To: Morris, Madeline[morris.madeline@epa.gov]; Hupp, Millan[hupp.millan@epa.gov]
Cc: Thompson, Carmelina[Carmelina.Thompson@p66.com]
From: Reamy, Jeff
Sent: Thur 7/20/2017 5:05:33 PM
Subject: DRAFT AGENDA for Phillips 66 R&D Tour - Bartlesville OK
2017 Tour EPA Administrator Pruitt rev1.docx

Attached is the draft agenda for the Phillips 66 tour of our R&D facility. As we discussed the tour is now scheduled for 1:30 p.m. on Wednesday July 26. We mapped out a 2 hour visit to allow

For a meeting discussion of our activities, along with a physical tour. If you need to adjust time please let me know and we can work with you.

We are excited about the opportunity and look forward to visit.

Jeff Reamy

Vice President, Government Affairs

Phillips 66

202-416-4583

Phillips 66 R&D Discussion/Tour with EPA Administrator Scott Pruitt

Wednesday, July 26th

		PRESENTER	LOCATION	TIME (MIN)
PART 1: Meeting and Discussion (1:30 p.m-2:30 p.m.)				
1.	**Phillips 66 Research Center (*) Safety & Site**	**Merl Lindstrom VP, Technology**	**262 RF**	**10**
2.	**Research Program Overview**			

In support of our corporate mission of providing energy and improving lives, R&D conducts research for four purposes.

- *Use sound science to support future environmental regulations.*
- *Develop / identify cost effective solutions for compliance with current air/water/fuel regulations.*
- *Optimize operations in refining and mid-stream to increase safety, reliability, performance and commercial agility.*
- *Develop / evaluate new lines of business to provide commercially viable alternative energy solutions that meet future regulatory requirements and societal demands and provides new business opportunities for Phillips 66.*

a) Biofuels / Cellulosic **10**

Review research results and commercial viability of biofuels from a variety of feedstock including animal, vegetable/oil seed and cellulosic materials.

b) Environmental **15**

- Basic research to support rule making process

  Water and air research to extend current understanding of chemical, biological and environmental mechanisms leading to particulate matter formation from volatile organic compounds; the role of background ozone in Ozone NAAQS; nutrient impact on algae growth and water aerosols leading to particulate matter.

- Water

  Research that enables reductions in water use, use of lower-quality water, and compliance with present and future discharge regulations including heavy metal levels and nutrients.

- Air

  Extending the understanding of origin, transport and transformation of VOCs, particulate matter, and ozone by utilizing experimental and modeling techniques.

c) Alternative Energy

- Organic Photovoltaics (OPV)
  Development of OPV technology based on environmentally friendly, carbon-derived polymers. Properties of OPVs are being improved through the design, synthesis and testing of advanced polymers with high thermal stability and photon efficiency.

- Solid Oxide Fuel Cells (SOFC)
  Development of solid oxide fuel cell technology for production of electrical power directly from natural gas. Research focuses on improving materials, fuel cell performance, and stack design for longer lifetime and lower cost.

- Energy Storage
  Energy storage is, at its core, capturing usable energy at one point in time for use at another time, particularly when it is needed most and/or more valuable. Unlike any other asset on the grid, energy storage can play multiple roles, acting as both load (consumer) and capacity (generator) depending on whether it is absorbing excess generation or feeding back into the grid. Storage technologies based on batteries (particularly Lithium Ion) are growing rapidly, offering a greater degree of flexibility, especially related to incorporation of greater amounts of renewable electricity into the power mix.

d) Refining and fuels optimization 10

How Phillips 66 Technology leverages its legacy, world class facilities and people to optimize refining and fuels production for improved cost and efficiency as well as anticipating the types of fuels needed in the future.

Optional Additional Topics (10 minutes each)

1. Octane for CAFÉ improvements
   In order to achieve higher fuel economy, new engine designs need higher octane. Phillips 66 is doing research to meet this greater octane need.

2. Ethanol blend models (octane boost/vapor pressure)
   Blending ethanol into hydrocarbon fuels is not straight forward. There are ways to maximize the boost in octane from ethanol and minimize the increase in vapor pressure.

3. Enable maximum shale crude processing
   Shale crudes are lighter in API compared to our historical crude diet and highly variable. Phillips 66 Technology is developing options to increase our flexibility to maximize shale crude use when economically viable.

PART 2: Facility Site Tour (2:30 p.m. – 3:30 p.m.)

1. Environmental
   a) Water ProgramDavid Ingram PL327 15
   b) Air ProgramSourabh Pansare PL341 15

2. Alternative Energy
   a) Organic Photovoltaics
      Kathy Woody CPL 128 15
   b) Solid Oxide Fuel Cells
      Randy Heald CPL137 15

(*) Phillips Research Center is a Chemical Facility Anti-Terrorism Standards (CFATS) facility