Activities leading up to the EPA Consent Agreement

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Timeline

- 2000 – EPA commissions the National Academy of Science (NAS) to conduct a rigorous review of air emission factors as related to current animal feeding and production systems in the U.S.
  - An final report would be issued by late 2002

NAS Task

- Review and evaluate the scientific basis for estimating emissions
  - PM, VOC, H_2S, NH_3, odor, CH_4, N_2O
- Identify critical short- and long-term research needs
- Provide recommendations on the most promising science-based methodologic and modeling approaches

NAS Findings

January 2003

- Proposed EPA regulations aimed at improving water quality may affect rates and distribution of air emissions from AFOs.

NAS Findings

- In order to understand health and environmental impacts on a variety of spatial scales, estimates of air emissions from AFOS *at the individual farm level* and their dependence on management practices, are needed to characterize the annual emission inventories for some pollutants and transient downwind and spatial distributions and concentrations for others.

NAS Findings

- Direct measurements of air emissions at all AFOs are not feasible. Nevertheless, measurements on a *statistically representative subset of AFOs* are needed and will require additional resources to conduct.

NAS Findings

- Characterizing feeding operations in terms of their components (e.g., model farms) may be a plausible approach for developing estimates of air emissions from individual farms or regions as long as the components or factors chosen to characterize the feeding operations are appropriate. The method may not be useful in estimating acute health effects, which normally depend on human exposure to some concentration of toxic or infectious substance for short periods of time.

NAS Findings

- Reasonably accurate estimates of air emissions from AFOs at the individual farm level require defined relationships between air emissions and various factors. Depending on the character of the AFOs in question, these factors may include animal types, nutrient inputs, manure handling practices, output of animal products, management of feeding operations, confinement conditions, physical characteristics of the site, climate, and weather conditions.

NAS Findings

- The model farm construct as described by EPA (2001) can not be supported because of weaknesses in the data needed to implement it.

NAS Findings

- The model farm construct used by EPA (2001) cannot be supported for estimating either the annual amounts or the temporal distributions of air emissions on an individual farm, subregional, or regional basis because the way in which it characterizes feeding operations is inadequate.

NAS Findings

- A process-based model farm approach that incorporates “mass balance” constraints for some of the emitted substances of concern, in conjunction with estimated emission factors for other substances, may be a useful alternative to the model farm construct defined by EPA (2001).

Timeline

- 2003 – EPA and C&M CapitoLink begin discussions on how to address the NAS report

Timeline

- November 2003 – EPA, NRCS, C&M CapitoLink, and a panel of scientists and industry representatives meet
  - Day 1: Brainstorming about onsite monitoring protocol, including methods and types of facilities to monitor
  - Day 2: A plan is proposed for the monitoring protocol and structure of the organization to oversee use of industry funds

Timeline

- Nov 2003 – Mar 2004: Continued conference calls to discuss proposed plan and finalize details
- Mar 2004 – Nov 2004: EPA and C&M CapitoLink continue to promote the agreement and garner industry support

Timeline

- November 2004: Elections
- January 31, 2005: The Air Consent Agreement is posted in the Federal Register

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