State review draft

Region 4 State Commissioners' Visit to US EPA Research Triangle Park Campus

Wednesday, August 30, 2017

US EPA Research Triangle Park Campus
EPA Main Building, Room C114
109 T.W. Alexander Drive
Durham, North Carolina 27709

DRAFT AGENDA

8:00 am **Meet in lobby of EPA Main Building**
Lisa Matthews, Senior Advisor and State Liaison, US EPA Office of Research and Development (ORD)

8:15 am **Welcome and Introductions**
Chris Robbins, US EPA ORD
Anne Heard or Ken Lapierre, US EPA Region 4
Sheila Holman, NC DEQ

8:30 am **EPA RTP Science and Technical Capabilities**
Jennifer Orme-Zavaleta, US EPA ORD

8:50 am **States' Perspectives/Topics of Interest**
- Alabama DEM (not confirmed)
- Georgia DNR (not confirmed)
- Kentucky DEP
- North Carolina DEQ
- South Carolina DHEC
- Tennessee DEC
- Virginia DEQ

10:00 am **Break**

10:15 am **PFAS**
- State perspective (Sheila Holman, NC DEQ)
- EPA research on analytical methods, toxicity & treatment technologies (Tim Buckley)
- Roundtable discussion

11:00 am **Emerging/unregulated DW contaminants and concerns from consumers of public drinking water**
- State perspective (Myra Reece, SC DHEC)
- EPA research (Alice Gilliland)
- Roundtable discussion

11:30 am **Wildfires/Controlled Burns**
- State perspective (Elaine Boyd, TN DEC)
- EPA research (Wayne Cascio)
- Roundtable discussion

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12:00 pm **Working Lunch**
Order in sandwiches

12:30 pm **Algal Blooms**
- State perspective (Sheila Holman, NC DEQ and/or David Paylor, VA DEQ)
- EPA research - early warning systems (Blake Schaeffer)
- Roundtable discussion

1:00 pm **Building and Lab Tour (Meet in lobby of EPA Main Building)**
Kelly Witter

1:00 Walk to High Bay Pointing out Building Highlights
Matt Pait and/or Greg Eades, Office of Administration Resources Management - RTP

1:15 Combustion Research, H106
Tiffany Yelverton, ORD National Risk Management Research Laboratory

1:30 Smog Chamber, H106
Ian Gilmour, ORD National Health and Environmental Effects Research Laboratory

1:45 Homeland Security - Decontamination Technologies Research, COMMANDER Lab
Shawn Ryan, ORD National Homeland Security Research Center

2:05 Transportation Emission Sources, Quick look into High Bay Dynamometer Lab followed by walk & talk to Emissions Lab in E101
Tom Long, ORD National Risk Management Research Laboratory

2:25 pm **Leave High Bay and walk back to C114/Break**

2:45 pm **Roundtable Discussion Sensor Technology**
- State perspective – air (Aaron Keatley, KY DEP)
- EPA research (Gayle Hagler)
- Roundtable discussion

3:15 pm **Recap today's discussion**

3:30 pm **Optional Visit to Village Green bench (Durham Public Library)**
Gayle Hagler, ORD National Exposure Research Laboratory

4:00 pm **Adjourn**

Agenda Topic Descriptions

Building Highlights
EPA in Research Triangle Park is the largest facility ever built by the Agency and that over 2,000 professionals work in these state-of the art facilities that serve as a model for safe, healthy and environmentally-sustainable business operations. The campus includes over 1.2 million square ft. of office, laboratory, computer and conference spaces. Surrounding the buildings are 10 acres of dedicated open space, including woods, meadows, marshes and a lake.

Combustion Research
Because stationary sources are a major contributor to both gaseous and particulate emissions in the U.S., EPA is exploring alternative fuels and pre- and post-combustion control technologies for reducing emissions from stationary sources. The Stationary Diesel Generators Facility, Multipollutant Control Research Facility (MPCRF), and Oxy-Combustion Facility are 3 of the many facilities here in RTP that focus on emissions characterizations from these alternative fuels and combustion processes. Specifically, these facilities focus on co-firing coal and biomass, diesel and alternative fuels, and enhanced combustion in an oxygen-rich environment while characterizing the emissions utilizing a variety of measurement and monitoring technologies that have research, commercial and industrial applications. Developing a better understanding of emissions from alternative fuels and combustion methods and their potential impacts on human health and the environment are critical for informing and supporting Agency actions.

Smog Chamber
EPA scientists are using a photochemical smog chamber to understand the relative toxicity and mutagenicity of complex mixtures of air pollutants at various Air Quality Index (AQI) levels. The research helps us better understand the effects of air pollutant mixtures on health and determine biological pathways that may make some people more sensitive to air pollution.

Decontamination Technologies Research Laboratory
The Decontamination Technologies Research Laboratory (DRTL), part of ORD's National Homeland Security Research Center, is equipped with specialized glove boxes, custom-fabricated spray chambers, and decontamination equipment designed for applied studies on and development of cleanup approaches to chemical, biological or radiological contamination. All on-site work uses surrogates for actual agents, including non-pathogenic spores in the case of anthrax and non-radioactive material for radiological studies. The largest of the specialized chambers within DTRL is the Consequence Management and Decontamination Evaluation Room (COMMANDER), an 800 cubic foot stainless steel room contained within an outer enclosure. COMMANDER is capable of containing non-pathogenic (BSL-2) organisms and gaseous chemicals; it is equipped with a 360 cubic foot airlock with decontamination shower to allow for access during testing while minimizing the potential for confounding cross-contamination in the surrounding lab space. Current efforts in COMMANDER include the assessment of decontamination options and sampling methods for indoor environments, e.g., an office contaminated with anthrax.

Mobile Source Emissions
This laboratory includes a small engine dynamometer, 2 chassis dynamometers (one for light-duty and one for heavy-duty vehicles), and a portable emission measurement system (PEMS) and ORD's state-of-the-art chemistry facility. Research objectives include investigating changes in pollutant emissions due to new vehicle and emissions control technologies, the introduction of alternative fuels and fuel additives, changes in operating conditions, vehicle use cases that are not well represented in certification testing, and newly implemented certification standards. These studies support and improve a host of EPA air quality models used for understanding the contributions that mobile sources make to

air pollution, as well as the scientific foundation the Agency relies on to protect public health and the environment. Chassis dynamometers are used to simulate on-road driving conditions and allow mobile emission factors to be measured in a tightly controlled, repeatable manner representative of every day driving conditions. Because of this precision and repeatability, dynamometers are used to certify and verify emissions of our mobile fleet by EPA's Office of Transportation Air Quality. Portable Emissions Measurement Systems (PEMS) are used to determine vehicle emissions during real-world, on-road operation. PEMS allow the measurement of emissions under conditions in addition to those represented by dynamometer test cycles.