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Department of
the Environment

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 NO_x 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**

NO_x 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.**



Warm-up Period Mass Limits

- The 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
- 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 mode
 - the Wheelabrator Baltimore, Inc. facility shall meet a facility wide NO_x 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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A bright sun is positioned in the upper right quadrant of the image, casting rays across a clear blue sky. Several large, fluffy white cumulus clouds are scattered across the sky, primarily on the left and right sides. The overall scene is bright and clear, suggesting a sunny day.

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 (NO _x)	45 ppmvd - 24 hour block average 40 ppmvd - 12 month rolling average



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Discussion



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