-day rolling average calculation
  - Warm-up period mass limits
- Baltimore City Clean Air Act
- Timeline

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MD NOx RACT for Large MWCs

- New MWC NO_x RACT and SIP strengthening requirements adopted on December 6, 2018
- There are two large MWCs in Maryland;
  - Wheelabrator Baltimore, Inc. and
  - Montgomery County Resource Recovery Facility (MCRRF)
- Established NO_x 24-hour block average and NO_x 30-day rolling average emission rates
- Facility-wide mass NO_x emission limits during periods of startup and shutdown
- Feasibility analysis for additional NO_x controls for Wheelabrator Baltimore

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Daily and Longer Term Limits

- .10B and C – NOx emission rates
- 24-hour block average rates effective May 1, 2019
- 30-day rolling average rates effective May 1, 2020
  - Allows time to ensure more stringent, long-term rates can be met on a consistent basis

Unit	24 Hour Block Average Rate	30 Day Rolling Average Rate
Wheelabrator	150 ppmv	145 ppmv
MCRRF	140 ppmv	105 ppmv

ppmv = parts per million volume


PROPOSED MWC NOX RACT
AMENDMENTS

NOx 30-day Rolling Average

- Existing definition inadvertently required the summation of the total hourly ppmv NO_x in a 30-day period and then dividing by 30 days
- Amendment clarifies that the calculation should sum the total hourly ppmv of NO_x averages for the 30-day period and then dividing by the total number of hourly averages in the 30-day period
- Clarifies that total hourly ppmv NO_x averages are to exclude periods of startup, shutdown and warm-up

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Warm-up Period Mass Limits

- To satisfy EPA's SSM policy, NO_x emission limits shall be extended to cover periods when a Large MWC is solely combusting fossil fuel as a means to warm-up the furnace and other critical components prior to municipal solid waste being fed to the combustor

- As the current definition of "startup" excludes warm-up periods, the regulations present a period of time when no NO_x emission limits are in place
  - 26.11.08.01B(60)(c) "Startup" for a Large MWC commences when the unit begins the continuous burning of municipal solid waste and continues for a period of time not to exceed 3 hours, but does not include any warm-up period when the particular unit is combusting fossil fuel or other non-municipal solid waste fuel, and no municipal solid waste is being fed to the combustor.

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Warm-up Period Mass Limits

- The warm-up period mass emission limits are based upon the 24-hour block average NOx RACT rates applicable to each Large MWC (incorporating the NOx 24-hour block average emission rates of COMAR 26.11.08.10B into the calculation) and provide equivalent stringency to the concentration limits that apply at all other times

- During periods of warm-up:
  - the Montgomery County Resource Recovery Facility shall meet a facility wide NOx emission limit of 202 lbs/hr timed average mass loading averaged over the hours operated in warm-up mode
  - the Wheelabrator Baltimore, Inc. facility shall meet a facility wide NOx emission limit of 252 lbs/hr timed average mass loading averaged over the hours operated in warm-up mode.

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Timeline

- AQCAC
  - June 17, 2019
- Regulation Adoption
  - NPA – September 2019
  - Public Hearing – October 2019
  - NFA – November 2019
- Effective Date
  - December 2019

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BALTIMORE CITY'S
CLEAN AIR ACT

Baltimore City Clean Air Act

- The CAA establishes requirements for Wheelabrator Baltimore and the Hospital Medical Waste Incinerator at Curtis Bay

- Requires operation of CEMs for dioxins, furans, carbon dioxide, carbon monoxide, hydrochloric acid, hydrofluoric acid, nitrogen oxides, sulfur dioxides, particulate matter, volatile organic compounds, polycyclic aromatic hydrocarbons, arsenic, cadmium, chromium, lead, manganese, mercury, nickel, selenium, and zinc

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Baltimore City Clean Air Act

- Each facility is to meet the following emission limits:

Pollutant	Emission Limit
Mercury	15 µg/DSCM (micrograms per dry standard cubic meter)
Sulfur Dioxide	18 ppmvd (parts per million dry volume)
Dioxins/Furans	2.6 NG/DCSM (nanograms per dry standard cubic meter)
Nitrogen Oxides (NOx)	45 ppmvd – 24 hour block average 40 ppmvd – 12 month rolling average

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Discussion

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Appendix B – EPA Startup, Shutdown, and Malfunction criteria

Maryland Department of the Environment

MWC NOx RACT Mass Loading Limits during Periods of Startup and Shutdown

September 25, 2019

Purpose

On June 12, 2015, the Environmental Protection Agency (EPA) published an updated startup, shutdown and malfunction (SSM) policy in the Federal Register, 80 Fed. Reg. 33840. The SSM Policy, in part, provides guidance to states for development of alternative emission limitations during SSM events. There are seven criteria that the guidance recommends states consider when setting an alternative emission limitation. The purpose of this document is to address those seven specific criteria as appropriate considerations for developing emission limitations in NOx RACT SIP provisions that apply during startup and shutdown for large municipal waste combustors (Large MWCs).

Section XI.D. of the SSM Policy provides recommendations for the development of alternative emission limitations applicable during startup and shutdown. *See* 80 Fed. Reg. at 33980. A state can develop special, alternative emission limitations that apply during startup or shutdown if the source cannot meet the otherwise applicable emission limitation in a State Implementation Plan (SIP). SIP provisions may include alternative emission limitations for startup and shutdown as part of a continuously applicable emission limitation when properly developed and otherwise consistent with Clean Air Act (CAA) requirements.

The EPA recommends that, in order to be approvable (*i.e.,* meet CAA requirements), alternative requirements applicable to the source during startup and shutdown should be narrowly tailored and take into account considerations such as the technological limitations of the specific source category and the control technology that is feasible during startup and shutdown.

EPA's Current Startup, Shutdown, Malfunction (SSM) Policy

EPA has revised prior guidance provided in the CFR with respect to startup, shutdown and malfunctions. Alternative emission limitations may be developed for startup, shutdown or other normal modes of operation, but no longer may be applied during periods of malfunction.

EPA's current SSM Policy states: "EPA is reiterating and clarifying its prior guidance concerning how states may elect to replace existing exemptions for excess emissions during SSM events

with properly developed alternative emission limitations that apply to the affected sources during startup, shutdown or other normal modes of source operation (*i.e.,* that apply to excess emissions during those normal modes of operation as opposed to during malfunctions)." 80 Fed. Reg. at 33845.

"The EPA recognizes that…some sources may need to take steps to control emissions better so as to comply with emission limitations continuously, as required by the CAA, or to increase durability of components and monitoring systems to detect and manage malfunctions promptly." 80 Fed. Reg. at 33849.

EPA's SSM policy provides that in the event of a malfunction which causes excess emissions, consideration for enforcement discretion should be exercised, provided reasonable care to avoid malfunctions and good operating practices are being followed by the source operator: "The EPA emphasizes that the absence of an affirmative defense provision in a SIP, whether as a freestanding generally applicable provision or as a specific component of a particular emission limitation, does not mean that all exceedances of SIP emission limitations will automatically be subject to enforcement or automatically be subject to imposition of particular remedies. Pursuant to the CAA, all parties with authority to bring an enforcement action to enforce SIP provisions (*i.e.,* the state, the EPA or any parties who qualify under the citizen suit provision of section 304) have enforcement discretion that they may exercise as they deem appropriate in any given circumstances. For example, if the event that causes excess emissions is an actual malfunction that occurred despite reasonable care by the source operator to avoid malfunctions, then each of these parties may decide that no enforcement action is warranted." 80 Fed. Reg. at 33852.

Seven Criteria for Startup, Shutdown Events

The EPA identifies the following seven specific criteria as appropriate considerations for developing emission limitations in SIP provisions that apply during startup and shutdown (80 Fed. Reg. at 33912):

(1) The revision is limited to specific, narrowly defined source categories using specific control strategies (*e.g.,* cogeneration facilities burning natural gas and using selective catalytic reduction);
(2) Use of the control strategy for this source category is technically infeasible during startup or shutdown periods;

MWC NOx RACT Mass Loading Limits during Periods of Startup and Shutdown

(3) The alternative emission limitation requires that the frequency and duration of operation in startup or shutdown mode are minimized to the greatest extent practicable;
(4) As part of its justification of the SIP revision, the state analyzes the potential worst-case emissions that could occur during startup and shutdown based on the applicable alternative emission limitation;
(5) The alternative emission limitation requires that all possible steps are taken to minimize the impact of emissions during startup and shutdown on ambient air quality;
(6) The alternative emission limitation requires that, at all times, the facility is operated in a manner consistent with good practice for minimizing emissions and the source uses best efforts regarding planning, design, and operating procedures; and
(7) The alternative emission limitation requires that the owner or operator's actions during startup and shutdown periods are documented by properly signed, contemporaneous operating logs or other relevant evidence.

The Department addressed these seven criteria for emission limitations that apply during startup and shutdown for Large MWCs in the following ways:

(1) The revision is limited to specific, narrowly defined source categories using specific control strategies (*e.g.,* cogeneration facilities burning natural gas and using selective catalytic reduction)

Under COMAR 26.11.08.10D, the Department provides for alternative facility-wide, mass loading NOx emission limits averaged over a 24-hour period for startup and shutdown. Mass loading NOx emission limits shall also apply during warm-up periods when the unit is combusting fossil fuel and no municipal solid waste is being fed to the combustor. These alternative limits only apply to Large MWCs that have a capacity greater than 250 tons per day. Specifically, these alternative Startup/Shutdown/Warm-up limits apply to the Montgomery County Resource Recovery Facility (MCRRF) and Wheelabrator Baltimore, Inc. (Wheelabrator).

MCRRF and Wheelabrator utilize selective non-catalytic reduction (SNCR) for control of NOx emissions. Therefore, MDE's alternative NOx emission limitations are limited to apply to Large MWCs that have a capacity greater than 250 tons per day and use SNCR for control of NOx emissions.

(2) Use of the control strategy for this source category is technically infeasible during startup or shutdown periods

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MWC NOx RACT Mass Loading Limits during Periods of Startup and Shutdown

COMAR 26.11.08.10B and .10C require updated NOx RACT limits for Large MWCs. In part, the regulations set NOx 24-hour block average and 30-day rolling average emission rates to be met at all times except for periods of warm-up, startup and shutdown. The 24-hour block average and 30-day rolling average emission rates are steady state (normal operation mode) emission limits in parts per million by volume (ppmv), which is a measure of concentration. This concentration measurement is calculated as mass of NOx emitted / volumetric gas flow rate from the stack.

The 24-hour block average and 30-day rolling average emission rates for Large MWCs are defined as a value of NO_x emissions in ppmv, corrected to 7 percent oxygen. Therefore, the 24-hour block average and 30-day rolling average emission rates are mathematically adjusted so that the volumetric gas flow rate from the stack is corrected to 7 percent oxygen.

Concentration-based emission limits are not practical during warm-up, startup and shutdown because it is technically infeasible for Large MWCs to comply with the emission rates due to the "7 percent oxygen correction factor" that is required to be applied to the NOx 24-hour block average and 30-day rolling average emission rates. During periods of warm-up, startup and shutdown, the volumetric gas flow rate from the stack is transient, as adjustments are made to the amount of air introduced into the furnace. The mathematical oxygen correction would result in an artificially high NOx "concentration reading", even though the amount (mass) of actual NOx emissions would remain unchanged during warm-up, startup or shutdown. Therefore, it is necessary to set alternative NOx emission limits based on mass of NOx emitted during periods of warm-up, startup and shutdown (transient periods).

(3) The alternative emission limitation requires that the frequency and duration of operation in startup or shutdown mode are minimized to the greatest extent practicable

COMAR 26.11.08.01B(60)(c) defines "Startup" for a Large MWC as commencing when the unit begins the continuous burning of municipal solid waste and continuing for a period of time not to exceed three hours; but does not include any warm-up period when the particular unit is combusting fossil fuel or other non-municipal solid waste fuel, and no municipal solid waste is being fed to the combustor.

Continuous burning begins once municipal solid waste is fed to the combustor. Once municipal solid waste is being fed to the combustor, the MWC operates continuously until a shutdown is initiated.

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MWC NOx RACT Mass Loading Limits during Periods of Startup and Shutdown

COMAR 26.11.08.01B(54)(e) defines "Shutdown" for the MCRRF as commencing thirty minutes after the chute to the loading hopper of the combustion train is closed and ending no later than three hours thereafter.

COMAR 26.11.08.01B(54)(f) defines "Shutdown" for the Wheelabrator facility as commencing thirty minutes after municipal solid waste feed to the loading hopper has ceased and ending no later than three hours thereafter.

By definition the duration of startup and shutdown procedures for a Large MWC are not to exceed three hours per occurrence, which minimizes the duration of the startup or shutdown to the greatest extent practicable. The alternative 24-hour mass emission limits established by COMAR 26.11.08.10D, apply during these times.

COMAR 26.11.08.01B(63) defines "Warm-up period" as a period of time that commences when a unit at a Large MWC is combusting fossil fuel or other non-municipal solid waste fuel, and no municipal solid waste is being fed to the combustor. Warm-up period for a Large MWC ends for a unit when municipal solid waste is being fed to the combustor. Facility-wide (Montgomery County Resource Recovery Facility) or unit-specific (Wheelabrator Baltimore, Inc.) mass loading NOx emission limits apply during periods of warm-up.

(4) As part of its justification of the SIP revision, the state analyzes the potential worst-case emissions that could occur during startup and shutdown based on the applicable alternative emission limitation

Under COMAR 26.11.08.10D, facility-wide, mass loading NOx emission limits are averaged over a 24-hour period to determine the NOx load to the ambient atmosphere on days where there is a startup or shutdown event. Mass loading NOx emission limits shall also apply during warm-up periods when the unit is combusting fossil fuel and no municipal solid waste is being fed to the combustor. The mass loading limits include emissions during the warm-up, startup or shutdown. In addition, on days where the unit experiences startup or shutdown, the concentration-based 24-hour block average emission rate in COMAR 26.11.08.10B will also apply for the 24-hour period after startup or the 24-hour period before shutdown, as applicable.

Mass NOx emission limits take into account the design flue gas flow rate and represent the worst case actual NOx emissions that could occur during periods of warm-up, startup and shutdown. These mass NOx emission limits, applicable to each Large MWC, provide equivalent

MWC NOx RACT Mass Loading Limits during Periods of Startup and Shutdown

stringency to the concentration limits that apply at all other times. The 24-hour block average NOx emissions rates of COMAR 26.11.08.10B are part of the calculation used to derive the mass NOx emission limits of COMAR 26.11.08.10D. Mass emission limit calculations are derived utilizing 40 CFR 60.58b(h)(2) of subpart Eb (Concentration correction to 7 percent oxygen) or 40 CFR 60.45 (Conversion procedures to convert CEM data into applicable standards). EPA Method 19 may also be utilized to determine NOx emission rates based upon oxygen concentrations. Facility average flue gas flow rates are also utilized into the calculations. The calculation methodology for the mass emission limits is based upon the existing Prevention of Significant Deterioration (PSD) Approval for each affected facility. Mass based emission calculations for each affected Large MWC are detailed below.

Wheelabrator Baltimore, Inc.

Mass based emission calculations for Wheelabrator utilize the facility average flue gas flow (106,336 dscf/min) and O2 (10.7%) values from the facility's 2017 stack test and the 150 ppmv NOx 24-hour block average emission rate from COMAR 26.11.08.10B.

150 ppm7% x (20.9-10.7)/13.9) x 1.194E-7 x 106,336 dscf/min x 60 min/hour x 3 boilers
= 252 lbs/hour

EPA Method 19-NOx ppm to lbs/dscf Conversion Factor:
1.194 E-7 = 46 lbs/lb-mole /385.3 dscf lb-mole/1,000,000

Montgomery County Resource Recovery Facility

Mass based emission calculations for Montgomery County Resource Recovery Facility utilize the facility average flue gas flow (91,204 dscf/min) and O2 (8.1%) values as provided by the facility based upon their Prevention of Significant Deterioration (PSD) Approval and the 140 ppmv NOx 24-hour block average emission rate from COMAR 26.11.08.10B.

$$\frac{46.01\ (\text{lb/lb-mol})*(20.9-8.1)/(20.9-7.0)*140.00(\text{ppmdv})*91{,}204\ (\text{dscfm})*(1800/2250)*60(\text{m/h})*3\ \text{Boiler Units}}{3.853\text{E}{+}08\ (\text{ft3/lb-mol})}$$

= 202 lbs/hr

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MWC NOx RACT Mass Loading Limits during Periods of Startup and Shutdown

In addition, during periods of warm-up the Montgomery County Resource Recovery Facility shall meet a facility wide NOx emission limit of 202 lbs/hr timed average mass loading averaged over the hours operated in warm-up period and the Wheelabrator Baltimore, Inc. facility shall meet a unit specific NOx emission limit of 84 lbs/hr timed average mass loading averaged over the hours operated in warm-up period.

(5) The alternative emission limitation requires that all possible steps are taken to minimize the impact of emissions during startup and shutdown on ambient air quality

The specific steps that each affected facility takes to operate and minimize the impact of emissions during warm-up, startup and shutdown are listed in Operating Procedures for Large MWCs, as provided by the facility.

Additionally, under COMAR 26.11.08.10A and G, the Large MWCs are subject to the following provisions. These provisions will apply at all times, including periods of warm-up, startup and shutdown, and will minimize the impact of emissions on ambient air quality:

A. The owner and operator of a Large MWC shall minimize NOx emissions by operating and optimizing the use of all installed pollution control technology and combustion controls consistent with the technological limitations, manufacturers' specifications, good engineering and maintenance practices, and good air pollution control practices for minimizing emissions (as defined in 40 CFR §60.11(d)) for such equipment and the unit at all times the unit is in operation, including periods of startup, shutdown, and warm-up.

G. Not later than 45 days after the effective date of this Regulation, the owner or operator of a Large MWC shall submit a plan to the Department and EPA for approval that demonstrates how the Large MWC will operate installed pollution control technology and combustion controls to meet the requirements of §A of this Regulation. The plan shall summarize the data that will be collected to demonstrate compliance with §A of this Regulation. The plan shall cover all modes of operation, including but not limited to normal operations, startup, shutdown, and warm-up.

Compliance for Large MWCs will be dependent upon the facilities operating their units as specified in the approved plans during all modes of operation, including but not limited to normal operations, warm-up, startup, and shutdown.

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MWC NOx RACT Mass Loading Limits during Periods of Startup and Shutdown

(6) The alternative emission limitation requires that, at all times, the facility is operated in a manner consistent with good practice for minimizing emissions and the source uses best efforts regarding planning, design, and operating procedures

Under COMAR 26.11.08.10A and G, Large MWCs are subject to the following provisions. These provisions will apply at all times, including periods of warm-up, startup and shutdown, and will minimize the impact of emissions on ambient air quality:

Under COMAR 26.11.08.10A, the following provision applies:

A. The owner and operator of a Large MWC shall minimize NO_x emissions by operating and optimizing the use of all installed pollution control technology and combustion controls consistent with the technological limitations, manufacturers' specifications, good engineering and maintenance practices, and good air pollution control practices for minimizing emissions (as defined in 40 CFR §60.11(d)) for such equipment and the unit at all times the unit is in operation, including periods of startup, shutdown, and warm-up.

Under COMAR 26.11.08.10G, the following provision applies:

G. Not later than 45 days after the effective date of this regulation, the owner or operator of a Large MWC shall submit a plan to the Department and EPA for approval that demonstrates how the Large MWC will operate installed pollution control technology and combustion controls to meet the requirements of §A of this Regulation. The plan shall summarize the data that will be collected to demonstrate compliance with §A of this Regulation. The plan shall cover all modes of operation, including but not limited to normal operations, startup, shutdown, and warm-up.

Compliance for Large MWCs will be dependent upon the facilities operating their units as specified in the approved plans during all modes of operation, including but not limited to normal operations, warm-up, startup, and shutdown. The MWC facility will provide quarterly reports detailing that the emission limitations have been met.

(7) The alternative emission limitation requires that the owner or operator's actions during startup and shutdown periods are documented by properly signed, contemporaneous operating logs or other relevant evidence

Under COMAR 26.11.08.10H, the following provisions apply:

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MWC NOx RACT Mass Loading Limits during Periods of Startup and Shutdown

Beginning July 1, 2019, the owner or operator of a Large MWC shall submit a quarterly report to the Department containing:
(1) Data, information, and calculations which demonstrate compliance with the NOx 24-hour block average emission rate as required in §B of this Regulation;
(2) Data, information, and calculations, including NOx continuous emission monitoring data and stack flow data, which demonstrate compliance with the startup, shutdown, and warm-up mass NOx emission limits as required in §D of this Regulation;
(3) Flagging of periods of startup, shutdown, and warm-up and exceedances of emission rates;
(4) NOx continuous emission monitoring data and total urea flow rate to the boiler averaged over a 1-hour period, in a Microsoft Excel format; and
(5) Documented actions taken during periods of startup and shutdown in signed, contemporaneous operating logs.

Under COMAR 26.11.08.10I, the following provision applies:

Beginning July 1, 2020, the quarterly report to be submitted pursuant to §H of this Regulation shall also include data, information, and calculations which demonstrate compliance with the NOx 30-day rolling average emission rate as required in §C of this Regulation.

Under COMAR 26.11.08.10L, the following provision applies:

L. Compliance with the NOx mass loading emission limitation for periods of startup and shutdown in §D(1) of this Regulation shall be demonstrated by calculating the 24-hr average of all hourly average NOx emission concentrations from continuous emission monitoring systems, utilizing stack flow rates derived from flow monitors, for all the hours during the 3-hour startup or shutdown period and the remaining 21 hours of the 24-hour period.

Compliance with the NOx mass loading emission limitations for warm-up periods in §D(5) of this regulation shall be demonstrated by calculating the average of all hourly average NOx emission concentrations during the warm-up period from continuous emission monitoring systems, utilizing stack flow rates derived from flow monitors, for all the hours during the warm-up period.

Under COMAR 26.11.08.10M, the Department is proposing the following provision:

M. Compliance with the NOx mass loading emission limitation for periods of startup and shutdown in §D(2) of this Regulation shall be demonstrated by calculating the 24-hr average of

MWC NOx RACT Mass Loading Limits during Periods of Startup and Shutdown

all hourly average NOx emission concentrations from continuous emission monitoring systems, utilizing the applicable Prevention of Significant Deterioration calculation methodology, for all the hours during the 3-hour startup or shutdown period and the remaining 21 hours of the 24-hour period.

Compliance with the NOx mass loading emission limitations for warm-up periods in §D(6) of this regulation shall be demonstrated by calculating the average of all hourly average NOx emission concentrations during the warm-up period from continuous emission monitoring systems, utilizing the applicable Prevention of Significant Deterioration calculation methodology, for all the hours during the warm-up period.

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MWC NOx RACT Mass Loading Limits during Periods of Startup and Shutdown

Operating Procedures for Large MWCs

1800 Washington Boulevard | Baltimore, MD 21230 | 1-800-633-6101 | 410-537-3000 | TTY Users 1-800-735-2258
www.mde.maryland.gov

WHEELABRATOR BALITMORE NOX RACT COMPLIANCE PLAN

Revision 0

DATE: JANUARY 22, 2019

1) Introduction

This NOx RACT compliance plan has been developed to meet the NOx RACT requirements for Large Municipal Waste Combustors (MWC) under COMAR 26.11.08.10 that became effective December 6, 2018. The plan provides information and procedures that demonstrate how Wheelabrator Baltimore will operate the installed NOx and combustion controls and what data will be collected to ensure compliance with the NOx emission limits under this regulation. The plan addresses all modes of operation including normal operations, startup, and shutdown. In general, the NOx emission limits under COMAR 26.11.08.10 will be achieved by operating and optimizing NOx emission and combustion controls consistent with the technological limitations, manufacturers' specifications, good engineering and maintenance practices, and good air pollution control practices for minimizing emissions (as defined in 40 CFR §60.11(d)). NOx emissions will be continuously monitored using the existing MDE approved continuous emission monitoring systems (CEMS) operated and maintained in accordance with COMAR 26.11.01.11.

2) NOx RACT Emission Limits

A summary of NOx RACT limits is as follows:

Normal Operation NOx Limits - During normal operation the NOx limit applicable to each MWC is 150 ppm at 7%O_2 /24-hour daily block average. By May 1, 2020 each MWC unit will comply with an additional NOx limit of 145 ppm 7%O_2/30 day rolling average. Both these limits do not apply during startups and shutdowns however, emissions during malfunctions are included in the averages.

Note: The Subpart Cb 24 hour block average limit of 205 ppm7%O_2 still applies and does not include startups shutdowns or malfunctions. In addition the facility PSD limit of 298 lbs/hour/8 hour block average continues to apply.

Facility Startup and Shutdown Limit - During MWC unit startups and shutdowns, the facility will comply with the facility wide NO_x emission limit of 252 lbs/hour averaged over a 24-hour period including emissions from the MWC unit startup and shutdown period. Startup and shutdown periods are limited to 3 hour in duration. In addition:

- The 150 ppm/24 hour daily (midnight to midnight) and 145 ppm 30 day rolling average limits do not apply to the MWC unit that had started up or been shut down during that 24 hour period.
- For the MWC unit that went through a startup, the 150 ppm/24-hour average limit applies for the next contiguous 24-hour period after startup is completed. Example: If startup completed at 06:00, the contiguous 24 hour period after startup completed is 07:00 to 06:00 the next day.
- For a MWC unit that went through a shutdown, the 150 ppm 24-hour average limit applies for the 24-hour contiguous period prior to the commencement of shutdown. Example: if shutdown was started at 20:00 the prior 24 contiguous period is the 19:00 hour (last normal operating hour) before shutdown initiated back to 20:00 the previous day.

Note: Prior to a scheduled shutdown, NOx data will be reviewed to ensure the NOx average for the 24 contiguous hours prior to commencing the shutdown is below the 150 ppm limit. If not, the shutdown should not commence until the prior 24 hour average is below the limit.

Determining Compliance During MWC Unit Startup and Shutdown Periods-Compliance with the 252 lbs/hour facility NO_x limit during startup and shutdown of any MWC unit is demonstrated by calculating the 24-hour average of all hourly NO_x emissions rates (lbs/hour) utilizing the Prevention of Significant Deterioration (PSD) calculation methodology. Hourly emissions rates include hours during the 3-hour

startup or shutdown period and the remaining 21 hours of the 24-hour period the MWC unit was operating prior to shut down or after startup.

Note: It is understood the RACT regulation will be revised in the future to include the periods when only natural gas is being fired prior to startup (continuous burning) and during a shutdown. The emissions from natural gas only firing periods will be included in determining compliance with the 252 lbs/hour facility limit during startup and shutdown periods.

3) Definitions

The following definitions apply for purposes of demonstrating compliance with NOx RACT limits:

Startup -Start up begins with the continuous burning of municipal solid waste (MSW) and continues for a period of time not to exceed 3 hours, but does not include any warm-up period when the particular unit is combusting natural gas or other non-municipal solid waste fuel, and no MSW is being fed to the combustor.

Continuous Burning - Continuous burning is the continuous, semi-continuous, or batch feeding of MSW for purposes of waste disposal, energy production, or providing heat to the combustion system in preparation for waste disposal or energy production and begins when MSW is fed to the combustor. (Start of ram feeders to push MSW from the feed hopper to the first grate zone)

Shutdown - Shutdown commences 30 minutes after MSW to the loading hopper has ceased and ends no later than 3 hours thereafter.

30 Day Rolling Average - The 30-day rolling average emission rate is calculated by summing the total hourly ppm7%O_2 NOx concentrations for the current operating day and the previous 29 operating days, excluding periods of startup and shutdown; and dividing the total hourly ppm7%O_2 value by the number of hours in the 30 day rolling average.

4) NOx Control Description

NOx emissions are controlled using a combination of good combustion practice (staged combustion) and a selective non-catalytic reduction (SNCR) NOx control system supplied by Wheelabrator Air Pollution Control under a licensing agreement with Nalco Fuel Tech (Fuel Tech). The Fuel Tech system uses a 50% by weight urea solution as the NOx reducing agent. Dilution water is added to the urea solution as a carrier to ensure urea is widely distributed in the furnace in the proper temperature zone. When injected in the optimum temperature range urea decomposes to the reducing agent ammonia which reacts with NOx (as NO) forming nitrogen (N_2) and water (H_2O).

Fuel Tech SNCR System Description:

The Fuel Tech SNCR system consists of four different modules:

- Heated insulated storage tank (1)
- Recirculation Module (1)
- Metering Modules (3)
- Distribution Modules (6)

Recirculation Module (RM) - The RM continuously recirculates the urea solution from the insulated storage tank to three Metering Modules located on the 5th floor and back to the storage tank. The RM is equipped with an electric inline heater to maintain urea solution at a temperature greater than 95°F. Insulated heat

traced lines from the RM to and from the Metering Modules to storage tank maintain urea solution at the required temperature. The RM has redundant pumps to maintain the recirculation flow to Metering Modules should a pump fail or need maintenance.

Metering Modules (MM) - There is a dedicated MM for each MWC/boiler train located near each boiler on the 5th floor. The MM controls the flow of urea and dilution water and is where urea and dilution water are mixed and pumped to the Distribution Modules. Urea flow is automatically modulated by the continuous NOx signal from the CEMS to maintain the required NOx set point. Dilution water is used as the urea carrier. Dilution water flow rate is determined by furnace temperature, number of injectors in service, urea utilization rate and other factors to insure adequate mixing and dispersion of urea into furnace in the optimum temperature range. More dilution water makes larger droplets that will carry further into the furnace before evaporating and releasing the ammonia. Additionally if the furnace temperature is too hot larger droplets carry to a cooler furnace region where it takes longer for water to evaporate preventing premature release of ammonia and subsequent high temperature oxidation of ammonia to NOx. A pair of dedicated pumps (2 for urea and 2 for dilution water) provide redundancy to ensure urea and dilution water flow is maintained in the case of a pump failure. A Programmable Logic Controller (PLC) on each MM control the urea and dilution water pumps and monitor urea and dilution water flow rates. The PLCs are connected to the control room Distributed Control System (DCS) so plant operators have full control of each metering module. The urea flow rate signals are also sent to the CEM DAS for recording and MDE reporting purposes.

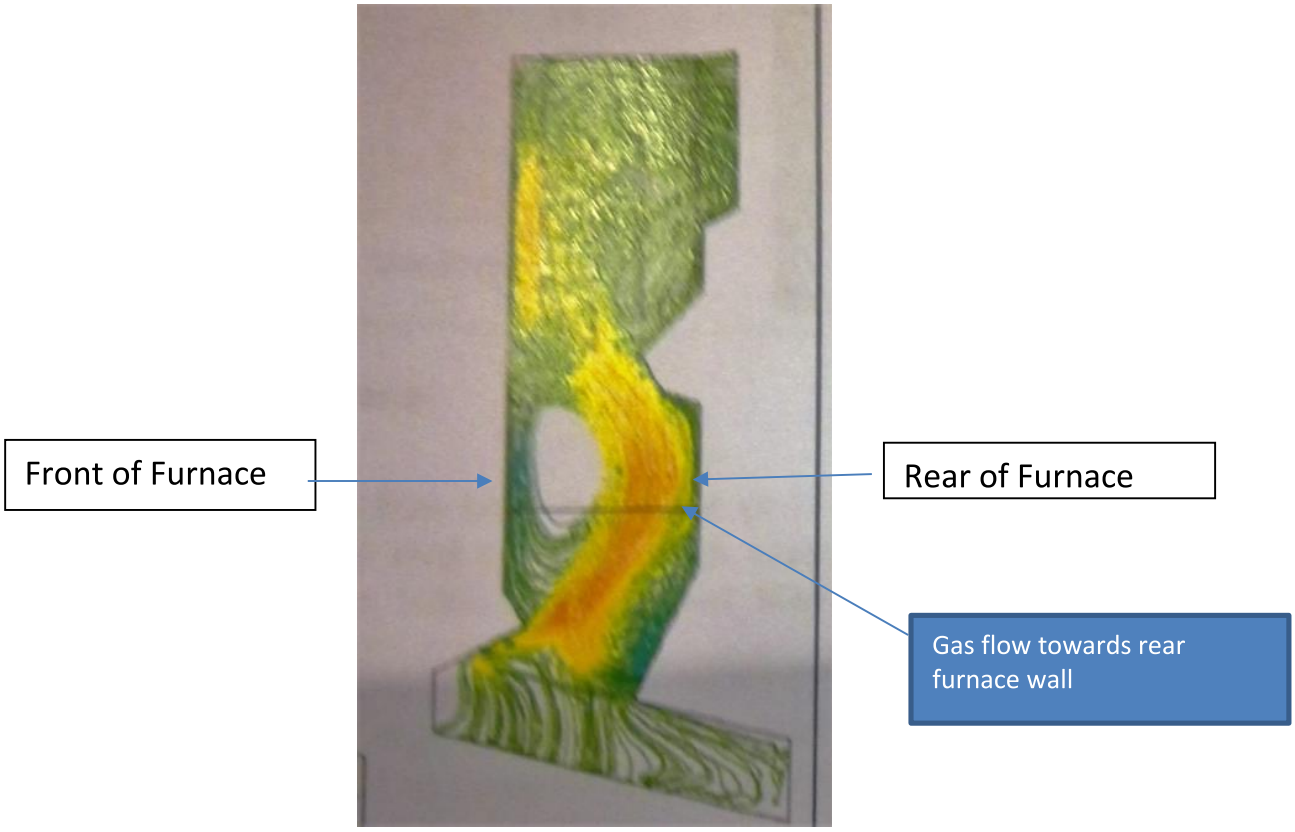
Distribution Panels or Modules (DM) - DMs control the flow of the urea/water mixture to the individual injectors located in the furnace walls of each MWC/boiler. There are 2 DMs for each MWC unit and each DM controls the urea/dilution water mixture flow and atomizing air flow to 4 injectors. Urea/dilution water flow and atomizing air rates can be separately controlled to each injector to ensure optimum spray pattern and furnace coverage is maintained. Varying atomizing air pressure will change the urea/dilution water droplet size. If the furnace it too hot, less atomizing air makes larger droplets that will carry into higher cooler furnace elevations before releasing the ammonia preventing high temperature oxidation of ammonia to NOx. Additionally, total flow of urea/dilution water mixture to each injector is controlled by flow meters through individual flow meters. In general, urea/dilution water flow is divided equally to all injectors in service. Nominal atomizing air and urea/dilution water pressures for injectors are as follows: atomizing air pressure 40-55 psig and urea/dilution water pressure 75 to 76 psig.

SNCR System Performance Factors:
Temperature is critical for SNCR performance since NOx is only reduced effectively within a narrow range of 1800°F to 2100°F. Equally important, the urea causes ammonia slip emissions if injected at temperatures below 1600°F and forms more NOx than it reduces at temperatures above 2400°F as mentioned previously. Furnace temperature profiles may change with boiler load, fuel composition and degree of furnace fouling or slagging, but NOx control can be maintained by making combustion control and/or SNCR system to ensure NOx limits are achieved. SNCR system optimization takes three factors into consideration:

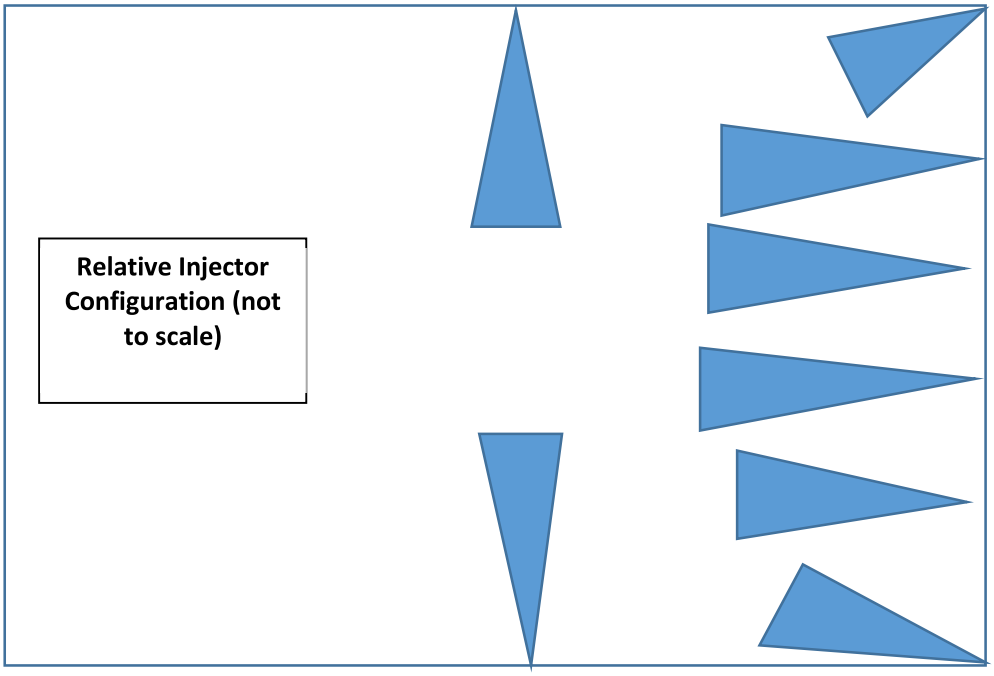
- Temperature: Injecting the urea reagent in the optimum SNCR operating range of 1800-2100 °F.
- Mixing: Maximizing furnace spatial overage within optimum temperature range to insure maximum contact between the urea/ammonia and NOx.
- Time: Providing enough residence time at the optimal temperature range after urea/flue gas mixing to achieve reaction-evaporation of carrier water, decomposition of urea to ammonia and ammonia/NOx reducing reaction.

Based on SNCR optimization testing conducted during development of the limit, it was found that urea injectors are best located on the 4th floor elevation as this elevation was within the middle of optimum SNCR temperature range. Furthermore, the most effective injector locations were determined to be on the side walls toward the rear of the furnace, rear furnace corner ports and on the furnace rear wall as was predicted with the CFD modeling conducted for the design of the front wall water wall platens as shown below. As more operational experience is gained during long term performance achieving the 150 ppm limit and subsequent 145 ppm limit, modifications to the basic injector configurations and locations may be made.

Furnace Gas Flow Pattern



Relative Injector Locations



The final SNCR system modification for optimizing the SNCR system was the installation of larger injectors (3/4 inch OD) equipped that can be equipped with variable geometry tips to provide different spray angles and patterns in the furnace. The larger injectors required rolling furnace tube walls at the desired locations to accommodate the wider injector body. The larger injectors allow for higher water flow (up to 1.4 gpm/injector verses 0.75 gpm for small injectors) that can be put through the injector providing for larger droplet size when need for better penetration of urea into the furnace to improve dispersion/mixing and/or for carrying urea to cooler furnace regions should the furnace temperature increase. The injector tip angles can also be changed to spray up or down as well as produce a wider or narrower spray to help track furnace temperature changes and keep urea injection close to the optimum temperature range, and to optimize furnace coverage.

5) Combustion Control for Minimizing NOx Emissions

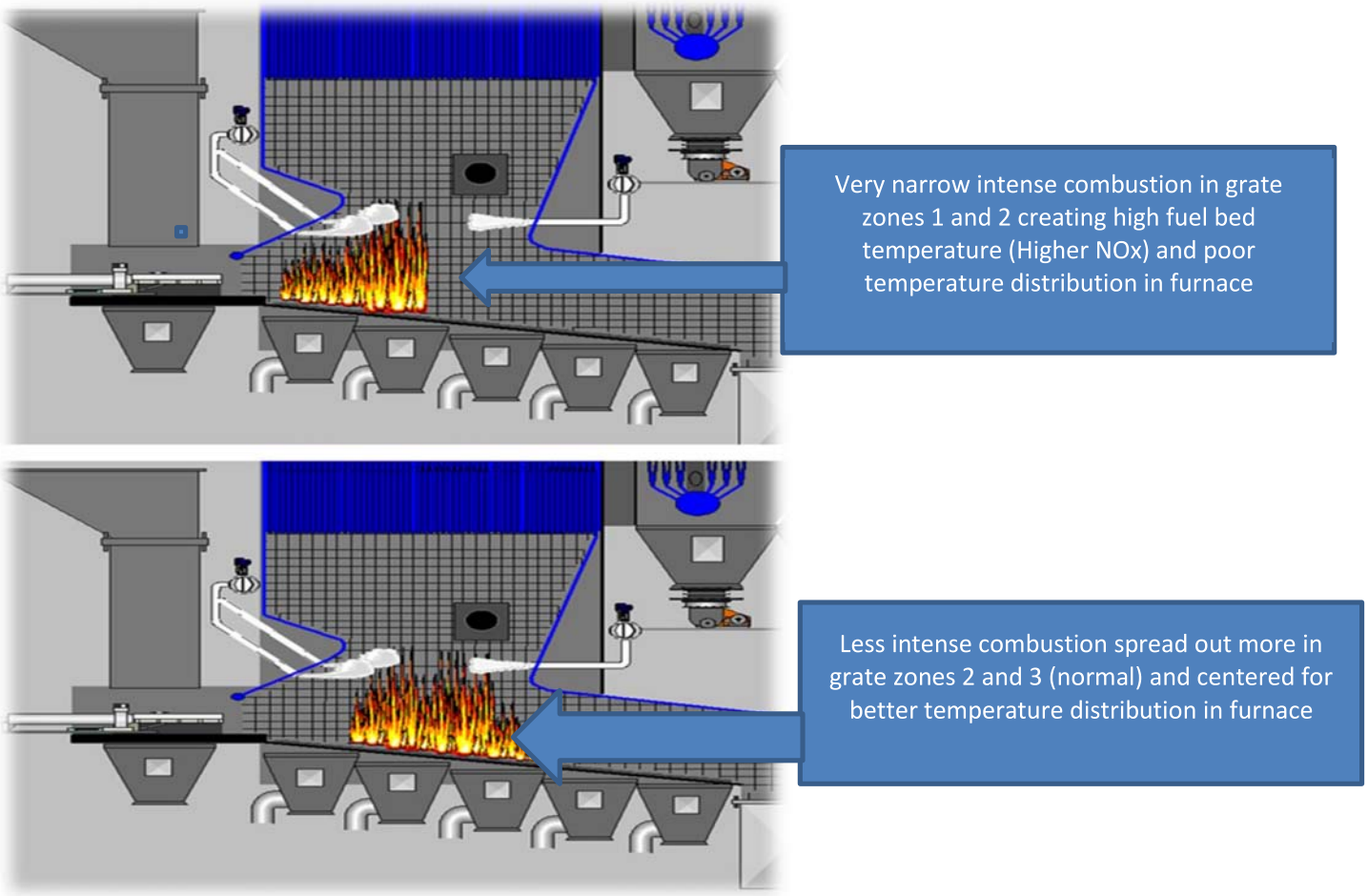
NOx Formation - NOx formation in MWS combustion is primarily attributed to two (2) mechanisms: 1) Thermal NOx and 2) Fuel NOx. Thermal NOx is formed at relatively high temperatures (> 2400°F) by oxidation of nitrogen (N_2) in the combustion. Fuel NOx is formed at relatively lower temperatures (below 2,000°F) by the oxidation of nitrogen contained in the MSW. Local temperatures and O_2 concentrations in the primary combustion zone (on the grates) significantly influence the conversion of fuel bound nitrogen. At low excess air (O_2 levels) and low temperatures, fuel hydrogen and carbon oxidation is favored over fuel nitrogen oxidation to NOx while and preventing thermal NOx formation. Maintaining low excess air levels and lower temperature on the grates in the primary combustion zone is accomplished by low excess air-staged combustion as explained below.

Combustion Controls to Minimize NOx Formation - The furnace and combustion system on the MWC units are designed for low excess air-stage combustion. In staged combustion, combustion air is staged or split approximately 60%/40% between primary under grate combustion air and secondary combustion air above the grates respectively. Staging combustion air maintains a low excess air level on the combustion grates reducing grate MSW combustion intensity and keeping local fuel bed temperature lower to minimize fuel

NOx formation and local hotspots that could make Thermal NOx. The high velocity secondary combustion air above the grates completes combustion by ensuring good mixing of secondary air with good turbulence to minimizing CO and ensuring complete combustion of unburned volatile gases and carbon released from the MSW fuel on the combustion grates. The Boiler Master is the primary combustion controller and automatically varies MSW feed rate (ram feeder) and primary combustion air flow rate to maintain the steam set point. Secondary air is also automatically varied to maintain the proper primary to secondary air ratio or split. Maintaining proper secondary air levels is also key to help maintain middle furnace temperatures within optimum range at the SNCR injector location.

Primary Combustion Grate Zones - The combustion grate is divided into five (5) separate independently controlled grate zones. Primary air supply and grate zone speed (determines how fast MSW fuel is pushed through the furnace) is controlled independently to maintain the desired low O2 levels and fuel bed combustion level/intensity or temperature in each grate zone while ensuring MSW is completely combusted and ash burnout complete before ash is discharged at rear of furnace. Maintaining low excess air levels and low fuel bed combustion temperatures in each grate zone minimize NOx formation as well as helps ensure more even temperature distribution in the furnace at the SNCR injector location as the figures below illustrate.

Operator Control - As in all automated control systems, operators are watching combustion control parameters and visually looking at the fires on combustion grates via cameras. Operators will make adjustments as necessary to various controls if fuel conditions changes (wet fuel for instance) to maintain good combustion conditions.



6) **Maintaining Compliance with NOx RACT Limits during Normal Operation**

General - Primary SNCR system control is automatically performed by PLCs located on the SNCR system Metering Modules. These PLCs receive continuous NOx signals (ppm7%O2) from the CEMs and automatically adjust urea flow rate to maintain the required NOx control set point. As mentioned the PLCs are connected to the Distributed Control System that allow the plant operator to make changes to combustion and SNCR system operations during abnormal or upset conditions. NOx control set points, urea flows and dilution water flows can be adjusted directly by the plant operator. SNCR system information including NOx levels, urea flow rates, and dilution water flow rated are displayed on the control room screens for each MWC unit. The CEM system data acquisition display screen is also in the control room providing the plant operator real time information on NOx limit compliance status of each unit.

Response to Upset Conditions - During combustion upsets or abnormal variations in steam flow, the SNCR control may be put in manual to allow operators to adjust urea feed rate manually to prevent over feed conditions that could lead to excess ammonia slip. The system would remain in manual until normal combustion conditions are restored. Dilution water flow to the injectors can also be varied by the plant operator in response to high urea feed rates and increasing NOx concentrations above set point. Such conditions are usually the result of hotter combustion conditions in the furnace when higher BTU fuel is temporarily encountered. The high temperature actually causes oxidation of the urea to NOx contributing to higher NOx emissions despite an increase in urea flow. Increasing dilution water flow to injectors allows urea to be carried into a cooler section of the furnace preventing oxidation and allowing urea to react and reduce NOx concentrations.

NO_X Control Settings - The NO_X automatic control set point will be maintained at 145 ppm on all three boilers, unless short term adjustments are required to control an upset condition. At the beginning of each shift the Plant Operator ensures that automatic control set points on all three SNCR systems are at the required set point.

Metering Module and Distribution Module Operations:

- Six (6) to eight (8) urea injectors or lances per boiler will be in service during full load MWC/boiler operation to ensure good urea distribution consistent with each boiler's operating conditions.

- Metering Module dilution water flows will normally be set in the range of 6-12 GPM, respectively. Pressure and water flows to each boiler will vary based on boiler operating conditions including boiler load (steam flow), fuel BTU or heating value, and degree of furnace fouling, which influences the optimum SNCR temperature zone in the furnace. Periodic review of optimized SNCR system condition for each MWC/boiler SNCR will be conducted based on evaluation of urea usage over time.

- Distribution Module atomizing air and combined urea and dilution water flow pressures to each injector will be maintained nominally at 40-55 psig and 50-75 psig, respectively. These pressures will vary depending on combustion conditions and ongoing optimization efforts to minimize urea usage and avoid excessive ammonia slip conditions.

- The Metering Modules and Distribution Modules will be inspected once per shift for proper operation by the assistant plant operator (APO).

- The duplex strainers to each Metering Module will be swapped and cleaned once per week by the weekend dayshift APO as a preventative measure to ensure adequate dilution water/chemical flow is maintained to Distribution Modules and injectors.

- Metering Modules and piping to all Distribution Modules will be flushed with dilute acid (safe acid) once per week by the dayshift APO to ensure ability to maintain full urea/dilution water flow rates to injectors.

- The SNCR system dilution water softener will be inspected for proper operation once per shift by the APO. This includes replenishing salt in the brine tank. Proper softening of dilution water is required to prevent scaling and plugging of piping supplying urea/water mix to Distribution Modules and prevent fouling of injectors.

- The urea flow meters on metering modules are calibrated ("draw down test") once per week by the nightshift APO to verify accuracy of urea flow rates. Maintaining accuracy of urea flow rates is necessary for evaluating SNCR system performance as the overall goal is to achieve limits with minimum amount of urea to ensure potential for ammonia slip formation is minimized.

- The Recirculation Module will be inspected every shift by the Utility Operator (UO) to ensure pumps are in good condition, the inline heater is operational, and that the urea solution is being maintained at proper temperature (> 95°F).

Response to Invalid CEM Data Periods - CEM downtime for maintenance (preventative and emergency) or sudden CEM malfunction such as sample pump failure will interrupt the NOx control signal to the SNCR metering module disrupting automatic NOx control and resulting in invalid CEM data being recorded by the CEM data acquisition system (DAS). During CEM downtime/invalid data periods the SNCR system is placed in manual control and urea flow will be maintained at the flow rate from most recent hour in which valid CEM data was captured and NOx emission were below the limit. The SNCR system will be placed back in automatic control when CEM is returned to service. For planned CEM downtime for preventive maintenance and quality assurance activities (quarterly audits), the plant operator maintains communication with the CEM service contractor and/or E&I technician working on the CEM to place SNCR in manual in advance of planned activity and to return SNCR system to automatic control following completion.

NO_X Upset Conditions and Corrective Actions - Most of the time the automatic controls should maintain hourly NOx concentrations below the limit with minimal operator intervention. However, any time a single hourly average NO_X emissions exceeds 150 ppm in the current 24-hour compliance period will be considered an upset condition requiring the plant operator to immediately investigate and take corrective action to ensure the 24-hour block average and 30 day rolling average limits are achieved. Corrective actions may include but not be limited to the following:

- If SNCR control response appears slow and not responding to increase urea flow rate as NOx emission continue to increase, the SNCR control will be put into manual and urea flow rate manually increased until NOx levels drop below 150 ppm for the next hourly average.

- If urea flow rate cannot be increased it then the following actions will be taken:
    - Metering module water strainer inspected and swapped and cleaned.
    - If urea flow is not restored the recirculation module will be checked for proper flow to metering modules and RM pressure adjusted or strainer cleaned as needed to restore full flow to metering modules.
    - If strainer is cleaned and urea recirculation flow rate remains low, then second recirculation pump will be put into operation to restore flow to metering modules.

- If urea feed is increased and NOx continues to increase this is indicative of increase in furnace temperature at injector location. Dilution water flow should be increased incrementally until NOx begins to drop. Once NOx drops and is steady below limit, the dilution water can be gradually returned to previous flow rate provided NOx levels remain steady.

7) Startup and Shutdown Procedures

During startups the furnace is preheated to initial temperature required for start of MSW combustion using the auxiliary natural gas burners. With the exception of the SNCR system, preheating the furnace and boiler allows emission control systems to be put into service prior to continuous MSW combustion. The SNCR system is put in service approximately 15 - 45 minutes after the start of continuous MSW combustion or whenever MSW combustion has been properly established across the first three main combustion zones. This allows furnace temperature at the SNCR injection location to be established across as much of the furnace cross sectional area as possible to ensure there is sufficient heat to evaporate dilution water and release the ammonia from urea for reaction with NOx. Waiting for higher more optimum furnace temperature conditions serves to minimize excessive ammonia slip from being released and causing visible stack plume episodes and reduces potential for impingement of unevaporated urea/dilution water mixture on furnace water wall platens or superheater.

During shutdowns emission controls remain in service until continuous refuse combustion is completed. Auxiliary gas burners will be fired as needed to maintain furnace temperature until MSW combustion is completed and only ash remains on the grates. A summary of startup and shutdown procedures is provided below.

Startup Procedure

1. Auxiliary gas burner is lit to begin preheating of furnace and boiler. Auxiliary burner firing rate is ramped up gradually in accordance with boiler startup curve to ensure slow heating and expansion of furnace and boiler components.
2. After furnace/boiler have reached warmup temperature, the ram feeder and combustion grates are turned off in advance of dropping MSW into the feed hopper.
3. Crane Operator will begin feeding MSW into feed hopper to establish air seal on boiler.
4. When the feed hopper is full and furnace air seal established, the furnace pressure will drop rapidly and the ID fan is place in automatic control with a set point of -0.25 inches H_2O to maintain proper furnace draft.
5. The Secondary Air Fan (SAF) is then started with fan damper at -5%.
6. The SAF header pressure is placed into automatic control at 14 inches H_2O. *Note: When ID Fan control is in automatic, boiler temperature and pressure are maintained by changing SAF header pressure and or gas burner set point.*
7. Carbon system and SDA are placed into service.
8. Ram feeders and grates are started, MSW is pushed from the feed hopper onto 1st grate zone and continuous MSW combustion will start. This will begin the 3 hour startup period.
9. Ram feeder and grates speeds are adjusted as needed to establish good combustion across the first 3 grate zones and SNCR system is placed into service.
10. Steam flow set point is gradually increased until full load set point achieved. Grate speeds and combustion air settings are adjusted as needed to maintain steady combustion. Auxiliary gas burner will be shut off when combustion has stabilized. In general, shutting off of auxiliary burner marks end of the startup period.

Shutdown Procedure

1. MSW feed to hopper is stopped. 30 minutes after MSW feeding stops is when the 3 hour shutdown period begins. Hopper will be just about empty after 30 minutes.
2. Steam flow set point is gradually reduced while grate and combustion air settings are adjusted to maintain good combustion. When feed hopper is empty the furnace air seal is lost and combustion begins to rapidly decrease. As the remaining MSW is combusted, the primary combustion air to each grate zone is shut off and grate speed is increased to 100%.
3. SNCR system will be shut off when all MSW has been combusted on the first grate zone nearest the feed hopper. As in the case of startup, furnace temperatures at this point will be not be sufficiently high or uniform enough in the furnace and this will minimize potential for excessive ammonia slip.
4. Shutdown will be considered complete (continuous combustion has stopped) when there are no visible fires on grate zones 1-3. Carbon feed system and SDA system will be shutdown at this point.

8) CEMs Data Collection to Ensure Compliance with NOx Limit

NOx emissions are continuously monitored using the existing MDE approved continuous emission monitoring systems (CEMS) operated and maintained in accordance with COMAR 26.11.01.11. An Ecochem Cemtrac3 data acquisition system (DAS) provides full data recording, calculation and reporting capabilities and will be used to produce all required MDE reports. In addition, a DAS screen in the control room provides operators up to the minute information on NOx emissions and running 24 hour and 30 day rolling averages relative to compliance with limit. Example report formats are provided on the following pages.

Daily NOx RACT Compliance Summary Report

Start	00:00 17-Jan-2019								
End	23:00 17-Jan-2019								
	Unit 1 Outlet	Unit 1 Outlet	Unit 1 Outlet	Unit 2 Outlet	Unit 2 Outlet	Unit 2 Outlet	Unit 3 Outlet	Unit 3 Outlet	Unit 3 Outlet
	STMFLW_1	UreaFlow_1	NOXRPT_1	STMFLW_2	UreaFlow_2	NOXRPT_2	STMFLW_3	UreaFlow_3	NOXRPT_3
	K#/Hr	GPH	ppm 7% O2	K#/Hr	GPH	ppm 7% O2	K#/Hr	GPH	ppm 7% O2
00:00 17-Jan-2019	192	9.5	145	191	10.5	146	192	14.1	148
01:00 17-Jan-2019	192	9.5	145	191	10.5	146	192	14.1	148
02:00 17-Jan-2019	192	9.5	145	191	10.5	146	192	14.1	148
03:00 17-Jan-2019	192	9.5	145	191	10.5	146	192	14.1	148
04:00 17-Jan-2019	192	9.5	145	191	10.5	146	192	14.1	148
05:00 17-Jan-2019	192	9.5	145	191	10.5	146	192	14.1	148
06:00 17-Jan-2019	192	9.5	145	191	10.5	146	192	14.1	148
07:00 17-Jan-2019	192	9.5	145	191	10.5	146	192	14.1	148
08:00 17-Jan-2019	192	9.5	145	191	10.5	146	192	14.1	148
09:00 17-Jan-2019	192	9.5	145	191	10.5	146	192	14.1	148
10:00 17-Jan-2019	192	9.5	145	191	10.5	146	192	14.1	148
11:00 17-Jan-2019	192	9.5	145	191	10.5	146	192	14.1	148
12:00 17-Jan-2019	192	9.5	145	191	10.5	146	192	14.1	148
13:00 17-Jan-2019	192	9.5	145	191	10.5	146	192	14.1	148
14:00 17-Jan-2019	192	9.5	145	191	10.5	146	192	14.1	148
15:00 17-Jan-2019	192	9.5	145	191	10.5	146	192	14.1	148
16:00 17-Jan-2019	192	9.5	145	191	10.5	146	192	14.1	148
17:00 17-Jan-2019	192	9.5	145	191	10.5	146	192	14.1	148
18:00 17-Jan-2019	192	9.5	145	191	10.5	146	192	14.1	148
19:00 17-Jan-2019	192	9.5	145	191	10.5	146	192	14.1	148
20:00 17-Jan-2019	192	9.5	145	191	10.5	146	192	14.1	148
21:00 17-Jan-2019	192	9.5	145	191	10.5	146	192	14.1	148
22:00 17-Jan-2019	192	9.5	145	191	10.5	146	192	14.1	148
23:00 17-Jan-2019	192	9.5	145	191	10.5	146	192	14.1	148
Valid Avg	192	9.5	145	191	10.5	146	192	14.1	148
Valid Max	192	9.5	145	191	10.5	146	192	14.1	148
Valid Min	192	9.5	145	191	10.5	146	192	14.1	148
Valid Count	24	24	24	24	24	24	24	24	24

Monthly NOx RACT Summary Report

Start	0:00 11/1/2019
End	23:59 11/30/2019

	Unit 1 Outlet STMFLW_1 K#/Hr	Unit 1 Outlet UreaFlow_1 GPH	Unit 1 Outlet NOXRPT_1 ppm 7% O2	Unit 2 Outlet STMFLW_2 K#/Hr	Unit 2 Outlet UreaFlow_1 GPH	Unit 2 Outlet NOXRPT_2 ppm 7% O2	Unit 3 Outlet STMFLW_3 K#/Hr	Unit 3 Outlet UreaFlow_1 GPH	Unit 3 Outlet NOXRPT_3 ppm 7% O2
00:00 01-Nov-2019	192	8.5	146	191	10.6	147	192	14.1	147
00:00 02-Nov-2019	191	8.5	146	191	10.6	147	192	14.1	147
00:00 03-Nov-2019	192	8.5	146	191	10.6	147	192	14.1	147
00:00 04-Nov-2019	191	8.5	146	191	10.6	147	192	14.1	147
00:00 05-Nov-2019	191	8.5	146	191	10.6	147	192	14.1	147
00:00 06-Nov-2019	191	8.5	146	191	10.6	147	192	14.1	147
00:00 07-Nov-2019	191	8.5	146	191	10.6	147	192	14.1	147
00:00 08-Nov-2019	191	8.5	146	191	10.6	147	192	14.1	147
00:00 09-Nov-2019	Shutdown	Shutdown	Shutdown	191	10.6	147	192	14.1	147
00:00 10-Nov-2019	Offline	Offline	Offline	191	10.6	147	192	14.1	147
00:00 11-Nov-2019	Offline	Offline	Offline	191	10.6	147	192	14.1	147
00:00 12-Nov-2019	Offline	Offline	Offline	191	10.6	147	192	14.1	147
00:00 13-Nov-2019	Startup	Startup	Startup	191	10.6	147	192	14.1	147
00:00 14-Nov-2019	192	8.5	146	191	10.6	147	192	14.1	147
00:00 15-Nov-2019	192	8.5	146	191	10.6	147	192	14.1	147
00:00 16-Nov-2019	192	8.5	146	191	10.6	147	192	14.1	147
00:00 17-Nov-2019	192	8.5	146	191	10.6	147	192	14.1	147
00:00 18-Nov-2019	192	8.5	146	191	10.6	147	192	14.1	147
00:00 19-Nov-2019	192	8.5	146	191	10.6	147	192	14.1	147
00:00 20-Nov-2019	192	8.5	146	191	10.6	147	192	14.1	147
00:00 21-Nov-2019	192	8.5	146	191	10.6	147	192	14.1	147
00:00 22-Nov-2019	192	8.5	146	191	10.6	147	192	14.1	147
00:00 23-Nov-2019	192	8.5	146	191	10.6	147	192	14.1	147
00:00 24-Nov-2019	192	8.5	146	191	10.6	147	192	14.1	147
00:00 25-Nov-2019	192	8.5	146	191	10.6	147	192	14.1	147
00:00 26-Nov-2019	192	8.5	146	191	10.6	147	192	14.1	147
00:00 27-Nov-2019	192	8.5	146	191	10.6	147	192	14.1	147
00:00 28-Nov-2019	192	8.5	146	191	10.6	147	192	14.1	147
00:00 29-Nov-2019	192	8.5	146	191	10.6	147	192	14.1	147
00:00 30-Nov-2019	192	8.5	146	191	10.6	147	192	14.1	147
		8.5							
Valid Avg	192	8.5	146	191	10.6	147	192	14.1	147
Valid Max	192	8.5	146	191	10.6	147	192	14.1	147
Valid Min	191	8.5	146	191	10.6	147	192	14.1	147
Online Days	27	27	27	30	30	30	30	30	30

Startup Begin	NOx RACT Startup Summary Report															
00:00 17-Jan-2019																
End	Facility	Unit 1 Outlet					Unit 2 Outlet					Unit 3 Outlet				
23:00 17-Jan-2019	NOx	STMFLW_1	UreaFlow1	NOXPPM_1	STKFLOW1	NOxLBS_1	STMFLW_2	UreaFlow2	NOXPPM_2	STKFLOW2	NOxLBS_2	STMFLW_3	UreaFlow3	NOXPPM_3	STKFLOW3	NOxLBS_3
	LBS/HR	K#/Hr	GPH	ppmd	DSCFM	LBS/HR	K#/Hr	GPH	ppmd	DSCFM	LBS/HR	K#/Hr	GPH	ppmd	DSCFM	LBS/HR
00:00 17-Jan-2019	159.6	25	0	40	13385	3.8	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
01:00 17-Jan-2019	169.5	45	2	80	24094	13.8	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
02:00 17-Jan-2019	183.1	75	5	95	40156	27.3	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
03:00 17-Jan-2019	221.3	150	8	114	80313	65.6	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
04:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
05:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
06:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
07:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
08:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
09:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
10:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
11:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
12:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
13:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
14:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
15:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
16:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
17:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
18:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
19:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
20:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
21:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
22:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
23:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
Average	230.3															

NOx RACT Shutdown Summary Report

Startup Begin																
00:00 17-Jan-2019																
End	Facility	Unit 1 Outlet					Unit 2 Outlet					Unit 3 Outlet				
23:00 17-Jan-2019	NOx	STMFLW_1	UreaFlow1	NOXPPM_1	STKFLOW1	NOxLBS_1	STMFLW_2	UreaFlow2	NOXPPM_2	STKFLOW2	NOxLBS_2	STMFLW_3	UreaFlow3	NOXPPM_3	STKFLOW3	NOxLBS_3
	LBS/HR	K#/Hr	GPH	ppmd	DSCFM	LBS/HR	K#/Hr	GPH	ppmd	DSCFM	LBS/HR	K#/Hr	GPH	ppmd	DSCFM	LBS/HR
00:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
01:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
02:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
03:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
04:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
05:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
06:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
07:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
08:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
09:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
10:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
11:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
12:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
13:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
14:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
15:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
16:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
17:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
18:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
19:00 17-Jan-2019	239.7	192	9.5	114	102800	84.0	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
20:00 17-Jan-2019	222.0	192	8	90	102800	66.3	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
21:00 17-Jan-2019	175.9	75	5	70	40156	20.1	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
22:00 17-Jan-2019	163.5	45	2	45	24094	7.8	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
23:00 17-Jan-2019	157.6	25	0	20	13385	1.9	191	10.5	115	95516	78.7	192	14.1	112	96016	77.0
Average	229.7															

30 Day-NOx RACT Summary Report

Start	11/1/2020								
End	11/30/2020								
	Unit 1 Outlet	Unit 1 Outlet	Unit 1 Outlet	Unit 2 Outlet	Unit 2 Outlet	Unit 2 Outlet	Unit 3 Outlet	Unit 3 Outlet	Unit 3 Outlet
	STMFLW_1	UreaFlow_1	NOXRPT_1	STMFLW_2	UreaFlow_1	NOXRPT_2	STMFLW_3	UreaFlow_1	NOXRPT_3
	K#/Hr	GPH	ppm 7% O2	K#/Hr	GPH	ppm 7% O2	K#/Hr	GPH	ppm 7% O2
11/1/2019	192	8.5	143	191	10.6	141	192	14.1	140
11/2/2019	191	8.5	143	191	10.6	141	192	14.1	140
11/3/2019	192	8.5	143	191	10.6	141	192	14.1	140
11/4/2019	191	8.5	143	191	10.6	141	192	14.1	140
11/5/2019	191	8.5	143	191	10.6	141	192	14.1	140
11/6/2019	191	8.5	143	191	10.6	141	192	14.1	140
11/7/2019	191	8.5	143	191	10.6	141	192	14.1	140
11/8/2019	191	8.5	143	191	10.6	141	192	14.1	140
11/9/2019	191	8.5	143	191	10.6	141	192	14.1	140
11/10/2019	191	8.5	143	191	10.6	141	192	14.1	140
11/11/2019	191	8.5	143	191	10.6	141	192	14.1	140
11/12/2019	191	8.5	143	191	10.6	141	192	14.1	140
11/13/2019	191	8.5	143	191	10.6	141	192	14.1	140
11/14/2019	192	8.5	143	191	10.6	141	192	14.1	140
11/15/2019	192	8.5	143	191	10.6	141	192	14.1	140
11/16/2019	192	8.5	143	191	10.6	141	192	14.1	140
11/17/2019	192	8.5	143	191	10.6	141	192	14.1	140
11/18/2019	192	8.5	143	191	10.6	141	192	14.1	140
11/19/2019	192	8.5	143	191	10.6	141	192	14.1	140
11/20/2019	192	8.5	143	191	10.6	141	192	14.1	140
11/21/2019	192	8.5	143	191	10.6	141	192	14.1	140
11/22/2019	192	8.5	143	191	10.6	141	192	14.1	140
11/23/2019	192	8.5	143	191	10.6	141	192	14.1	140
11/24/2019	192	8.5	143	191	10.6	141	192	14.1	140
11/25/2019	192	8.5	143	191	10.6	141	192	14.1	140
11/26/2019	192	8.5	143	191	10.6	141	192	14.1	140
11/27/2019	192	8.5	143	191	10.6	141	192	14.1	140
11/28/2019	192	8.5	143	191	10.6	141	192	14.1	140
11/29/2019	192	8.5	143	191	10.6	141	192	14.1	140
11/30/2019	192	8.5	143	191	10.6	141	192	14.1	140
		8.5							
Valid Avg	192	8.5	143	191	10.6	141	192	14.1	140
Valid Max	192	8.5	143	191	10.6	141	192	14.1	140
Valid Min	191	8.5	143	191	10.6	141	192	14.1	140
Online Days	30	30	30	30	30	30	30	30	30

COVANTA
ENERGY
for a cleaner world

Covanta Montgomery, Inc.
21204 Martinsburg Rd
Dickerson, MD 20842
Tel 301 916 3031
Fax 301 349 5309

January 17, 2019

Mr. Randy Mosier, Division Chief
Air Quality Regulations Division
Maryland Department of the Environment
Air Quality Planning Program
1800 Washington Boulevard, Suite 715
Baltimore, MD 21230-1720

SUBJECT: **Montgomery County Resource Recovery Facility**
NOx RACT – Plan to Operate

Dear Mr. Mosier:

On behalf of the Northeast Maryland Waste Disposal Agency and in accordance with COMAR 26.11.08.10.G, NOx Requirements for Large Municipal Waste Combustors, enclosed is the Plan to Operate for the Montgomery County Resource Recovery Facility, operated by Covanta. The Plan outlines how the Facility will be operated to maintain compliance with this regulation.

If you have any questions regarding this submittal, please do not hesitate to contact me 301-691-9008.

Sincerely,

Eli Golfer
Environmental Specialist

cc: David Blackmore
Joe Walsh
Steve Sprague
Ray Liou
Chris Skaggs
John Schott
Joe LaDana

NOx RACT - Plan to Operate

COMAR 26.11.08.10.G - NOx Requirements for Large Municipal Waste Combustors plan to operate to meet new NOx limits.

The Montgomery County Resource Recovery Facility (MCRRF) is a large municipal waste combustor facility operated by Covanta Montgomery Inc., on behalf of the Northeast Maryland Waste Disposal Authority (NMWDA) and the Montgomery County Department of Environmental Protection, Division of Solid Waste Services. The SIC code for the MCRRF is 4953 (refuse systems). The MCRRF consists of three independent combustion trains that have a total nominal design capacity of 1,800 tons/day with an average heating value of 5,500 Btu/lb of waste combusted. The thermal output from the facility is used to generate up to 63 megawatts of renewable energy for distribution to the electrical grid.

In October 2009, the MCRRF implemented an upgrade to the Selective Non-Catalytic Reduction (SNCR) for Nitrogen Oxides (NOx) emission control called Low NOx or LN^{TM}. This upgrade reduced NOx emissions to levels below the existing federal and Maryland standards. The system involves the redirection of a portion of the secondary or overfire air to a higher elevation in the furnace. This allows for completion of the combustion process while minimizing NOx formation through temperature control. In addition to the combustion air modifications, the system also included the replacement of anhydrous ammonia with aqueous ammonia. This project reduced NOx concentration at the stack while simultaneously reducing reagent use. Continued use of LN^{TM}, in combination with the SNCR system, will allow the MCRRF to meet the NOx emission limits contained within the current permit approvals as well the new limits under COMAR 26.11.08.10 as further outlined below.

Currently the MCRRF operates pursuant to the following permit approvals:

1) Title V Operating Permit / PSD Permit
    a. Daily NOx concentration limit: 180 ppm, 24-hour average
    b. NOx mass limit during Startup/Shutdown/Malfunction: 260 lb/hr, 24-hour average.

    c. NOx RACT Requirement (COMAR 26.11.08.10)
        i. Emission Limits beginning May 1, 2019

NOx (Oxides of Nitrogen)	Emission Standard for a Large MWC
24-hour Block Average Emission Rate	140 ppmv
Startup/Shutdown emission limit timed average mass loading over a 24-hour period	202 lbs/hr

        ii. Beginning May 1, 2020

NOx (Oxides of Nitrogen)	Emission Standard for a Large MWC
30-day rolling average emission rate	105 ppmv

To continue operating in compliance with the NOx RACT requirements under COMAR 26.11.08.10, the MCRRF will adhere to its Environmental Compliance Operating Manual (ECOM) procedures for the following:

2) ECOM Section 4 – MWC Unit Startup, Shutdown, and Malfunction Procedures

   These procedures cover the startup and shutdown of the boilers and its auxiliaries as well as all associated air pollution control equipment. The procedures for responding to malfunctions during normal operations are also identified.

   i. 4.1 MWC Startup Procedures
   ii. 4.2 MWC Unit Shutdown Procedures
   iii. 4.3 MWC Unit Malfunction Procedures

3) ECOM Section 7.2 Response to Elevated Nitrogen Oxides (NOx)

   In the event that NO_x emissions are above the permit limit, immediate action must be taken to reduce emissions to ensure compliance. If NO_x levels cannot be reduced to permitted levels in one hour, the Chief Engineer, or if not available, the Facility Manager or Maintenance Supervisor must be notified. Unit load must be reduced, or the unit removed from service, as necessary to prevent exceeding the permit limit for NO_x emissions. In addition to increasing the delivery rate of ammonia to the NO_x control system, auxiliary gas burners may be used for short term control.

4) ECOM Section 11 – Procedures for Monitoring MWC Unit Emissions

   Written quality control procedures for the gas and opacity CEMS are required under federal regulation 40 CFR Part 60, Appendix F, Procedure 1: "Quality Assurance Requirements for Gaseous Continuous Emission Monitoring Systems (CEM) Used for Compliance Determination."

   i. 11.3 Continuous Emission Monitoring System (CEMS)
   ii. 11.4.5 Acquisition/Control System

5) Procedures for maintaining the NOx analyzers including daily calibrations, quarterly cylinder gas audits, and annual relative accuracy testing audits are performing in accordance with *40CFR appendix B to Part 60 – Performance Specification 2 – Specifications and Test Procedures for SO2 and NOx Continuous Emissions Monitoring Systems in Station Sources.*

6) ECOM Section 12 - Reporting and Recordkeeping

This section describes and illustrates the calculations used to determine NO_x emissions and Gas and Opacity CEM accuracy.

i. 12.1.1.1 Calculations
    1. 24-hour NOx concentration of 140 ppm
    2. Rolling 30-day average NOx concentration of 105 ppm
    3. NOx mass emission during startup and shutdown of 202 lbs/hr

ii. 12.1.1.2 Reporting Requirements
    1. NOx RACT reporting requirements will become Section H of the Quarterly Operations and Maintenance (O&M) Report that is submitted to MDE [30 days] after the completion of each calendar quarter. This section will include the following:
        a. Data, information, and calculations which demonstrated compliance with the NOx 24-hour block average.
        b. Data, information, and calculations, including NOx CEMS data and stack flow data which demonstrate compliance with startup and shutdown mass NOx emission limits.
        c. Flagging of periods of startup and shutdown and exceedances of emission rates.
        d. Documented actions taken during periods of startup and shutdown in signed, contemporaneous logs.

SECTION 12 - Public Hearing Notices

Maryland

Molla Sarros -MDE- <molla.sarros@maryland.gov>

MDE Public Hearing Announcement for Municipal Waste Combustors Amendment

1 message

Molla Sarros -MDE- <molla.sarros@maryland.gov> Fri, Sep 27, 2019 at 12:13 PM
To: Randy Mosier -MDE- <randy.mosier@maryland.gov>, Carolyn A Jones -MDE- <carolyna.jones@maryland.gov>
Bcc: afarnoud@ramboll.com, Bill Paul -MDE- <bill.paul@maryland.gov>, brent.d.williams@navy.mil, Carolyn A Jones -MDE- <carolyna.jones@maryland.gov>, chi.luebehusen@ngc.com, daniel.carawan@navy.mil, david.cramer@nrgenergy.com, dlovaas@nrdc.org, "Much, Edwin" <edwin.much@talenenergy.com>, Eddie Durant -MDE- <eddie.durant@maryland.gov>, Husain Waheed -MDE- <husain.waheed@maryland.gov>, joel.leon@dep.nj.gov, jon.reimann@aes.com, josh.berman@sierraclub.org, Joshua Shodeinde -MDE- <joshua.shodeinde@maryland.gov>, Kathleen Wehnes -MDE- <kathleen.wehnes@maryland.gov>, larapedrini@gmail.com, lknapp@mdcounties.org, Lisa.Pfeifer@pepcoholdings.com, MaryJane Rutkowski -MDE- <maryjane.rutkowski@maryland.gov>, Mitchell Greger -MDE- <mitchell.greger@maryland.gov>, mmoss@lordabbett.com, Molla Sarros -MDE- <molla.sarros@maryland.gov>, nrushing@cpv.com, Pars Ramnarain -MDE- <pars.ramnarain@maryland.gov>, Ralph Hall -MDE- <ralph.hall@maryland.gov>, "Laljani, Ravi P.E." <rlaljani@akrf.com>, Regina Aris <raris@baltometro.org>, Roger Thunell -MDE- <roger.thunell@maryland.gov>, Steven.Arabia@nrgenergy.com, Steven Lang -MDE- <steven.lang@maryland.gov>, Suna Sariscak -MDE- <suna.sariscak@maryland.gov>, Susan Nash -MDE- <susan.nash@maryland.gov>, thenderson@richlaw.com, tporter@wtienergy.com, "Weissinger, Thomas" <tweissinger@raven-power.com>, "Cunningham, Bill" <ujae@rcn.com>, virginia.kearney@maryland.gov, Horacio Tablada -MDE- <horacio.tablada@maryland.gov>, Angelo Bianca -MDE- <angelo.bianca@maryland.gov>, Brian Hug -MDE- <brian.hug@maryland.gov>, Carol Beatty -MDOD- <carol.beatty@maryland.gov>, Cecily Beall <cecily.beall@dc.gov>, Chris Chripps <cripps.christopher@epa.gov>, Cliff Mitchell -DHMH- <cliff.mitchell@maryland.gov>, Cynthia Stahl <stahl.cynthia@epa.gov>, Dave Campbell <campbell.dave@epa.gov>, David Arnold <arnold.david@epa.gov>, "Fees, David F. (DNREC)" <David.Fees@delaware.gov>, David Talley <talley.david@epa.gov>, "doris.mcleod@deq.virginia.gov" <Doris.McLeod@deq.virginia.gov>, Felice.Weiner@dep.nj.gov, Frank Courtright <frank.courtright@maryland.gov>, Francis Steitz <Francis.Steitz@dep.nj.gov>, George Aburn -MDE- <george.aburn@maryland.gov>, Hilary Miller -MDE- <hilary.miller@maryland.gov>, Jay Apperson -MDE- <jay.apperson@maryland.gov>, Jeffrey Fretwell -MDE- <jeffrey.fretwell@maryland.gov>, John Brennan -MDOD- <john.brennan@maryland.gov>, "Ramamurthy, Krishnan <kramamurth@pa.gov>" <kramamurth@pa.gov>, Laura.M.Crowder@wv.gov, Lee Currey <lee.currey@maryland.gov>, Mark Shaffer -MDE- <mark.shaffer1@maryland.gov>, MDE DL All County Environmental Health Directors <DLAllCountyEnvironmentalHealthDirectors_MDE@maryland.gov>, MDE DL All County Health Officers <DLAllCountyHealthOfficers_MDE@maryland.gov>, MDE DL All MDE Field Office Personnel <DLAllMDEFieldOfficePersonnel_MDE@maryland.gov>, Megan Ulrich -MDE- <megan.ulrich@maryland.gov>, Michael Dowd <mgdowd@deq.virginia.gov>, Mike Gordon <gordon.mike@epa.gov>, Rachel Hess-Mutinda -DHMH- <rachel.hess-mutinda@maryland.gov>, Randy Mosier -MDE- <Randy.Mosier@maryland.gov>, Sharon McCauley <mccauley.sharon@epa.gov>, Shawn.garvin@state.de.us, Susan Douglas <susan.douglas@maryland.gov>, Susan Spielberger <spielberger.susan@epa.gov>, william.f.durham@wv.gov, Ketan.Bhandutia@dep.nj.gov, aruss@environmentalintegrity.org, brooke@chesapeakeclimate.org, grahamcharlesbfhs@gmail.com, chris.yoder@mdsierra.org, destinyswatford@gmail.com, diana@chesapeakeclimate.org, donna.mcdowell@ymail.com, doreen.paster@mdsierra.org, emily@marylandpirg.org, "Trisko, Eugene" <emtrisko@earthlink.net>, eschaeffer@environmentalintegrity.org, greggalen@gmail.com, jckunze@smcm.edu, jkunze@cleanwater.org, josh.tulkin@sierraclub.org, kjkriescher@hotmail.com, lkelly@environmentalintegrity.org, LEpstein@cbf.org, mike@energyjustice.net, mtidwell@chesapeakeclimate.org, pdycus@environmentalintegrity.org, rich.reis@mdsierra.org, seth.bush@sierraclub.org, twhitehouse@psr.org, dblackmore@covanta.com, ssprague@nmwda.org, cskaggs@nmwda.org, bkeller@wtienergy.com, egolfer@covantaenergy.com, Joe.LaDana@montgomerycountymd.gov, apritcha@wtienergy.com, JWalsh@covanta.com, Lonnie.Heflin@montgomerycountymd.gov

MARYLAND DEPARTMENT OF THE ENVIRONMENT

AIR & RADIATION ADMINISTRATION

NOTICE OF PUBLIC HEARING/COMMENT PERIOD

The Maryland Department of the Environment gives notice of a public hearing/comment period concerning the following proposed action:

Amendment of regulations .01 and .10 under COMAR 26.11.08 - Control of Incinerators. The purpose of this action is to amend nitrogen oxide (NOx) reasonable available control technology (RACT) requirements under COMAR 26.11.08.01 and COMAR 26.11.08.10 for large municipal waste combustors (Large MWCs). In order to satisfy the Environmental Protection Agency's (EPA) updated startup, shutdown and malfunction (SSM) policy (80

Fed. Reg. 33840), NOx emission limits shall be extended to cover periods when a Large MWC is combusting only fossil fuel, as a means to warm-up the furnace and other critical components prior to municipal solid waste being fed to the combustor. Additional amendments are being made to clarify how the 24-hour block average emission rates and 30-day rolling average emission rates are to be calculated.

The regulatory action listed above will be submitted to the U.S. EPA for approval as a revision to Maryland's State Implementation Plan.

The full text of the proposed regulatory action is attached and appears in the Maryland Register at http://www.dsd.state.md.us/MDR/mdregister.html **on September 27, 2019.**

Notice of the public comment period is also available on the Maryland Department of the Environment's website at the following addresses:
http://mde.maryland.gov/programs/Regulations/air/Pages/reqcomments.aspx

A public hearing on this action will be held on **October 29, 2019** at 1:00 p.m. at the Department of the Environment, 1800 Washington Boulevard, 1st Floor Conference Rooms, Baltimore, Maryland 21230-1720.

Comments must be received by 5 pm on **October 29, 2019.**

For more information or to submit comments, call or e-mail:
Randy Mosier, Chief, Regulation Development Division
Air Quality Planning Program
Air and Radiation Administration
Department of the Environment
1800 Washington Boulevard, Suite 730, Baltimore, Maryland 21230-1720
Telephone: (410) 537-4488
Email: randy.mosier@maryland.gov

MDRegister_27Sept19_NPA_Print_MWC.pdf
7512K

Telephone: (410) 537-4488
Email: randy.mosier@maryland.gov

Notice of public hearing/comment concerning the following proposed actions: Amend regulations .01 and .10 under COMAR 26.11.08 - Control of Incinerators.

The purpose of this action is to amend nitrogen oxide (NO_x) reasonable available control technology (RACT) requirements under COMAR 26.11.08.01 and COMAR 26.11.08.10 for large municipal waste combustors (Large MWCs). In order to satisfy the Environmental Protection Agency's (EPA) updated startup, shutdown and malfunction (SSM) policy (80 Fed. Reg. 33840), NO_x emission limits whall be extended to cover periods when a Large MWC is combustiing only fossil fuel, as a means to warm-up the furnace and other critical components prior to municipal solid waste being fed to the combustor. Additional amendments are being made to clarify how the 24-hour block average emission rates and 30-day rolling average emission rates are to be calculated.

The amendments pertaining to Large MWCs will be submitted to the U.S. Environmental Protection Agency (EPA) for approval as part of Maryland's State Implementation Plan (SIP).

The full text of the proposed new regulation will appear in the Maryland Register on **September 27, 2019**.

Click here to read the Technical Support Document.

A public hearing on this action will be held on October 29, 2019, at 1:00 p.m. at the Department of the Environment, 1800 Washington Boulevard, 1st Floor Conference Rooms, Baltimore, Maryland 21230-1720.

Comments must be received by 5:00 p.m. on **October 29, 2019**.

For more information or to submit comments, call or email:

Randy Mosier, Chief, Regulation Development Division
Air Quality Planning Program
Air and Radiation Administration
Maryland Department of the Environment
1800 Washington Boulevard, Suite 730, Baltimore, Maryland 21230-1720
Telephone: (410) 537-4488
Email: randy.mosier@maryland.gov

Maryland
Department of
the Environment

Larry Hogan
Governor

Boyd Rutherford
Lieutenant Governor

Ben Grumbles
Secretary

November 7, 2019

CERTIFICATION OF PUBLICATION

This is to certify that the "Notice of public hearing/comment concerning the following proposed actions: Amend regulations .01 and .10 under COMAR 26.11.08 - Control of Incinerators" and was published on MDE's web site September 25, 2019. The notice will remain posted through October 29, 2019 (and remains there now).

The notice in full with links to supporting documents may be found in the following web address:

https://mde.maryland.gov/programs/Regulations/air/Pages/reqcomments.aspx

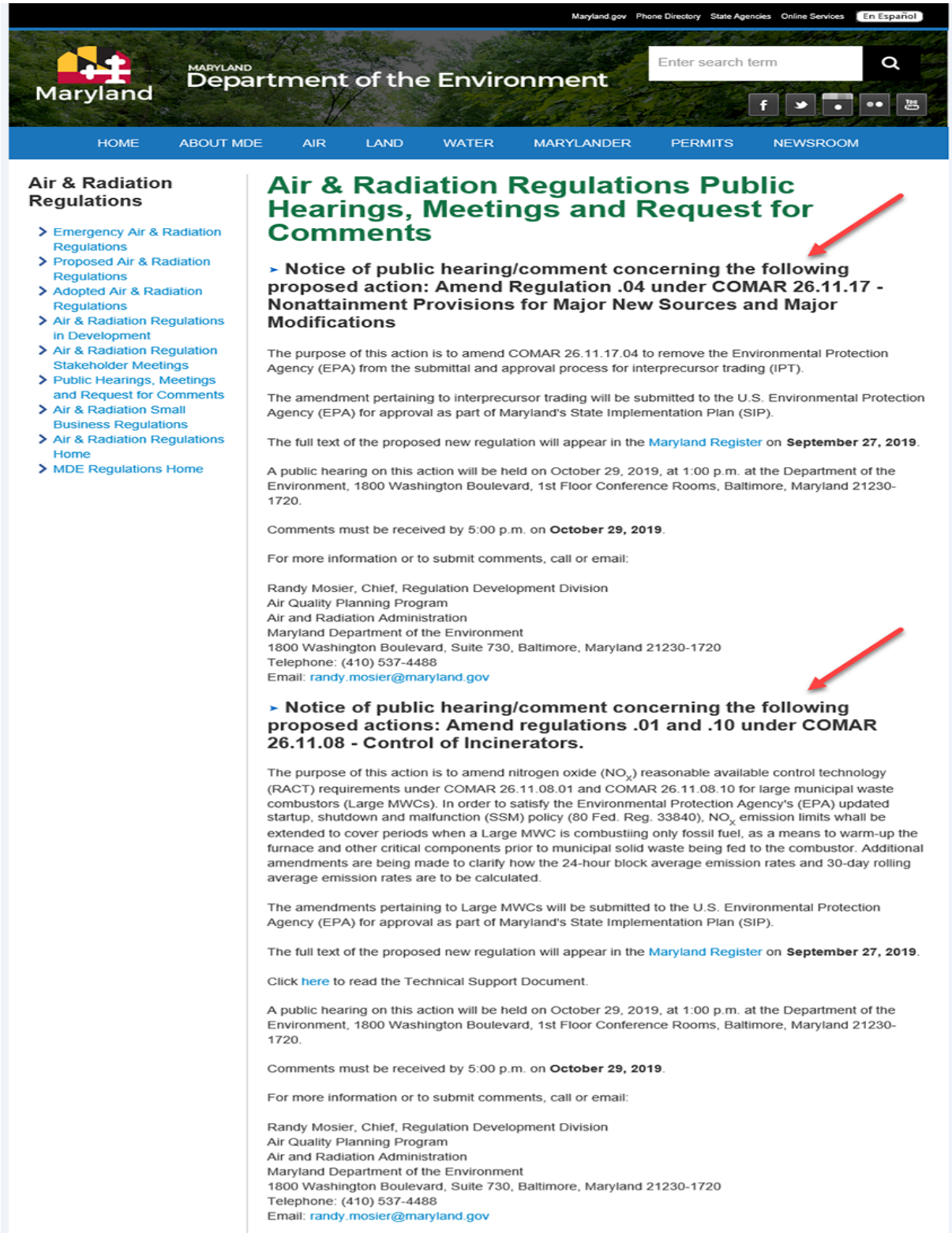
Web publication of the notice was at the request of Carolyn Jones, Regulatory Compliance Engineer III of the Air and Radiation Administration of MDE.

By:

Joseph E. Herb Jr.

JOE HERB
MDE Webmaster

Attachment:
Copy of web page as published.



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Air & Radiation Regulations Public Hearings, Meetings and Request for Comments

▸ Notice of public hearing/comment concerning the following proposed action: Amend Regulation .04 under COMAR 26.11.17 - Nonattainment Provisions for Major New Sources and Major Modifications

The purpose of this action is to amend COMAR 26.11.17.04 to remove the Environmental Protection Agency (EPA) from the submittal and approval process for interprecursor trading (IPT).

The amendment pertaining to interprecursor trading will be submitted to the U.S. Environmental Protection Agency (EPA) for approval as part of Maryland's State Implementation Plan (SIP).

The full text of the proposed new regulation will appear in the Maryland Register on **September 27, 2019**.

A public hearing on this action will be held on October 29, 2019, at 1:00 p.m. at the Department of the Environment, 1800 Washington Boulevard, 1st Floor Conference Rooms, Baltimore, Maryland 21230-1720.

Comments must be received by 5:00 p.m. on **October 29, 2019**.

For more information or to submit comments, call or email:

Randy Mosier, Chief, Regulation Development Division
Air Quality Planning Program
Air and Radiation Administration
Maryland Department of the Environment
1800 Washington Boulevard, Suite 730, Baltimore, Maryland 21230-1720
Telephone: (410) 537-4488
Email: randy.mosier@maryland.gov

▸ Notice of public hearing/comment concerning the following proposed actions: Amend regulations .01 and .10 under COMAR 26.11.08 - Control of Incinerators.

The purpose of this action is to amend nitrogen oxide (NO_x) reasonable available control technology (RACT) requirements under COMAR 26.11.08.01 and COMAR 26.11.08.10 for large municipal waste combustors (Large MWCs). In order to satisfy the Environmental Protection Agency's (EPA) updated startup, shutdown and malfunction (SSM) policy (80 Fed. Reg. 33840), NO_x emission limits whall be extended to cover periods when a Large MWC is combustiing only fossil fuel, as a means to warm-up the furnace and other critical components prior to municipal solid waste being fed to the combustor. Additional amendments are being made to clarify how the 24-hour block average emission rates and 30-day rolling average emission rates are to be calculated.

The amendments pertaining to Large MWCs will be submitted to the U.S. Environmental Protection Agency (EPA) for approval as part of Maryland's State Implementation Plan (SIP).

The full text of the proposed new regulation will appear in the Maryland Register on **September 27, 2019**.

Click here to read the Technical Support Document.

A public hearing on this action will be held on October 29, 2019, at 1:00 p.m. at the Department of the Environment, 1800 Washington Boulevard, 1st Floor Conference Rooms, Baltimore, Maryland 21230-1720.

Comments must be received by 5:00 p.m. on **October 29, 2019**.

For more information or to submit comments, call or email:

Randy Mosier, Chief, Regulation Development Division
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SECTION 13 - Maryland Department of the Environment Hearing Statement

Statement of the Air and Radiation Administration
Department of the Environment
for the Public Hearing Relating to Proposed
Amendment of Regulations .01 and .10 under COMAR 26.11.08 - Control of Incinerators.

Held on October 29, 2019
Baltimore, MD

My name is Husain Waheed. I am a Senior Regulatory and Compliance Engineer with the Regulation Development Division of the Air and Radiation Administration, Maryland Department of the Environment.

This public hearing is being held pursuant to the requirements of section 110(a) of the Clean Air Act and 40 CFR Section 51.102. It is also being held in conformance with the State Administrative Procedure Act, codified under the Annotated Code of Maryland, State Government Article, Section 10-101 et. seq., and the Annotated Code of Maryland, Environment Article, Section 2-301 et.seq.

Notice of this hearing appeared in the Maryland Register on September 27, 2019.

Copies of the proposed action and supporting documents are submitted at this time into the hearing record. Copies were also made available for public inspection at the Maryland Department of the Environment Air and Radiation Administration offices in Baltimore and at the Air and Radiation Administration webpage titled "Air & Radiation Regulations Public Hearings, Meetings and Request for Comments", from September 27, 2019 to October 29, 2019.

The purpose of today's hearing is to give the public an opportunity to comment on the proposed amendments to **COMAR 26.11.08 Control of Incinerators.**

Summary

The purpose of this action is to amend nitrogen oxide (NOx) reasonable available control technology (RACT) requirements under COMAR 26.11.08.01 and COMAR 26.11.08.10 for large municipal waste combustors (Large MWCs). In order to satisfy the Environmental Protection Agency's (EPA) updated startup, shutdown and malfunction (SSM) policy (80 Fed. Reg. 33840), NOx emission limits shall be extended to cover periods when a Large MWC is combusting only fossil fuel, as a means to warm-up the furnace and other critical components prior to municipal solid waste being fed to the combustor. Additional amendments are being made to clarify how the 24-hour block average emission rates and 30-day rolling average emission rates are to be calculated.

The amendments will be submitted to the U.S. Environmental Protection Agency for approval as part of Maryland's State Implementation Plan (SIP).

On December 6, 2018, the Maryland Department of the Environment (MDE) adopted updates to NOx RACT for Large MWCs with a capacity greater than 250 tons per day. New regulation COMAR 26.11.08.10 requires that Maryland's two Large MWCs shall meet specific NOx 24-hour block average emission rates by May 1, 2019 and NOx 30-day rolling average emission rates by May 1, 2020, except during periods of startup and shutdown.

During periods of startup and shutdown, additional ambient air is introduced into the furnace making concentration-based emission limits not practical during these times. The excess ambient air makes it technically infeasible for MWCs to comply with the emission rates due to the "7 percent oxygen correction factor" that is required to be applied to the NOx 24-hour block rates. Therefore, an equivalent mass-based emission limit is required during startup and shutdown. In addition to the mass-based emission limit, the NOx 24-hour block average emission rate will apply for the 24-hour period after startup is completed and before shutdown commences, as applicable.

The definition of "startup" excludes warm-up periods, as a result, the regulations present a period of time when no NOx emission limits are in place. As is the case with startup and shutdown, warm-up periods require excess ambient air to be introduced into the furnace making concentration-based emission limits not practical. Therefore, an equivalent mass-based emission limit will be required during warm-up periods.

Large MWCs operate solely on natural gas during warm-up periods. Input to natural gas burners and corresponding furnace temperatures are increased gradually to ensure safe operations and integrity of incinerator components. Warm-up periods may run from 3 hours to 16 hours depending upon a number of variables, such as ambient temperatures, duration of unit shutdown, furnace temperature, etc. The warm-up period ends when start-up begins, which entails municipal solid waste being fed to the combustor. By definition, under COMAR 26.11.08 periods of startup and shutdown are limited to 3 hours in duration.

Sources Affected

There are two Large MWCs in Maryland, Wheelabrator Baltimore, L.P. and Montgomery County Resource Recovery Facility.

Regulation Amendments

This regulatory action proposes NOx RACT standards for Large MWCs during warm-up periods. There is no equivalent federal RACT standard for Large MWCs. Maryland's existing NOx RACT for Large MWCs is based upon 40 CFR 60, Subpart Ea - Standards of Performance for Municipal Waste Combustors for Which Construction Is Commenced After December 20, 1989 and On or Before September 20, 1994, 40 CFR 60, Subpart Eb - New Source Performance Standards for Large Municipal Waste Combustors constructed after September 20, 1994 and 40 CFR 60,Subpart Cb - Emission Guidelines and Compliance Times for Large Municipal Waste Combustors constructed on or before September 20, 1994.

This action establishes warm-up period NOx RACT emission limitations and related

requirements for large MWCs with a capacity greater than 250 tons per day. The amendments to COMAR 26.11.08.10 will require that as of January 1, 2020, Maryland's two Large MWCs shall meet mass-based emission limits during warm-up periods. During periods of warm-up the Montgomery County Resource Recovery Facility shall meet a facility wide NOx emission limit of 202 lbs/hr timed average mass loading averaged over the hours operated in warm-up period and the Wheelabrator Baltimore, Inc. facility shall meet a unit specific NOx emission limit of 84 lbs/hr timed average mass loading averaged over the hours operated in warm-up period.
The startup, shutdown and warm-up period mass emission limits are based upon the 24-hour block average NOx RACT rates applicable to each Large MWC (incorporating the NOx 24-hour block average emission rates of COMAR 26.11.08.10B into the calculation) and provide equivalent stringency to the concentration limits that apply at all other times. Mass based emission calculations are derived utilizing 40 CFR 60.1460 (Concentration correction to 7 percent oxygen) or 40 CFR 60.45 (Conversion procedures to convert CEM data into applicable standards). EPA Method 19 may also be utilized to determine NOx emission rates based upon oxygen concentrations. Facility average flue gas flow rates are also utilized in the calculations. The calculation methodology for the mass emission limits is based upon the Prevention of Significant Deterioration (PSD) Approval for each affected facility.

The NOx RACT amendments further specify that Large MWCs shall minimize NOx emissions during warm-up periods by operating and optimizing the use of all installed pollution control technology and combustion controls consistent with the technological limitations, manufacturers' specifications, good engineering and maintenance practices, and good air pollution control practices for minimizing emissions (as defined in 40 CFR §60.11(d)) for such equipment and the unit at all times the unit is in operation. These requirements are currently in place for normal operations and periods of startup and shutdown. Quarterly reporting requirements which demonstrate compliance with the NOx RACT emission rates and NOx mass loading emission limits are amended to include warm-up periods. The reports shall now include flagging of periods of warm-up and exceedance of warm-up period emission rates.

Comparison to Federal Standards

There is no corresponding federal standard to this proposed action.

Estimate of Economic Impact

The proposed action has no economic impact

Consideration of Comments

The Department will consider all comments before making a decision to adopt the new regulation and amendments.

SECTION 14 - Public Hearing Transcript

MARYLAND DEPARTMENT OF THE ENVIRONMENT

AIR AND RADIATION MANAGEMENT ADMINISTRATION

PUBLIC HEARING CONCERNING

THE FOLLOWING PROPOSED ACTIONS:

AMEND REGULATIONS .01 AND .10 UNDER COMAR 26.11.08 - CONTROL OF INCINERATORS

The hearing in the above matter commenced on Tuesday, October 29, 2019, at the MDE Headquarters, Montgomery Park, 1800 Washington Boulevard, Baltimore, Maryland.

BEFORE: MOLLA SARROS, Hearing Officer

Reported by: George L. Quade, CERT

A P P E A R A N C E S

ON BEHALF OF THE MARYLAND DEPARTMENT OF THE ENVIRONMENT:

MOLLA SARROS
Natural Resources Planner
Air Quality Planning Program
Air and Radiation Administration
Maryland Department of the Environment
1800 Washington Boulevard, Suite 730
Baltimore, Maryland 21230

HUSAIN WAHEED
Senior Regulatory and Compliance Engineer
Regulation Development Division
Air and Radiation Administration
Maryland Department of the Environment
1800 Washington Boulevard, Suite 730
Baltimore, Maryland 21230

I N D E X

P R O C E E D I N G S

- - - - -

(1:16 p.m.)

MS. SARROS: Good afternoon. On behalf of the Maryland Department of the Environment, I'd like to welcome you to this hearing.

My name is Molla Sarros and I am a Natural Resources Planner in the Air Quality Planning Program for the Air and Radiation Administration. I will serve as hearing officer for today's hearing.

I would like to ask all of you in attendance today to please sign in. I believe you all have, but if you haven't please do so. This will help us to keep an accurate record of the people who participate in the hearing. Also, copies of our regulation proposal, support documents, and the Department's statement are available on the table for your information.

This hearing concerns Air Quality Regulations found in the Code of Maryland Regulations, Title 26, Subtitle 11, Air Quality. The Secretary of the Environment -- the Secretary of the Department proposes

to:

Amend Regulations .01 and .10 under COMAR 26.11.08 - Control of Incinerators

The purpose of this hearing is to give the public an opportunity to comment on this action.

The Opportunity for Public Comment for this proposed action appeared in the "Proposed Action on Regulations" section of the Maryland Register, Volume 46, Issue 20, Pages 862 - 865, on September 27, 2019.

The hearing will proceed in the following order. First, Mr. Husain Waheed will make a statement on behalf of the Air Administration. After Mr. Waheed is finished, I will call on any elected official or government official who wants to make a statement. Then, I will call upon anyone else who indicated on the sign-in sheet that he or she would like to make a statement. We ask that cell phones be turned off or placed away from the microphones to minimize interference with recording.

When you give your statement, please identify yourself and your affiliation, and give your statement loudly and clearly. If you have a written copy of your

statement today, we would be happy to have a copy. Are there any questions?

(No response).

MS. SARROS: I will now call on Mr. Waheed.

Statement of the Air and Radiation Administration

Department of the Environment

for the Public Hearing Related to Proposed

Amendment of Regulations .01 and .10 under COMAR 26.11.08

- Control of Incinerators.

Held on October 29, 2019

My name is Husain Waheed and I am a Senior Regulatory and Compliance Engineer with the Regulation Development Division of the Air and Radiation Administration, Maryland Department of the Environment.

The public hearing is being held pursuant to the requirements of section 110(a) of the Clean Air Act and 40 CFR Section 51.102. It is also being held in conformance with the State Administrative Procedure Act, codified under the Annotated Code of Maryland, State Government Article, Section 10-101, and the Annotated

Code of Maryland, Environment Article, Section 2-301 et. seq.

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The purpose of today's hearing is to give the public an opportunity to comment on the proposed amendments to COMAR 26.11.08 Control of Incinerators.

Summary

The purpose of this action is to amend nitrogen oxide (NOx) reasonable available control technology (RACT) requirements under COMAR 26.11.08.01 and COMAR 26.11.08.10 for large municipal waste combustors (Large

MWCs). In order to satisfy the Environmental Protection Agency's (EPA) updated startup, shutdown and malfunction (SSM) policy (80 Fed. Reg. 33840), NOx emission limits shall be extended to cover periods when a Large MWC is combusting only fossil fuel, and as a means to warm-up the furnace and other critical components prior to municipal solid waste being fed to the combustor. Additional amendments are being made to clarify how the 24-hour block average emission rates and 30-day rolling average emission rates are to be calculated.

The amendments will be submitted to the U.S. Environmental Protection Agency for approval as part of Maryland's State Implementation Plan (SIP).

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40 CFR 60, Subpart Ea - Standards of Performance for Municipal Waste Combustors for Which Construction Is Commenced After December 20, 1989 and On or Before September 20, 1994, 40 CFR 60, Subpart Eb - New Source Performance Standards for Large Municipal Waste Combustors constructed after September 20, 1994 and 40 CFR 60, Subpart Cb - Emission Guidelines and Compliance Times for Large Municipal Waste Combustors constructed on or before September 20, 1994.

This action establishes warm-up period NOx RACT emission limitations and related requirements for large MWCs with a capacity of 250 tons per day. The amendments to COMAR 26.11.08.10 will require that as of January 1, 2020, Maryland's two Large MWCs shall meet mass-based emission limits during warm-up periods. During periods of warm-up the Montgomery County Resource Recovery Facility shall meet a facility wide NOx emission limit of 202 lbs/hr timed average mass loading averaged over the hours operated in warm-up period and the Wheelabrator facility, Incorporated, shall meet a unit specific NOx emission limit of 84 lbs/hr timed average mass loading

averaged over the hours operated in warm-up period. The startup, shutdown and warm-up period mass emission limits are based upon the 24-hour block average NOx RACT rates applicable to each Large MWC (incorporating the NOx 24-hour block average emission rates of COMAR 26.11.08.10B into the calculation) and provide equivalent stringency to the concentration limits that apply at all other times. Mass based emission calculations are derived utilizing 40 CFR 60.1460 (Concentration correction to 7 percent oxygen) or 40 CFR 60.45 (Conversion procedures to convert CEM data into applicable standards). EPA Method 19 may also be utilized to determine NOx emission rates based upon oxygen concentrations. Facility average flue gas flow rates are also utilized in the calculations. The calculation methodology for the mass emission limits is based upon the Prevention of Significant Deterioration (PSD) Approval for each affected facility.

The NOx RACT amendments further specify that Large MWCs shall minimize NOx emissions during the warm-up periods by operating and optimizing the use of all

installed pollution control technology and combustion controls consistent with the technological limitations, manufacturers' specifications, good engineering and maintenance practices, and good air pollution control practices for minimizing emissions (as defined in 40 CFR §60.11(d)) for such equipment and the unit at all times the unit is in operation. These requirements are currently in place for normal operations and periods of startup and shutdown. Quarterly reporting requirements which demonstrate compliance with the NOx RACT emission rates and NOx mass loading emission limits are amended to include warm-up periods. The reports shall now include flagging of periods of warm-up and exceedance of warm-up period emission rates.

Comparison to Federal Standards

There is no corresponding federal standard to this proposed action.

Estimate of Economic Impact

The proposed action has no economic impact.

Consideration of Comments

The Department will consider all comments

before making a decision to adopt the new regulation and amendments.

MS. SARROS: Thank you, Mr. Waheed.

MR. WAHEED: Thank you.

MS. SARROS: Seeing no officials in attendance, I will now call upon Mike Ewell. Is that how --

MR. EWALL: Ewall (pronouncing).

MS. SARROS: Ewall, okay, to present your statement. And -- yeah, go for it.

MR. EWALL: All right. So thank you for hearing me. My name is Mike Ewall. I'm the founder and director of Energy Justice Network. We're a national organization based in Philadelphia but very active here in Baltimore, in particular to both incinerators in Maryland, actually, working to get them to meet the strongest standards available or shut down.

Now, I'd like to start by just pointing out the lack of public here at this public hearing, which is being held on a work day at 1:00 p.m. There's a big stake that people have, especially here in Baltimore.

Every parent with a child with asthma should have been notified about this hearing. I don't see parents lined up here or their kids. I don't see a lot of people who care about this issue who are impacted by this health issue every day, hearing about this hearing, knowing about it, being available to come out of work on a work day at 1:00 p.m. to come down here to testify.

So I think there's a lack of outreach. I know some states, environmental agencies, make a point about this being a matter of environmental justice and that involving enhanced public participation, which means the agency doing a little bit more work to let the public know about something and to make sure if they're able to come. For instance, having hearings in the evening.

So I would suggest that that happen for this issue; that you have another hearing where the public is better notified and understanding how what sounds like a very technical discussion impacts their everyday life and their family members who suffer from asthma in this city.

I'd like to request that MDE do what they said they would with this rule. I remember Tad Aburn having

told me at one of the Air Quality Citizens Advisory Council, I think it's called, meetings back on March 12th of last year, that this specific rule was designed with the fact in mind that Baltimore City is interested in having stricter emissions limits for nitrogen oxides emitted from waste incinerators, and that the rule is specifically designed to not preempt the city from doing anything of that sort.

And I have not seen this rule until today. I was actually just looking in the Maryland Register this past week to try to find this rule. And maybe it was my failure to look hard enough, but I didn't see this rule. And I'll accept my own blame for that but also point out that Maryland Registers aren't archived past a certain number of months on the website. They disappear and then you have to pay to get access to the old ones, which is absurd. Most states leave them online and searchable.

So in that rule, though, what I was able to look up right now, I did not see anything reflecting MDE's intention to be clear that as state law currently states, which you may know is a matter of legal

contention right now, that local governments can have their own air pollution standards that are as strict or stricter than the state and federal minimums. That's already a matter of state law. This regulation needs to be very clear in affirming what the state law currently says and that there's no preemptive effect that would impact Baltimore's ability or Montgomery County's ability to regulate incinerators more strictly if they choose to do so, as Baltimore has chosen.

I was also in this -- well, maybe it was that room. They were combined at the time -- for one of those advisory committee meetings where the issue came up about Baltimore having passed a resolution. They passed two resolutions unanimously asking the state to have stricter limits for nitrogen oxides from trash incinerators.

At one of those meetings when it was being talked about the second one, which explicitly asked the state not to just stop at 150 parts per million but to have a limit of 45 parts per million, which is what this agency is already permitted to new incinerators in the state, neither of which were built but one in Baltimore,

one in Frederick County, to have that limit of 45 parts per million.

This is the limit that's already in effect at a new incinerator in Florida as well. And the city has asked that MDE actually set a limit as protective as what new incinerators have to meet.

This agency and the committee did not even seem to be aware of that resolution at the time this regulation was being developed. So I'd like to know what the process was, when did the agency know about that resolution being passed; why was that information not shared with the advisory committee on that topic in a timely manner so that the agency can be advised on whether a stricter standard like 45 was actually appropriate in a place like Baltimore where they're actually asking for it, which state law grants them the power to ask the agency to do.

Some context that Baltimore has some of the most dangerous air to breathe in the country. In 2005, actually it was worse then because we had some more things operating. But MIT researchers found that

Baltimore had the deadliest air in the whole country.

According to EPA in 2014, Baltimore was 81st out of all -- over 9,000 actually local city areas in the country; was 81st in terms of being the most polluted air in the country.

Just last year the Asthma and Allergy Foundation ranked Baltimore as the 33rd worst asthma capital in the nation. And Baltimore City Health Department pointed out to City Council in multiple testimonies that they've done on resolutions and laws on this topic, they pointed out in one of them that the State Department of Health and Mental Hygiene reports that 12.4 percent of Baltimore City adults have asthma, which was four points higher than the state-wide average, and that one in five children under the age of 18 in Baltimore City suffer from asthma, which is double the national average.

This is apparently based on the same report that that state agency put out that discusses health disparities showing that black and African-American residents have five times the rate of hospitalization due

to asthma as white residents do in the same city.

Now, Wheelabrator Baltimore, according to EPA's latest data, the 2017 National Emission Inventory data that just came out, and it shows that Wheelabrator was responsible for a whopping 58 percent of all the nitrogen oxide emissions from industry in the city. And some will counter and say, oh, what about all the cars? Cars emit nitrogen oxides; they're a big issue.

Well, when we compare it to cars with the latest data available for that, we find that they're so significant that they're equal to half the cars or half the trucks on the roads of Baltimore.

So to have a regulation that takes them from 166 parts per million down to 145 or 150, which would still leave them being the largest industrial air polluter of nitrogen oxides in this city by far, does not go far enough.

It will require that they spend only 0.2 percent of their annual income complying with your regulations. So I'm not surprised when I just heard you say, Mr. Waheed, that this regulation would have no

economic impact as you just put it.

If a regulation has no economic impact on the biggest air polluter in this city, driving up asthma rates as it is, a very serious issue in this city, that tells you that this is not going far enough. There's a huge economic impact already. And it's on all the students who miss school, all the federal funding of schools that is missed because federal funding is tied to school attendance, and asthma is the leading cause for students missing school. And also a lot of people missing work, too. There's a huge economic impact that happens to this city and this region from the pollution from this incinerator, which is only marginally being required to be reduced.

Now, Virginia, in the same process, just set a limit of 90 to 110 parts per million for their two Covanta trash incinerators in Northern Virginia. That's still not 45 parts per million, but these are existing facilities and they still held them to that standard recently, a standard that's already being met by the one in Montgomery County.

There's no excuse for MDE not at least going that far and requiring Wheelabrator Baltimore to meet the standards that the other facility in a wealthy, white, rural part of Montgomery County has already been meeting for several years.

And I'll just end with the fact that as a federally funded agency, you are subject to the Civil Rights Act of 1964. Title VI of that act requires that you do not take any actions that have a discriminatory racial impact.

This regulation, knowing that residents of Baltimore are going to continue to suffer disproportionately, black residents within the city worse than white residents, and residents in this area worse than residents in Montgomery County.

This is a discriminatory regulation by not protecting Baltimore residents as much as Montgomery County residents have already been protected for about a decade, or as much as Northern Virginia communities are going to be protected.

And as a recipient of federal funds, you are

required to look at the environmental justice impacts of this, the impacts by a race on residents, and if we had an EPA that actually enforced the Civil Rights Act, you would be at risk of losing federal funding in this state if you didn't comply.

It doesn't need to be intentional discrimination to be a violation of the Civil Rights Act. All it requires you to do is to not look at the impacts by race and you are in violation of the Civil Rights Act.

I encourage you to pull this rule back to look at that and figure out what you can do to make this rule as protective as it needs to be to make sure that Baltimore residents aren't disproportionately harmed. Thank you.

MS. SARROS: Thank you, Mr. -- how do you say your name? Ewall?

MR. EWALL: Ewall (pronouncing).

MS. SARROS: Ewall, thank you. Are there any other comments? Oh, yeah, please.

MR. SELDMAN: Hi. My name is Neil Seldman. I work for the Institute for Local Self-Reliance in

Washington, D.C. But I'm here at the request of United Workers of Baltimore. I'm an advisor to them as they are preparing the zero waste plan for the City of Baltimore, working with a number of groups in the city.

And my question on this new proposed rule is how can citizens be reassured that the deliberations that led to the announcement of this rule, how can we be sure that the MDE has been aware of the information that Mr. Ewall just presented?

And if the record shows that they are not aware of that information, it says to me ipso facto that we need a new hearing and we need a new meeting to deliberate to answer the questions why is MDE telling Baltimore it should live with 145 to 150 emissions -- parts per million emissions when other communities nearby are coming in less than that. And we know that there's a state-of-the-art plant in Florida that is meeting the 45 parts per million.

So do I ask you that question? Do I ask the director of MDE? Can there be a review of what knowledge was known and not known when this recommendation was

made?

MS. SARROS: Thank you. Are there any other comments?

(No response.)

MS. SARROS: Let the record show that all verbal hearing comments have been received. The close of the comment period is 5:00 p.m. today, as indicated in the public hearing notice.

The Department will consider all comments before making a decision to adopt the new regulation and amendments. Thank you for your participation.

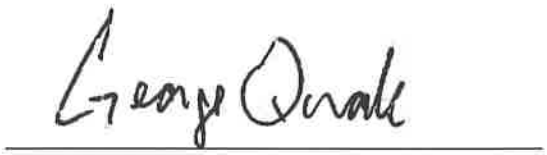
This will conclude the public hearing regarding the proposed action to adopt amendments to regulations .01 and .10 under COMAR 26.11.08 - Control of Incinerators.

Let the record reflect that it is now 1:44 p.m. and this hearing is officially concluded.

(Whereupon, the hearing was concluded at 1:44 p.m.)

CERTIFICATE OF COURT REPORTER

I, George L. Quade, do hereby certify that the foregoing transcription was reduced to typewriting via audiotapes recorded by me; that I am neither counsel for, nor related to, nor employed by any of the parties to the case in which these proceedings were transcribed; that I am not a relative or employee of any attorney or counsel employed by the parties hereto, nor financially or otherwise interested in the outcome of the action.



GEORGE L. QUADE, CERT

Court Reporter

SECTION 15 – Comments

MWC

MARYLAND DEPARTMENT OF THE ENVIRONMENT
AIR AND RADIATION ADMINISTRATION
PUBLIC HEARING CONCERNING REGULATION/AMENDMENT
Amend regulations .01 and .10 under COMAR 26.11.08 - Control of Incinerators
October 29, 2019

This Notice is provided pursuant to § 4-501 of the General Provisions Article of the Maryland Code. The personal information requested on this sign-in sheet is intended to be used to contact you concerning further information about the subject of this public hearing or meeting. Failure to provide the information requested may result in you not receiving further information. You have the right to inspect, amend, or correct this sign-in sheet. The Maryland Department of the Environment ("MDE") is a public agency and subject to the Maryland Public Information Act. This form may be made available on the Internet via MDE's website and subject to inspection or copying, in whole or in part, by the public and other governmental agencies, if not protected by federal or State law.

Name (please print)	Signature	Organization or Affiliation	E-mail Address/Phone Number	Do You Wish To Testify?
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Chris Skaggs		NMWDA	cskaggs@nmwda.org	NO
Jamila Alfred				
Zeki Kelton		EJN	zekikelton@gmail.com	
Mike Ewall		Energy Justice Network	mike@energyjustice.net 215-436-9511	Y
Neil Seldman		Inst. for Local Self-Reliance	NS Seldman@ILSR.org 2028981610 x5210	

National President and CEO
Harold P. Wimmer

October 29, 2019

Mr. Randy Mosier
Chief of the Regulation Division
Air and Radiation Administration
Maryland Department of the Environment
1800 Washington Boulevard, Suite 730
Baltimore, MD 21230-1720
Sent via email to randy.mosier@maryland.gov

Re: Proposed amendments to 1) Regulations .01 and .10 under **COMAR 26.11.08 Control of Incinerators** and 2) Regulation .04 under **COMAR 26.11.17 Nonattainment Provisions for Major New Sources and Major Modifications**.

Dear Mr. Mosier:

The American Lung Association in Maryland wishes to provide comments on two separate proposals under Subtitle 11 Air Quality that the Department of Environment published September 27, 2019.

More than 578,000 Marylanders, including more than 130,000 children, have asthma. The quality of the air affects their health in multiple ways. The Lung Association in Maryland supports strong work that the Department continues to do to help the hundreds of thousands of people with lung disease in Maryland to breath easier.

The actions proposed affect some critical emissions that are harmful in and of themselves, but are also precursors to other pollutants, especially ozone and particulate matter.

These pollutants pose serious threats to Marylanders' health
Nitrogen oxides (NOx) cause a range of harmful effects on the lungs, including increased inflammation of the airways; worsened cough and wheezing; reduced lung function; increased asthma attacks; and greater likelihood of emergency department and hospital admissions.[1] Growing

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research warns that nitrogen dioxide (NO_2) is likely to be a cause of asthma in children. Looking beyond the lungs, newer research has linked NO_2 to cardiovascular harm, lower birth weight in newborns and increased risk of premature death.[2]

Nitrogen oxides also form particulate matter in the atmosphere. Particulate matter causes cardiovascular harm, lung cancer and premature deaths, among many other harmful health effects.[3]

Volatile organic compounds (VOCs) are key ingredients in the formation of harmful ozone, but they are independently harmful as well. Breathing VOCs can irritate the eyes, nose and throat, can cause difficulty breathing and nausea, and can damage the central nervous system as well as other organs. Some VOCs can cause cancer, such as benzene. Not all VOCs have all these health effects, though many have several.[4]

Ozone results from the reaction of nitrogen oxides and VOCs in the atmosphere. Ozone causes immediate breathing problems including shortness of breath, wheezing, coughing and asthma attacks. Newer evidence has linked ozone to harm to cardiovascular harm and premature death.[5]

The people of Maryland will benefit from having less of these emissions in the air they breathe.

Comments re: the 26.11.08 –Control of Incinerators
The Lung Association supports the State's proposal to update the startup, shut down, and maintenance requirements for the two large municipal waste incinerators currently operating in the state. While the Lung Association does not support the burning of waste debris, these facilities currently exist and need better control measures in place. Maryland needs to take all possible steps to reduce the impact their emissions have, especially on the neighboring communities.

The Lung Association supports limiting the time allowed for warm-up periods during start-up and shut-down processes. However, we would recommend requiring NOx Maximum Achievable Control Technology (MACT) standards to be met during those periods, rather than the proposed Reasonably Achievable Control Technology (RACT) standards. Meeting MACT limits would further reduce the burden on the health of people living near and downwind from the plants. We support stronger efforts to monitor compliance through improved quarterly reporting and flagging exceedances.

Comments re: the 26.11.17—Nonattainment Provisions for Major New Sources and Major Modifications.
The Lung Association supports Maryland's efforts to reduce emissions that form ozone and the transport of ozone and its precursors in the Mid-Atlantic and Northeast regions. The Lung Association supports the formal extension of New Source Review requirements throughout the state. However, we encourage Maryland to seek better ways to strengthen enforceable pollution

reduction obligations for all facilities, rather than to allow emissions trading for NOx and VOC emissions. These pollutants not only contribute to ozone, they impact the communities nearest to the sources themselves. Too often, this especially burdens those low income and minority communities where their health is often at greater risk.

In conclusion, we appreciate the opportunity to support and encourage measures that will reduce the emissions that harm the health of the millions of Marylanders.

Sincerely,

Aleks Casper
Director of Advocacy, MD, VA, DE, DC
American Lung Association

[1] U.S. Environmental Protection Agency. *Integrated Science Assessment for Oxides of Nitrogen -- Health Criteria*. EPA/600/R-15/068. January 2016.
[2] U.S. EPA, 2016.
[3] U.S. EPA, *Integrated Science Assessment for Particulate Matter*, EPA 600/R-08/139F. December 2009.
[4] Information on specific VOCs can be found at the Agency for Toxic Substances & Disease Registry.
[5] U.S. EPA, *Integrated Science Assessment for Ozone and Related Photochemical Oxidants*. EPA/600/R-10/076F. February 2013.

SECTION 16 – Response to Comments

DEPARTMENT OF THE ENVIRONMENT
AIR AND RADIATION ADMINISTRATION

Response to Comments

On the Proposed Amendments to
Regulations .01 and .10 under COMAR 26.11.08 – Control of Incinerators
Public Hearing Held in Baltimore, MD
October 29, 2019

Purpose of Hearing: The purpose of the public hearing was to allow for public comment on the Maryland Department of the Environment's (the Department or MDE) proposal regarding amendments to Regulations .01 and .10 under COMAR 26.11.08 – Control of Incinerators.

The proposed action amends nitrogen oxide (NOx) reasonable available control technology (RACT) requirements under COMAR 26.11.08.01 and COMAR 26.11.08.10 for large municipal waste combustors (Large MWCs). In order to satisfy the Environmental Protection Agency's (EPA) updated startup, shutdown and malfunction (SSM) policy (80 Fed. Reg. 33840), this action extends NOx emission limits to cover periods when a Large MWC is combusting only fossil fuels, as a means to warm-up the furnace and other critical components prior to municipal solid waste being fed to the combustor. This action includes additional amendments to clarify how the 24-hour block average emission rates and 30-day rolling average emission rates are to be calculated.

This proposed action concerning Large MWCs is required by the EPA before the EPA can approve the Large MWC regulations that the Department adopted on December 6, 2018, for inclusion in Maryland's State Implementation Plan (SIP). On December 6, 2018, MDE adopted updates to NOx RACT for Large MWCs with a capacity greater than 250 tons per day. That action established new NOx RACT standards and requirements for Large MWCs at all times when burning municipal waste. This proposed action does not change the emission standards for Large MWCs when they are burning municipal waste.

Date and Location: The public hearing was held on October 29, 2019, at 1 p.m. at the Department of the Environment, 1800 Washington Boulevard, 1st Floor Terra Conference Room, Baltimore, Maryland 21230.

Attendance: 6 attendees: Randy Mosier, Carolyn Jones, and Molla Sarros of MDE and the attendees listed in Attachment A – MWC Warm-up NOx RACT Hearing Sign-In Sheet.

Statement: The Department's statement was read by Mr. Husain Waheed, Senior Regulatory and Compliance Engineer of the Regulations Development Division of the Air and Radiation Administration, Department of the Environment.

Comments and Responses: Comments were received from the American Lung Association, Energy Justice Network and Institute for Local Self-Reliance/United Workers of Baltimore.

A summary of the comments received and the Department's responses to the comments are below.

1. **COMMENT:**
   A commenter supports the State's proposal to update the startup, shut down, and maintenance requirements for Maryland's Large MWCs. While the commenter does not support the burning of waste debris, these facilities currently exist and need better control measures in place. Maryland

needs to take all possible steps to reduce the impact their emissions have, especially on the neighboring communities.

The commenter supports limiting the time allowed for warm-up periods during start-up and shut-down processes. However, the commenter recommends requiring NOx Maximum Achievable Control Technology (MACT) standards to be met during those periods, rather than the proposed Reasonably Achievable Control Technology (RACT) standards. The commenter also supports stronger efforts to monitor compliance through improved quarterly reporting and flagging exceedances.

RESPONSE:
MDE ARA appreciates the comments and agrees that existing Large MWCs in Maryland need to operate their pollution control measures in an optimal manner to ensure that emissions of pollution are minimized to the greatest extent possible. Additional compliance measures and reporting requirements further ensure that the facilities are operating as prescribed.

The purpose of these amendments and the regulations adopted on December 6, 2018, is to establish new NOx RACT emissions rates that apply during all operating conditions. Under Section 182 of the CAA, 42 U.S.C. §7511a, sources in ozone nonattainment areas classified as moderate and above are subject to a NOx RACT requirement. Because the EPA designated the Baltimore area as moderate nonattainment under the 2008 ozone national ambient air quality standards (NAAQS), the CAA requires MDE to review and revise NOx RACT requirements in the Maryland State Implementation Plan (SIP) as necessary to achieve compliance with the NAAQS. EPA defines RACT as "the lowest emissions limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility" (44 FR 53761 and 53762, September 17, 1979). In reviewing existing NOx RACT requirements for adequacy, the Department considers technological advances, the stringency of the revised ozone standard and whether new sources subject to RACT requirements are present in the nonattainment area. The Department must examine existing controls on major sources of NOx to determine whether additional controls are economical and technically feasible, and include any such controls in Maryland's RACT SIP, where appropriate, to be approved by EPA.

While the regulations adopted on December 6, 2018 established RACT emissions limits, they additionally required the Wheelabrator facility to submit to the Department a feasibility analysis regarding additional control of NOx emissions at the facility. This feasibility analysis is required by no later than January 1, 2020. Specifically, the adopted regulation under COMAR 26.11.08.10E(1)(b) requires: "*A written narrative and schematics detailing various state-of-the art NOx control technologies for achieving additional NOx emission reductions from existing MWCs, including technologies capable of achieving NOx emission levels comparable to those for a new source in consideration of the overall facility design at Wheelabrator Baltimore Inc.;*" The Department intends to use that feasibility analysis to determine whether additional regulation of the Wheelabrator facility is appropriate.

2. COMMENT:
A commenter observed that this hearing was lacking in attendance. They stated that every parent with a child with asthma should have been notified about the hearing and they were concerned that the hearing was held at 1 pm on a workday and further stated that there is a lack of outreach. MDE should do more outreach, including for environmental justice. MDE should hold another hearing, particularly in the evening.

RESPONSE:
MDE ARA followed all state and federal procedures for the development of the regulations that MDE adopted on December 6, 2018, and their associated public hearing. The Department has met with stakeholders, including the affected facilities, environmental community, the U.S. Environmental Protection Agency, Baltimore City Council and the general public, on multiple occasions since the summer of 2015. The Department held an extensive stakeholder process over this period of time and has received significant comments throughout this process. Scores of the stakeholders turned out for MDE's September 21, 2018, public hearing concerning these earlier amendments for the incinerators.

As with the associated regulation adopted on December 6, 2018, the Department followed all state and federal procedures for the development of the current regulation that is the subject of this comment. The Department provided its 30-day notice of this hearing to the public in the Maryland Register. MDE ARA posted the 30-day hearing notice on the MDE Web site. The Department emailed the hearing notice regarding these proposed amendments to our stakeholders, including environmental groups and community members. Separately, the Commission on Environmental Justice and Sustainable Communities (CEJSC), which MDE staffs, is working to develop an outreach plan for environmental justice communities.

3. **COMMENT:**
A commenter noted that they had trouble finding this rule in the Maryland Register and that to access the Maryland Register, after a certain time (back issues), one must pay. Other states don't do this; their rules are left online and searchable.

RESPONSE:
In addition to the past three months of issues available from the Maryland Division of State Documents at http://www.dsd.state.md.us/MDR/mdregister.html, the Maryland Register can be accessed from some libraries. This includes some Maryland university general and law libraries during visitor hours as well as some public libraries during regular library hours.
Examples of locations where the public can access older issues of the Maryland Register, in some cases dating as far back as 1974, are available on the MDE Web site, under "Other Related Links" at https://mde.maryland.gov/programs/Regulations/Pages/index.aspx.

4. **COMMENT:**
A commenter stated that in Maryland, local governments can have stricter air quality standards than the state and federal government. They noted that MDE has said that the municipal waste combustor amendments discussed at MDE's Air Quality Control Advisory Committee (AQCAC) in March 2018, were designed with the understanding that Baltimore City is interested in lower emissions from Wheelabrator and said that it is not preempting the city passing stricter legislation. The commenter asked for the regulation to be clear that it does not preempt local government from establishing stricter emission limits.

RESPONSE:
This comment is nonresponsive to the emissions limits which this action seeks to implement. As noted above, this proposed action sets emission limits for warm-up periods before a municipal waste combustor burns municipal waste and does not set new emission limits for when Large MWCs burn municipal waste. Maryland's NOx RACT regulations for Large MWCs were adopted on December 6, 2018. Please see the technical support document (TSD) at https://mde.maryland.gov/programs/Regulations/air/Documents/TSD_COMAR_26_11_08_Control_of_Incinerators08142018.pdf, and the response to comments (RTC) document at

https://mde.maryland.gov/programs/Regulations/air/Documents/RTC_COMAR_26_11_08_10_10292018.pdf.
As noted the current requirements that must be followed by Large MWCs pursuant to State regulation are published at the Maryland Division of State Documents, COMAR online for Title 26 at http://www.dsd.state.md.us/comar/subtitle_chapters/26_Chapters.aspx

5. **COMMENT:**
Multiple commenters stated that the emission limit for Wheelabrator for NOx should be 45 parts per million (ppm) and they inquired as to when MDE knew of the stricter city law (resolution) concerning the 45 ppm limit. They stated that MDE should pull back the 145-150 ppm rule and make it as protective as it needs to be. It is not stringent enough, at 145-150 ppm. They noted that similar facilities in nearby communities, especially the Montgomery County Resource Recovery facility, have more stringent NOx emissions limits than the Wheelabrator facility.

RESPONSE:
This comment is nonresponsive to the emissions limits for warm-up operations at Large MWCs which this action seeks to implement. The emissions limits to which the commenter refers are earlier regulations for Large MWCs that went into effect in Maryland on December 6, 2018. Please see the response to comments and technical support documents for the 2018 regulations here: the technical support document (TSD) at https://mde.maryland.gov/programs/Regulations/air/Documents/TSD_COMAR_26_11_08_Control_of_Incinerators08142018.pdf, and the response to comments (RTC) document at https://mde.maryland.gov/programs/Regulations/air/Documents/RTC_COMAR_26_11_08_10_10292018.pdf.

6. **COMMENT:**
A commenter cited several studies from 2005-2018 indicating that Baltimore has bad air pollution, elevated asthma rates, and health disparities including elevated rates of hospitalizations due to asthma among black and African-American residents compared with white Baltimore City residents. They also noted that MDE, as a recipient of federal funds, must comply with Title VI of the Civil Rights Act. MDE should pull back this rule and make sure it is as protective as it should be and that Baltimore residents are not disproportionately harmed.

RESPONSE:
The Department refers the commenter to the Large MWC amendments that went into effect in Maryland on December 6, 2018. Please see the technical support document (TSD) at https://mde.maryland.gov/programs/Regulations/air/Documents/TSD_COMAR_26_11_08_Control_of_Incinerators08142018.pdf, and the response to comments (RTC) document at https://mde.maryland.gov/programs/Regulations/air/Documents/RTC_COMAR_26_11_08_10_10292018.pdf. The Department agrees that continuing to reduce air pollution in the State of Maryland, through this rule and many other governmental actions, will provide beneficial human health and environmental outcomes. The Department disagrees that this action, which adds emissions limits for warm-up operations at Large MWCs, contributes to any violation of Title VI of the Civil Rights Act, to the extent one is alleged. The Baltimore area, including Baltimore City, has made significant strides in reducing air pollution over the past 15 years. It is now in attainment of the NAAQS for fine particulate matter, carbon monoxide, nitrogen dioxide, lead, and sulfur dioxide, and it has seen large reductions in hazardous air pollutants such as hydrogen chloride and mercury from state and federal regulations. And the EPA has issued a determination that the Baltimore area has attained the 2008 ozone NAAQS (see 80 Fed. Reg. 30,941, June 1, 2015). Ground-level ozone continues to improve with

the Department's implementation of regulations such as the December 2018 Large MWC amendments and the December 2015 regulations to reduce NOx emissions from coal-fired electric generating units (see COMAR 26.11.38). The Department encourages stakeholders to continue their collaborative efforts with the Department as we proceed with reviewing data and potential future control technologies for Large MWCs and other sources.

The Commission on Environmental Justice and Sustainable Communities, to which MDE provides staff support, is developing an outreach plan centered on low-income communities and communities of color that may be experiencing disproportionate environmental impacts by virtue of their exposure to pollutants. Also, the EPA and the U.S. Department of Transportation (U.S. DOT) have settled an allegation of discrimination involving a decision by the Maryland Public Service Commission to issue an approval for an electric generating station in Brandywine in Prince George's County. As part of the agreement between the EPA and U.S. DOT, the Maryland Public Service Commission, the Maryland Department of Natural Resources, and MDE have committed to improving community engagement and public outreach associated with the review of applications for power plants larger than 70 megawatts (MW) and fired using fossil fuels.

7. **COMMENT:**
A commenter cited 2017 National Emissions Inventory data indicating that Wheelabrator accounts for 58% of NOx emissions, which they cited as being roughly equal to the NOx emissions from half the cars and trucks in Baltimore. Asthma has a huge economic impact from the pollution from this incinerator. The commenter noted that the public hearing statement indicated that the proposed amendments have no economic impact, which means that Wheelabrator is not doing enough. They cited a number of economic impacts from the elevated asthma rates in Baltimore City, such as a lot of people missing days of school and work.

RESPONSE:
The Department refers the commenter to the Large MWC amendments that went into effect in Maryland on December 6, 2018. Economic impact, emission reductions and requirements were detailed in the previously adopted action. Please see the technical support document (TSD) at https://mde.maryland.gov/programs/Regulations/air/Documents/TSD_COMAR_26_11_08_Control_of_Incinerators08142018.pdf, and the response to comments (RTC) document at https://mde.maryland.gov/programs/Regulations/air/Documents/RTC_COMAR_26_11_08_10_10292018.pdf.

The Department's regulation development process included a review of the proposed amendments by the Children's Environmental Health and Protection Advisory Council, which is chaired by the Maryland Department of Health, and an evaluation of impacts on the disabled communities. In addition, proposals of more significant regulations, such as the December 2018 Large MWC amendments, include an assessment of the costs and health and economic benefits of the regulations and the proposed emission reductions. The Department continues to implement regulations that improve air quality and, in doing so, reduce the health costs of air pollution.