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Why Choose Wet Emission Control Technology

Presented to McIlvaine Hot Topics Hour

November 21, 2013

Steven A. Jaasund, P.E.

this demand.

Fact of Life: The public will continue to demand cleaner and cleaner air and regulators and law makers will accommodate this demand.

Current Examples:

- Boiler MACT rule
- PM 2.5 AAQS
- MATS Rule
- Greenhouse gas rules

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Emission Limits Going Down

Wet ESP Power Off

Wet ESP Power On

Principal Advantages of Wet Emission Controls

- Better condensable collection
- More efficient gas absorption
- Reduced sensitivity to particle and gas stream physical nature and chemistry
- Resistance to fire

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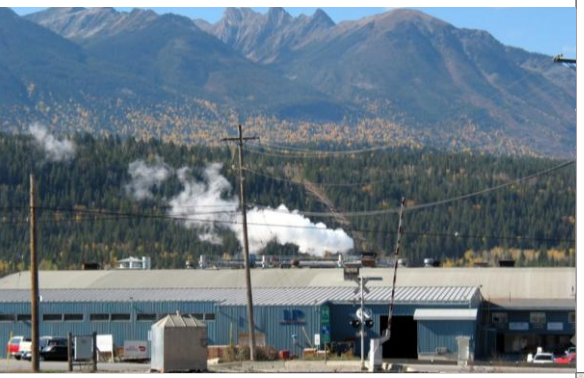
Wet Technology Advantages



Wet ESP Before and After

Condensable Collection

- Wet systems operate at the wet bulb temperature; <175°F
- Condensable are already formed and can be collected as particles
  - $SO_3 \rightarrow H_2SO_4$
  - Organic vapor → liquid droplets
- Sampling artifact formation avoided

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Condensables

Gas Absorption Advantages

- HCl can be collected without sorbents
- SO_2 can be collected at nearly stoichiometric ratios
- Dry sorbent injection technologies normally require 2 to 3 times the stoichiometric ratio of sorbent
- Wet systems produce less waste product

Insensitivity to Properties

Chemical make-up of particles is normally not a factor with wet scrubbers and wet ESPs

Non factors for wet systems

- Dew point
- Resistivity
- Flammability

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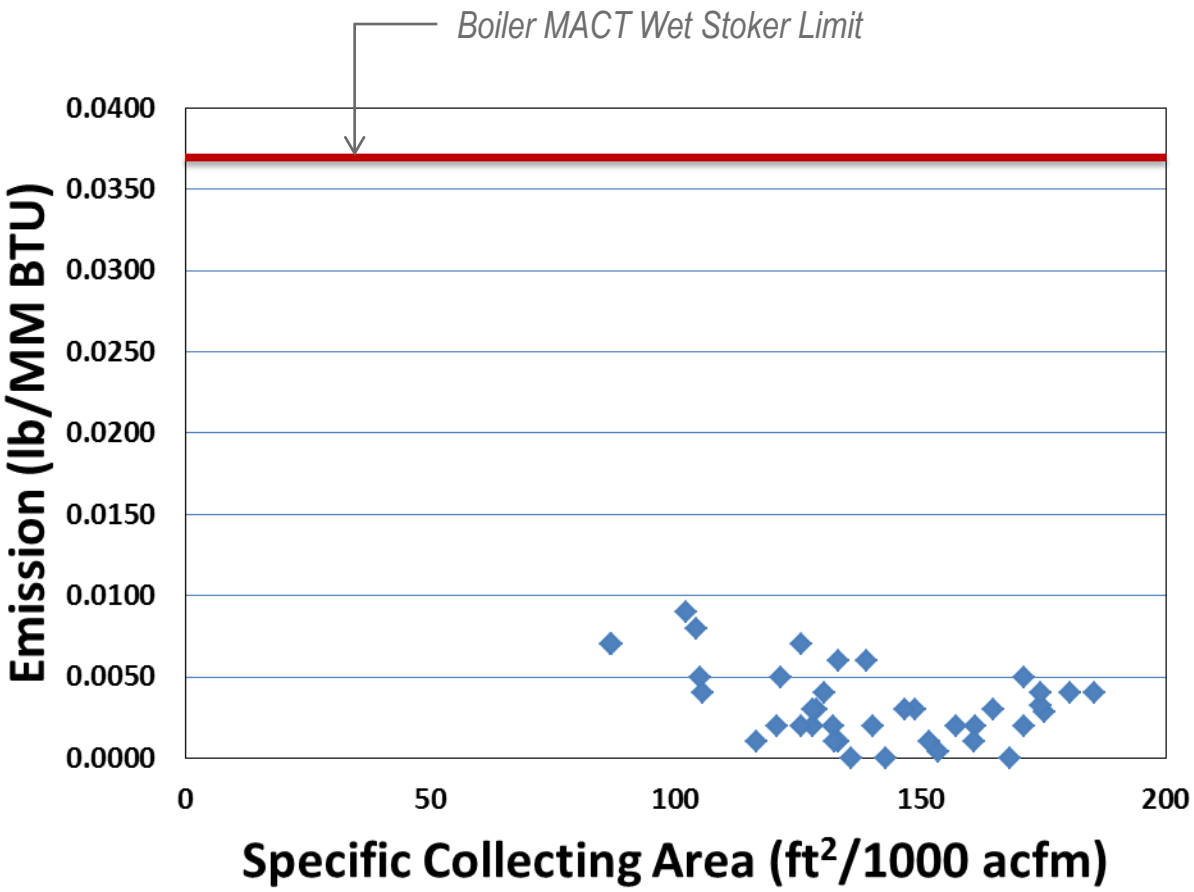
Wet System Applicability

- *First Boiler MACT compliant installation*
- *Biomass stoker boiler also burning mill sludge, waste oil and OCC*

- *46 total tests; 23 on each wet ESP unit*
- *Avg. 0.0032 lb/MM BTU (0.037 limit)*



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Boiler Wet ESP Performance Data

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