September 21, 2009

Comments on SAB Report, *Reactive Nitrogen in the United States; An Analysis of Inputs, Flows, Consequences and Management Options*

General Comments:

1) There are many recommendations made in this document. It would be helpful to further tier them somehow because it is unclear which recommendations (other than the near term targets) are considered to be the most critical or which are the highest priority.
2) The Report refers to permittees as "firms." This is not a term that is used when talking about a permitted entity or discharger under the NPDES Program. Throughout the document when referring to an entity discharging wastewater into a water body, the entity should be referred to as a discharger, permittee, or permitted entity.
3) It would be helpful if the Table of Acronyms was moved to the front of the document instead of in Appendix 2B. Putting this type of information up front is easier for the reader.
4) The SAB should be consistent with the rules of uses for Acronyms. Sometimes the acronyms are spelled out and sometimes they are not. . Options include:
    a. To spell out the acronym the first time is mentioned in the entire document and thereafter as an acronym
    b. to spell out the acronym again the first time it appears within a chapter
5) In respect to Concentrated Animal Feeding operations and the NPDES permitting program, the report does not address the fact that there are current NPDES requirements for CAFOs that are discharging or proposing to discharge, and part of these requirements include having and implementing a nutrient management plan (NMP), which specifies best management practices in regards to manure management to limit the transport of nutrients. In the NMP, rates of application are determined based on site specific conditions such as soil test results and number of fields available for land applications. This could be discussed on page 61, Finding 6 of the SAB Report.
6) The entire section "Water Quality Permit Trading" is inconsistent with the way the Agency discusses Water Quality Trading in its Policy and Guidance. We will provide detailed comments about correcting these inconsistencies and clarifying the discussion. Specific Comments are below.
7) The Executive Summary, Document and Appendix 3, of the Report make numerous recommendations for EPA and other Agencies to consider. It appears that there are 3 categories of recommendations:
    a. 3 Overarching Recommendations in which 5 Activities should be done
    b. Four recommendations that set near and far term targets to decrease the amount of Nr entering the environment
    c. Specific Findings and recommendations.

    Comment 1: How do these different recommendations fit together? Are there some Findings and Recommendations that fit into the 3 overarching recommendations?
    Comment 2: How do the near and far term goals fit in to all of the other recommendations?
    Comment 3: Is it possible for the Report to rank the recommendations? For example, which are the most critical for EPA to do first and which are the ones that we can get the most value out of quickly ("most bang for the buck.")

Comment 4: Of the 4 recommendations that set near and far term goals, #2 and #3 seem to be very repetitive. Can the language be clarified to better distinguish how these recommendations are different.

Specific comments:

Pg. 9 Line 7 "…about 20% from fossil fuel sources, and about 15% form industrial sources (Figure 1)."

Comment [DMS1]: Are you including Municipal facilities in this? If so, please say "Municipal and Industrial source". If not, where are you accounting for the municipal sources in these %?

Pg. 9 22- 41. For clarity purposes it may be better to move Figure 2 before Line 22 on Pg. 9 instead of locating it on Pg. 10

Pg. 15 Lines 28 – 38, Pg. 16 lines 1 -32 and Pg. 17 lines 1-4: This section is confusing because the Bullets are not numbered to immediately indicate that they correspond with the 5 things that the INC proposes. I recommend reformatting the document as follows:

" These intra- and inter-agency Nr-Management Task Forces should take a systems approach to research, monitoring, and evaluation to inform public policy related to Nr management. The INC proposes that this be done by:

1) *Development of methods to help implement a systems approach*
   - *developing and evaluating proposed Nr budgets*
   - *developing appropriate life cycle accounting methods*
   - *developing monitoring as the basis for informed policies, regulations, and incentive frameworks for addressing excess Nr loads*
   - *evaluating the critical loads approach to air and water quality management*
   - *developing Nr indicators for excess Nr effects on economic damage, human health and environment*
   - *developing new systems-based approaches for controlling Nr releases to the environment*

2) *Enhancing ecosystem services that lead to the denitrification of Nr in the landscape including reconnecting rivers and streams to their floodplain, creating and restoring wetlands in agricultural landscapes, and enlarging the surface area of streams and ditches to enhance their potential denitrification.*

3) *Best management practices (BMPs)*
   - *developing the scientific understanding required for identifying best management practices (BMPs) for specific application, including:*
     - *Nr applications in agriculture to ensure adequate food, feed, fiber, and bioenergy feedstock supply while also avoiding negative impacts on the environment and human health;*
     - *Nr applications for developed (e.g., residential and commercial) runoff mitigation and landscape maintenance;*
     - *planning and pollution prevention including low impact development and natural ecosystem service preservation;*

- *enhancing the appropriate matching of crops, cropping systems, and land types and capabilities for the most productive use of Nr and the reduction of excess Nr*
- *development and natural ecosystem service preservation;*
- *primary use of natural land features and attributes, such as wetland preservation and enhancement, natural soil profiles and buffer strips;*
- *improved removal of Nr from sewage waste streams at both large-scale wastewater treatment facilities and individual subsurface (septic) systems*

- *establishing proactive extension and technology transfer approaches to facilitate adoption of BMPs*

4) *Assessment activities:*
   - *assessing combined carbon (C) and Nr effects on terrestrial and aquatic ecosystems*
   - *assessing indicators/endpoints, costs, benefits and risks associated with impairment of human health and decline and restoration of ecosystem services*
   - *reviewing existing and proposed legislation for purposes of extending Nr regulatory*

5) *Developing new education, outreach, and communication initiatives."*

Comment [DMS2]: Is there more to this? Can you add a description about what this would entail?

Page 15: It may be helpful to have a suggested working relationship between the inter- and intra- agency task forces that are recommended in Recommendations B and C.

Pg. 19, line 12. The document refers to Nr, but has not yet informed the reader what Nr is. Please spell it out this first time it's mentioned. *"Over evolutionary history, only a limited number of species of bacteria and archaea have evolved the ability to convert N_2 to Reactive Nitrogen (Nr) via biological N fixation"*.

Pg. 39 Line 13, N fertilizer uptake efficiency has already been defined in the document with the acronym (NFUE), you can simply refer to it here as NFUE.

Page 45:
Suggest revision below:
Recommendation 3: The committee recommends that EPA help ensure that the uncertainty in estimates of nitrous oxide emissions from crop agriculture be greatly reduced through the conduct of EPA research and through coordination of research efforts more generally with other agencies such as USDA, DOE, NSF and with research conducted at universities

Page 57:
Recommendation 7a: what about engaging state (e.g., state departments of agriculture) and local/municipal governments (not just the extensions)?

Recommendation 7b could be clarified. Will outreach and education efforts be targeted to the public-at-large or to industry/stakeholder groups?

Page 73:

The term “urban forests” seems to be undefined in the text. It would be helpful to include a definition.

Page 97:
The last sentence in Recommendation 14d could be expanded or broken out into its own discussion point. As it is currently written, there is not a clear linkage drawn between the BMP research and the construction of the decision framework and the management goals. Specifically, what is the decision framework intended to determine- is it geared towards determining which BMPs are most effective and should be implemented?

Page 98:
Finding 15: This point could probably be strengthened by describing the gaps in “current federal law” in a bit more detail.

Page 125: Text Box 4:
Comment 1: The last paragraph seems odd. Why are we suddenly linking back to air trading? There has been no discussion of air trading. I recommend simply “Some barriers to effective water quality trading systems are …”
Comment 2: While the outline of "new market-based strategies" and the associated Table 24 are useful, clarification on how these various approaches can be applied would be useful. Further, the chart could be made more understandable with clearer descriptions in the text boxes. Finally, the explanation of the chart would be better placed as a footnote below the chart, rather than on the next page.

Page 128 Lines 7 -9: “1. Command-and-Control—in which an entity’s “right to pollute” is recognized through a series of permitted limitations on emissions, violations of which may result in penalties being assessed.

Comment [DMS3]: The definition of “command and Control is: Specific guidelines, prescribed by a government or its agency to the affected parties, on how to comply with its mandatory requirements (such as environment related laws).

This Term “Right to Pollute” will only exacerbate misinterpretation of the NPDES permitting program. No one has a right to discharge anything, and permits that allow for discharges are written to be protective of water quality. We understand that this is not just referring only to the CWA programs, but the CAA programs as well and connot speak to the CAA. In as far as it is applicable to the CWA, EPA believes the term “right to pollute” to be an inaccurate representation of the NPDES program as the CWA and 40 CFR lays out.

Page 133: The term “tradeable permits” should be revised. Permits are not actually traded under the NPDES program; credits can be traded to meet water quality-based effluent limitations.

Page 133 – 143 (Text boxes 5 an 6): These two water quality trading examples seem to break up the document. Can these be moved into an appendix and only include a small description of the two examples in the text of the document?

Page 129: It may be helpful to provide an introduction to the CAA and CWA programs so that readers who are unfamiliar with these programs could get an overview.

Pager 129 – 143 Section 3.3.2 Throughout: Replace “Tradable Permits” with “Water Quality Trading”

Page 130:
General Comment 1: Point to nonpoint source trading is not addressed. Please remember that permits themselves are not tradable and are not an equivalent word to “pollution”. What is being

traded is a water quality credit. Water trading is very different from air trading do to the nature of stream hydrology. Issues such as fate and transport, localized hot spots, and enforcability under the CWA are clear differences. For example, with carbon emissions, a facility in California can generate the exact same credit as one in Pennsylvania. In water, those two credits are in completely different markets. Water quality trading is very sensitive to local conditions.

1. *Water Quality Trading:Facilities which discharge pollutants are issued permits with specific limits for each pollutant discharged, defined in concordance with the terms 25 of the CWA. The entities discharging less than their permit limit generate credits. 26 Under this strategy, credits can be traded with other polluting entities that would otherwise exceed their permit limit, provided that water quality standards are protected. Non-point sources of pollution (such as crop agriculture) which do not require permits can also make improvements to reduce pollutant loadings and generate credits which can be traded with regulated facilities.*

Page 136

1 As an example, if a government wants to limit pollution in a river where a number of entities 2 discharge, it need not adopt a command and control limit on each firm. Instead, a 3 regulatory cap on the total pollutant loadings can be established and 4 individual permit limits can be issued to all dischargers, with provisions which allow for the dischargers to trade between their individual limits as long as the overall cap is not exceeded. Those dischargers having low 5 pollution control costs will have incentive to control more pollution than their permit limit 6 and thus generate water quality credits that can be sold to firms with high costs of pollution 7 control. Because the overall cap on the pollutant is fixed, the 8 regulatory goal is achieved. Water quality trading thus brings about the desired reduction in 9 pollution level at lower cost than if all dischargers were required to use traditional onsite treatment technology. . 11 Water quality trading also encourages cost effective pollution control investment by giving each firm 12 a clear economic signal to invest in new technology to reduce pollution at a level that 13 corresponds to the market value of the permit.

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Deleted: *Tradable Permits*

Deleted: *Every polluting entity is allowed to discharge 24 pollutants up to a certain pre-determined limit,*

Deleted: *t*

Deleted: *allocated*

Deleted: *have 27 exceeded their allocated*

Deleted: *polluters*

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Comment [c4]: Using terms like "uniform" and "pre-determined" imply that the permit limits are somehow arbitrary. Each permit limit is calculated specifically for that permit, considering the effluent characteristics as well as the receiving waterbody characteristics.

Comment [c5]: NPDES regulations do require individual permit limits for all permitted discharges.

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Comment [c6]: Why a lower level? Do you mean more stringent? The pollutant loadings allowed should be similar to what would be required in individual permits. The difference would be a flexibility in the geographic l… [1]

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Deleted: *to pollute that sum to t…* [2]

Comment [c7]: Dischargers ca… [3]

Deleted: *firms*

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Deleted: *firms*

Deleted: *allowance*

Comment [c8]: They always n… [4]

Deleted: *have permits they no lo…* [5]

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Deleted: *supply of permits (and the*

Deleted: *)*

Deleted: *The tradable permit*

Deleted: *the firms having high c…* [6]

Deleted: *Tradable permits*

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Page 137: It may be useful to add to the paragraph at the bottom of page 137 reference to a common endpoint as a factor to consider when crafting a policy option. For example:

The policy maker's objective, the local conditions, and several other factors determine the suitability of a particular market based strategy. For example, water quality trading is well suited where there are a variety of dischargers at different levels of contribution and with varying control costs. A policy framework that facilitates the emergence of multiple options for dischargers to meet their permit limits, such as buying credits from more efficient controllers of discharge or investing in new equipment to achieve further reductions is likely to accomplish the desired level of water quality at the least possible cost to the economy. Table 24 illustrates the potential effective application of a number of market based approaches in specific situations. Accompanying this chapter are two examples of the application of market-based approaches for the design of water quality trading schemes for Nr in watersheds (text box 5: Water Quality Trading to Meet the Long Island Sound Wasteload Allocation in Connecticut and text box 6: Water Quality Trading in the Illinois River Basin).

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Deleted: *tradable permit strategy*

Comment [c9]: What do you mean by "offsets?"

Deleted: *offsets are possible. In the case of water quality it is not uncommon to find*

Deleted: *spectrum*

Deleted: *polluters*

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Page 132 - Table 24: "The participation of every private entity is critical, and voluntary."

General: The chart is useful for decision making, but does not really address times when multiple market strategies might work well in conjunction – such as BMP insurance and WQT. Farmers are disinclined to trade because they worry the BMPs will impact crop yield. The insurance can be an added safeguard.

Page 5: [1] Comment [c6] **ctsuser** **9/18/2009 2:32:00 PM**

Why a lower level? Do you mean more stringent? The pollutant loadings allowed should be similar to what would be required in individual permits. The difference would be a flexibility in the geographic location where reductions take place.

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to pollute that sum to that overall cap

Page 5: [3] Comment [c7] **ctsuser** **9/18/2009 2:33:00 PM**

Dischargers can include commercial enterprises, individual citizens, or public entities such as municipalities or military facilities.

Page 5: [4] Comment [c8] **ctsuser** **9/18/2009 2:51:00 PM**

They always need a permit. Permits contain limits for a variety of pollutants. You cannot discharge without a permit.

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have permits they no longer need

Page 5: [6] Deleted **ctsuser** **9/18/2009 2:53:00 PM**

the firms having high costs of pollution control were required 10 to control their full share and low cost of control firms were limited to their share of control