



March 5, 2003 Conference Call Summary

Representatives from the following organizations participated in the conference call: Abt Associates (Mark Landry), Animal Husbandry and Water Quality Programs, USDA-NRCS (Kari Cohen), Brown and Caldwell, Nashville, Tennessee (John Ricketts), CH2M Hill Canada (Dennis O'Grady), Connecticut Department of Environmental Protection (Garry Johnson), Environmental Defense (Mille Baird), EPRI (Gordon Hester), Kieser & Associates (Mark Kieser and Andrew Fang), Massachusetts Department of Environmental Protection (Marcia Sherman), Ohio EPA (Gail Hesse), Texas A&M University (Richard Woodward), Texas Water Commission (Clyde Bohmfal), US EPA Chesapeake Bay Program (Allison Wiedeman), US EPA National Center for Environmental Economics (Barry Korb), US EPA National Risk Management Research Laboratory (Hale Thurston), US EPA Office of Policy, Economics, and Innovations (Clay Ogg), US EPA Office of Water (Mahesh Podar and Lynda Hall Wynn), US EPA Region 10 (Claire Schary), Virginia Colonial Soil and Water Conservation District (Brian Noyes), and Washington Suburban Sanitary Commission (Cy Jones). Mark Kieser chaired the call.

Multiple Markets Concept Paper

Mark Kieser indicated that the updated executive summary and full draft of the multiple markets concept paper by Kieser & Associates will be posted on ETN's website (www.envtn.org) on or about Monday, March 10.

The Conestoga Nutrient Trading Pilot Program

Allison Wiedeman gave an overview on the Conestoga River Nutrient Trading Pilot Program in Pennsylvania, a project partially supported by EPA. This project is a joint effort of EPA and two non-profit organizations, the Pennsylvania Environmental Council and the Enterprising Environmental Solutions Inc. (EESI). The Conestoga River has the highest nutrient concentrations of all rivers in PA. The basin has point sources and large agricultural nonpoint sources.

This pilot program started in 2001 and will run through 2004. The purposes of the Conestoga River project are to raise awareness of nutrient trading in the watershed, help PA's trading policy development, and realize benefits of some demonstration trades. The project is also studying how multiple benefits generated from nutrient reduction efforts can all be traded. For example, a wetland restored to generate nitrogen credits can also provide wildlife habitat. No-till BMPs can promote carbon sequestration to reduce green house gases in the atmosphere.

Replying to the question from Clay Ogg regarding incorporating nutrient management plan into the trading program, Allison said that this was a baseline issue. Coming in April 2003, there will be load allocations to each of the major basins in the Chesapeake Bay watershed. A nutrient management plan will then be required for all farmers in the basin. To generate trading credits, nutrient reduction efforts must go beyond such requirements. Lynda Wynn pointed out that for large concentrated animal feed operations (CAFOs), an animal waste management plan is already required (equivalent to technology-based standards). Load reductions resulted from implementing the management plan is, therefore, not eligible for trading.

Brian Noyes indicated that the Colonial Soil and Water Conservation District has a proposal for funding for a pilot program in the Lower James River Basin similar to the Conestoga program. This proposal is currently pending with the wastewater division of EPA's Office of Water.

The Chesapeake Bay Watershed Trading Registry Project

Allison Wiedeman also briefed the conference call on the trading registry project that the World Resources Institute (WRI) has been conducting in the Chesapeake Bay. Using an on-line tool called NutrientNet, this trading registry will create a marketplace for registering credits, finding trading partners, and selling and buying credits. It will also provide a GIS-based tool for nutrient reduction calculations. With the current EPA funding, WRI will choose a small basin in the Chesapeake Bay watershed, possibly in Maryland, to develop the GIS database necessary for running NutrientNet. The hope is to develop databases for the entire 64,000 square mile watershed in the future when funds become available.

In reply to the question about how auditing can be done in NutrientNet for credit calculations, Allison indicated that credit verification and actual monitoring are part of the program design and development process. They will be required and conducted independent of trading tools. NutrientNet as a registry tool will not have the auditing function.

Trading in the Chesapeake Bay Watershed in General

Allison Wiedeman further indicated that no single trade has taken place in the Chesapeake Bay largely because loading allocations to the basins of the bay watershed that can serve as caps for trading will not come until April this year. Cy Jones commented that the governor of Maryland issued an Executive Order to require POTWs to apply "limits of technology" standards for nutrients (0.1 mg/L for P and 3 mg/L for N). There is no timeframe for fulfilling these requirements and no funding sources have been specified. Cy believes that this order may diminish or eliminate trading opportunities in Maryland.

Rich Woodward asked whether inter-state trading would be considered in trading programs in the bay watershed. Allison stated that this is possible because trading should be watershed-based in general and there are 9 major basins in the bay watershed. However, the first stage of trading in the watershed is likely to be intra-state because initial trading programs are likely to take place in small basins.

Allison mentioned that Tributary Strategies (not legally binding) will be developed to meet the load allocations expected to arrive this April. The consequences of not voluntarily achieving the necessary reductions with the Tributary Strategies are the listing and imposition of TMDLs on non-achieving basins in 2011. States in the bay watershed have all said nutrient trading should be part of the Strategies and have previously agreed to a nutrient trading strategy in 2001. States will also issue water quality standards for N and P based on EPA's nutrient criteria scheduled to be released in 2005.

Municipal WWTP operations in the bay watershed are serious about the bad allocations and the Strategies because of the pending TMDL. They take pride in going beyond the requirements. However, Gary Johnson from the Connecticut Department of Environment Protection pointed out that in Connecticut, about 20% of the municipal facilities are run by private contractors. These private entities operate the facilities to meet permit requirements. But they have few incentives to make further reductions as doing so will narrow their profit margins. In addition, they are not eligible to receive credit payments from trading funds from the state. The owner of the facilities, the municipalities, are the designated recipients. Gary mentioned that most of these contracts, however, were established before the Long Island Sound nitrogen trading program in Connecticut.

In response to the question on what kind of trading model, open trading or closed trading, will be used in the bay watershed, Cy Jones indicated that it will be closed trading because of the "caps" specified by load allocations and Tributary Strategies. Open trading is not feasible as states have not completed trading rules and programs.

Allison mentioned emerging interests in the bay area in using oyster farming to filter and uptake nutrients in the bay. This could be a potential trading credit generator. It has the advantage of easily tracking how much nutrient is removed from water column based on the number of oysters raised and methods of culturing. However, there are other issues related to oyster culture in the bay and the science of pollutant removal by oysters is limited at present.

The Connecticut Long Island Sound Nitrogen Trading Program

Gary Johnson, an engineer from the Connecticut Department of Environmental Protection (CDEP) briefed the conference call on the Long Island Sound nitrogen trading program. Low dissolved oxygen (DO) in the Long Island Sound (north side of the island) calls for the reduction of nitrogen from all sources throughout the watershed. A 2001 nitrogen TMDL was based on monitoring data collected in the 1980's. The CDEP decided to issue a general permit to point sources in the six management zones located in CT (there are 12 management zones in total for the sound watershed). Nitrogen trading is allowed among sources within the general permit to meet the overall reduction requirements.

The general permit negotiation started in fall of 2001 and was signed on January 1, 2002. Seventy-five municipal facilities that have a daily nitrogen load greater than 25 lbs are included in the permit. Among the 75 facilities, the Hartford Metro has the largest effluent volume at 60 MGD. The smallest one has a volume of 0.6 MGD. The general permit has a 5-year duration with annual step-down of allowed total load. Participants of the program are required to monitor their effluent at least once per week. Facilities with greater than 10 MGD effluents need to test twice a week. At the conclusion of the first year of the program (end of 2002), permittees of the general permit collectively outperformed the permit loading goal by 15%.

The value/price of credits was decided by a trading board established specifically for the program. The 12-member board is composed of three standing members of state officials (including the state treasurer) and nine members appointed by local governments, representing different areas and interests affected by the program. The value of each equivalent credit generated in 2002 was set at \$1.65/lb. Nitrogen credits produced in different management zones have different equivalent credit values due to their different impacts on the DO level in the Sound. Basically, zones closest to Sound have the highest equivalent credit values (1 lb reduction = 1 lb of tradable credit) while zones farthest away from the Sound have only 15-18% of their N reduction available for trading.

The credit price (\$1.65/lb) was set using a subset of plants retrofitted in the late 1990's with funding from the state's Clean Water Funds. The Clean Water Funds provide grants to 30% of the total cost of an upgrading project and loans to the remaining 70% with a 2% interest rate. Twenty-three plants have completed upgrading. Capital costs as well as operation and maintenance costs for N removal equipment used in these 23 plants were calculated and divided by N removed.

With this price, for 2002, the largest credit producers generated \$600,000 worth of credits and the largest buyer needed \$275,000 worth of credits. The state tracks the credit balance of each permit participant. For credits traded in 2002, the state will send invoices to each participant indicating the balance in March. The payment is due by the end of July and the state will send payment to credit sellers starting August 15.

Because the price is not set to clear the market the state will have to pay an extra \$1.4 million to credit sellers for the 2002 trading year. One of the reasons that an engineering cost approach was used to set price is that municipalities feel that a clearinghouse (the trading board) market design is better than having to make seller-buyer direct negotiations where a strict market-based pricing would occur. The state was not surprised by the \$1.4 million deficit as it was expected from data collected during 2002. Funds were prepared for such deficits. More importantly, the amount of money invested in N load reduction achieved by the trading program is much more cost-effective compared to other major investments with similar load reductions. In addition, as the allowed load shrinks each year in the permit, future outlook points to increasing costs of load reduction, leading to fewer credits and higher credit prices. Gary mentioned that the average effluent N concentration was at 11 mg/L in 2002, with better performing facilities running at 3-4 mg/L. By 2014, the average value is expected to be 5 mg/L, leading to a credit price of \$5-10/lb.

In terms of program auditing, each facility is inspected by the state at least once a year. Multiple analytical labs are used in the program. Split samples are used to check QA/QC of the labs. Auditing results are posted and updated electronically on a monthly basis, so are credit price forecast, credit balance, and other program related information. Labs can also send testing results to the database electronically.

Gary indicated that facilities in the watershed do have an option to not participate in the general permit/trading program for nitrogen. In fact, four large facilities are not part of the general permit. They were issued individual waste load allocations. Most municipalities opted to stay with the general permit.

Asked about the administrative cost of conducting the trading program, Gary estimated about 1.5 FTEs for the technical work and 0.5 FTEs for data entry. Lynda Wynn pointed out that the EPA grant given to the program is intended to evaluate the first year's experience and explore the feasibility to include nonpoint sources in the program.

Other

Call participants discussed how many current or past water quality trading programs have chosen to let the market decide credit prices. The California Grassland Area Farmers Tradable Loads Program for selenium and the Dillon Reservoir phosphorus trading were cited as programs with market-pricing. But overall, true market-pricing is still not common.

Website links, briefs and/or reports related to the three trading programs discussed in this conference call will be sent to Mark Kieser and posted on the ETN website (www.envtn.org).

Next Call

The next call will be at 10:30 EST, Wednesday, April 30, 2003. Tentative topics include:

- Presentations from some of the 11 EPA supported trading projects
- Michigan's trading rules
- Possible call participants from USDA on Conservation Innovation Grants