



NTH Consultants, Ltd.

Infrastructure Engineering
and Environmental Services

608 S. Washington Avenue
Lansing, MI 48933
517.484.6900
517.485.8323 Fax

October 19, 2007
NTH Project 16-060556

Mr. John Vial, Sr. Environmental Engineer
MDEQ - Air Quality Division
Permit Section, Thermal Process Unit
P.O. Box 30260
Lansing, MI 48909

RECEIVED

OCT 22 2007

AIR QUALITY DIV.

**RE: Reconsideration of PM₁₀ Limit for Application 25-07
Holland Board of Public Works**

Dear Mr. Vial:

In previous conversations, we have discussed the proposed PM₁₀ limit for the Holland Board of Public Works (HBPW) and whether a limit of 0.015 lb/MMBtu (filterable + condensable) is feasible for the proposed CFB boiler. NTH, HBPW, and Cummins & Barnard have reviewed this limit and received information from possible vendors regarding likely guarantees. In light of recent information, HBPW requests that the PM₁₀ limit of 0.015 lb/MMBtu represent filterable particulate only. Further, HBPW requests a total PM₁₀ limit of 0.035 lb/MMBtu due to concerns associated with EPA Reference Method 202 for determining the condensable fraction.


Method 202 is used to measure the condensable fraction of PM from a coal-fired utility boiler. It uses impingers to capture and cool condensable particulate from the emissions stream. This method can be problematic in that secondary particulate can form in the measurement process resulting in an overstatement of the regulated particulate matter. Examples include oxidation of SO₂ to SO₃ in the impinger, ammonia slip reactions in the impinger to produce ammonium bisulfate (NH₃ → NH₄HSO₄) and absorption of soluble NO_x components¹. To address these problems, the USEPA has established a workgroup and is performing studies to address the inherent problem of artifact formation with Method 202 (i.e., the measurement of sulfates in the impinger solution as a result of chemical reactions). In the meantime, permits are being written to allow adjustments to Method 202, such as use of the "Miniature Acid Condensation System" (EPA/600/3-8/056) to correct sulfate bias from H₂SO₄ emissions, to allow more accurate measurement of condensable particulate matter.

A PM₁₀ limit of 0.035 lb/MMBtu representing both filterable and condensable particulate is more consistent with recent emissions testing results at similarly configured plants that are operating and can be supported with vendor guarantees.

If you have any further questions, please feel free to contact me at (517) 484-6900.

Very truly yours,

NTH Consultants, Ltd.



Jeffrey P. Jaros
Principal Scientist

cc: Mr. David Koster, Holland Board of Public Works
Mr. Steve Yambor, Cummins & Barnard, Inc.
JPJ/mjb

¹ Particulate Emissions – Combustion Source Emissions Dependent of Test Method, Andracsek and Gaige, Burns & McDonnell.