

Minutes from Nutrient Trading TAC meeting of October 17, 2005

The meeting was held at the Virginia Farm Bureau Federation Office, located at 12580 West Creek Parkway in Goochland County. The meeting commenced at 9:30 with introductions by Alan Pollock, Director of DEQ's Office of Water Quality Programs. Suzie Greenhalgh, Ph.D., Mindy Selman and Jenny Guiling of the World Resources Institute were the featured speakers in the morning; in the afternoon, Kyle Winter outlined the regulation development process and led a discussion of the most recent draft of the regulation that have been distributed among the TAC to date. A list of the attendees follows.

Glenn Harvey	Alexandria Sanitary Authority
Cy Jones	Ch2M-Hill
Joe Tannery	Chesapeake Bay Foundation
Paul Howard	Culpeper County
Bill Keeling	DCR
Stuart Wilson	DCR
Allan Brockenbrough	DEQ
Tom Faha	DEQ
Keith Fowler	DEQ
Ellen Gilinsky	DEQ
Alan Pollock	DEQ
Kyle Winter	DEQ
J. Michael Foreman	DOF
Scott Reed	EarthSource
Bob Koroncai	EPA
Bill Street	James River Association
Tony Nobinger	Philip Morris
Tom Pakurar	Sierra Club
Tom Roberts	Smurfit-Stone
Rick Parrish	Southern Environmental Law Center
Katie Kyger	VA Agribusiness Council
Wilmer Stoneman	VA Farm Bureau
Missy Neff	VALCV
Donald Wells	VASWCD
Clifford Randall	Va. Tech
Erik Allen	Watershed Consulting
Suzie Greenhalgh, Ph.D.	World Resources Institute
Mindy Selman	World Resources Institute
Jenny Guiling	World Resources Institute

Suzie Greenhalgh, Ph.D., Mindy Selman and Jenny Guiling of the World Resources Institute gave a presentation on the NutrientNet software program (WRI's presentation can be reviewed online; more information is available at <http://www.nutrientnet.org>)

(the following text covers additional comments by WRI staff during the presentation, corresponding to the slides displayed)

Slides 3 and 5: Several policies were analyzed for their ability to reduce nutrients; trading appears to be the most cost-effective, across the board; market-based programs make the most sense and nutrient trading appears to have the most promise of all trading programs analyzed.

Slide 11: A 2:1 ratio was chosen for this program with consideration of politics; a 10:1 ratio would probably discourage participation in the program. It's likely that the accuracy of other assumptions in the program (efficiency rates, attenuation factors) will improve; More accurate assumptions regarding BMP efficiency rates might come from a more refined model or downfield monitoring. The attenuation factor accounts for attenuation between the field and the receiving stream as well as the delivery factor in the Chesapeake Bay model.

Slide 12: One reverse auction was undertaken in the Conestoga watershed, with two others planned. A credit bank was developed for Kalamazoo for player trading in order to demonstrate the model.

Slide 14: The PEC allocation purchase in the Conestoga watershed was accomplished using federal grant money.

Slide 15: Phosphorus reductions for the practices listed are based on the Chesapeake Bay Model and data provided by Penn State. The reductions in this reverse auction haven't been ground-truthed yet. Tools have also been developed for nitrogen reduction, and WRI is looking for a test case.

The reverse auction took place with a bid window of approximately 3 weeks. Participation was most likely undercut by the disbursement of annual EQIP money shortly before the auction was undertaken. Note the wide range in prices; this is comparable to the range of \$/pound reduced seen in point sources.

Slide 16: The Kalamazoo credit bank, when in place, will be ground-truthed by follow-up monitoring. The project consists of a credit bank, registry and electronic bulletin board.

Slide 17: The registry will be set up by WRI, who is developing an interface with the MDEQ databases.

The questions that follow were asked prior to the on-line demonstration of the NutrientNet reverse auction.

Stuart Wilson: How does this program avoid double-counting reductions for the point source and non-point aspects of the Tributary Strategy? Policy decisions will be needed on how this will occur.

Allan Brockenbrough: The baselines in the program could be programmed to reflect minimum program requirements.

WRI: Pennsylvania has minimum BMP baselines that would preclude what farmers could select as additional BMPs.

Bill Keeling: How does this program account for treatment trains (multiple BMPs installed or implemented in series)? There's a concern that subsequent reductions in the train will be improperly calculated.

WRI: There's not much data on efficiency for combined BMPs and this software is generally intended to track one BMP at a time.

Allan Brockenbrough: It wouldn't be difficult to program the software to re-evaluate the reductions by multiple BMPs in series.

Bill Keeling: What algorithm does this program use? The sum of removal efficiencies can't exceed 100%.

Glenn Harvey: How do you apply uncertainty factors in treatment trains?

Bill Keeling: 2:1 ratio covers uncertainty pretty well.

Allan Brockenbrough: The algorithm would process whatever assumptions DCR provided it.

Dr. Randall: How do you account for the seasonal nature of BMPs? You can't go on an annual basis. Without accounting for seasonality you can't have accurate ground-truthing of BMPs.

Dr. Greenhalgh: Those kind of variables would be up to the administrator of the program.

Glenn Harvey: Is that seasonality accounted for in the Bay model?

Bill Pakurar: What experience has shown that non-point source trading works?

Dr. Greenhalgh: Non-point source hasn't been widespread because of a lack of clarity in design and a lack of programs to facilitate point source/non-point source trades; Virginia's approach of starting with point source/point source trading and reserving point source/non-point source trades for new and expanded facilities is probably a good idea.

Al Pollock: Point source/non-point source trades are reserved for facilities with no allocation or those who expand to greater than their existing allocation even with limit-of-technology treatment. The trading program must be developed to provide additional growth with a view of the challenges we face.

Dr. Greenhalgh: As more people are aware of the non-point source contribution to the Bay's nutrient loading, trading is a good way to introduce non-point source dischargers to installing BMPs.

At this point, Mindy Selman logged in and brought up the NutrientNet web page in order to perform an on-line demonstration of the NutrientNet reverse auction. She noted that in the Conestoga watershed, agricultural technicians worked on the data entry on behalf of the farmers and that the program accounted for the cost of installing the BMP as well as the opportunity cost from the lost acreage (e.g., wider buffer strips).

Al Pollock noted that in the VA watershed general permit, non-point source allocations are acquired through a third party on behalf of the landowner. It appears that a professional should be handling this.

The following questions were asked during the demonstration:

Bill Keeling: How do you account for crop rotation?

Dr. Greenhalgh: The program currently doesn't. The Maryland Dept. of Agriculture made a similar suggestion.

It was noted that USDA is allowing CREP or EQIP cost-share generated credits to be sold by the farmer; VA law would have to be changed before this would be permitted under the general permit. Currently point sources receiving grant money to construct improved treatment plants can sell the credits generated by these improved plants.

Bob Koroncai: Does the program prorate credits to account for the cost-share percent of BMP funding?

WRI: Yes.

Dr. Greenhalgh: The question is whether the farmer taking title to all credits generated (irrespective of whether he paid for them) distorts the market. The lower net costs for a farmer using cost-share or grant money allows him to charge a more competitive price.

It was noted that two issues face this software: first, how to account for a performance baseline above and beyond the minimum requirements imposed by the tributary strategy, TMDLs or EQIP/CREP performance standards) and second, how to ensure the farmer only sells credits generated by money he put at risk himself.

Glenn Harvey: Is there any evidence that sellers could collude?

Dr. Greenhalgh: Behavior observed over the iterations of this program has changed to reflect an understanding of the market. One solution would be for the development of nutrient banks; this is attractive because the point source typically needs a large number of credits while non-point sources of credits typically have small numbers of credits to sell.

It was noted that buyers often want to know what kind of BMP is generating “their” credits. For example, filter strips might be preferable to land conversion.

As the bidding would have to be followed by some sort of contract, this would also drive the growth of banks (to eliminate the administrative burden on the farmer).

Cy Jones: Middlemen (similar to biosolids contractors) would be palatable to farmers, in order to aggregate credits and insulate the credit sources.

Al Pollock: The point source’s individual VPDES permit will contain requirements enforcing offset acquisition.

Glenn Harvey: One extreme is buying blind from a bank; the other extreme is the VPDES permit requiring the permittee to track the activities at several farms.

Dr. Randall: Fauquier County is looking at buying land to secure credits.

Bill Keeling: What attenuation factors were used?

Mindy Selman: The Chesapeake Bay model was used to calculate attenuation factors for nitrogen, other models were used for phosphorus and sediment.

Bill Street: Are there any challenges if all the buyers in a watershed are public facilities whose marginal costs for nutrient reduction are readily known?

It was acknowledged that banks and farmers could evaluate this possibility.

Bob Koroncai: When the trading association covers all the point source dischargers in the state, who bids against them?

Allan Brockenbrough: Membership in the Association isn’t automatic and trading is limited to the facilities in a given basin.

Al Pollock: The Association isn’t responsible for compliance; the dischargers in the basin who need credits could drive the Association to pool purchased credits... alternately, each discharger is responsible for their own compliance and the system should run like a market.

Cy Jones: Is the Association obliged to provide offsets in compliance plans?

Al Pollock: No responsibility is conveyed to the Association. Dischargers are free to work independently or as a group.

Allan Brockenbrough: The legislation allows the Association to help facilitate the process but it is under no obligations; the members can determine what tasks the Association will undertake.

Cy Jones discussed the optimization model that CH2MHill is working on for the Association; they're still negotiating the scope of the project but might also address trading.

Allan Brockenbrough mentioned that facilities meeting their limits at the outset of the general permit could be setting up a point source credit bank.

Dr. Randall noted that in a study of 8 facilities installing LOT treatment, the average cost was \$16/pound, ranging from \$2-\$28/pound.

Cy Jones: Is this appropriate for offsets?

Al Pollock: We've got some policy decisions before us; one is that we have to define what "permanent" means when discussing offsets. The initial compliance plan will consist of building improvements or buying credits. New and expanded facilities are eligible to purchase allocations; credits represent a contingency at year's end.

Dr. Greenhalgh: You can do almost anything with this software but the policy decisions are the hard part. (in response to another question) WRI manages the Internet features of NutrientNet but subcontracts the modeling.

After lunch, Al Pollock discussed the status of the regulation and the scheduling of other TAC meetings.

DEQ is working on a proposal for a grant from the National Fish and Wildlife Federation (NFWF). The grant would be between \$400,000 and \$1,000,000 and would be used to establish and field-test a system comparable to NutrientNet.

DEQ is also focusing on the liabilities that new and expanded dischargers are exposed to as of the legislation's effective date of 7/1/05. Acquisition of offsets required of new and expanded facilities.

12 information meetings for the public have been scheduled between 10/25/05 and 1/5/06.

These issues, and the large amount of material the TAC has to consider as part of the regulatory process, will cause DEQ to delay presentation of the draft regulation to the SWCB past the 12/7/05 meeting. The permit effective date of 1/1/07 will not change as a result of this.

Bob Koroncai asked for a clarification of the permit term; the permit will run from 1/1/07-12/31/11.

Allan Brockenbrough noted that the delay in presenting the draft regulation to the SWCB will allow DEQ to better integrate the study that CH2MHill is performing on behalf of the Association into the permit schedule of compliance.

The TAC then discussed the morning's NutrientNet presentation.

Dr. Randall noted that trading phosphorus in the Great Lakes basin was substantially different from trading nitrogen in the Chesapeake Bay watershed.

Wilmer Stoneman summarized several of the programs that the TAC has heard from during the regulatory development (CT, NC, NutrientNet) and asked if nobody had a program like the one VA was proposing, why the TAC didn't attempt something on its own?

Allan Brockenbrough explained that each of these other programs, while developing somewhat in parallel to VA, had developed tools that might be useful to us.

Bob Koroncai discussed the credit bank, and reverse auction concepts; while NutrientNet was an interesting concept, particularly in bringing buyers and sellers together, other systems could perform this function.

Al Pollock noted the functionality of the GIS components in NutrientNet but emphasized the need to get the data layers correct and the need for policy decisions to establish the appropriate operating parameters. Both WQIF money and PS/NPS trading could benefit from a banking concept.

Mike Foreman agreed with Al on the banking concept, particularly with the idea of a “blind” system in which owners of BMPs sold their credits to a third party. Mike also asked if DEQ could present a framework in which the regulation is put into context.

Paul Howard asked if a locality could use credits that they generated through NPS actions or policies.

Kyle Winter of DEQ’s Office of Water Permit Programs outlined the remaining regulatory process and led a discussion on recent changes to the draft regulation.

Kyle discussed a second grant opportunity with EPA Region 3, intended to dovetail with DEQ’s current electronic reporting project. As many, if not all, of the facilities subject to the general permit are likely to be reporting their discharge monitoring data electronically, it stands to reason that a number of the statutory reporting requirements (on both the permittees and DEQ) could be fulfilled by electronic reporting and compiling of the annual loading data. It would also assist DEQ in policy decision making and would facilitate point source traders’ identification of potential partners; Allan Brockenbrough explained that the regulation allows point sources to line up their own credit purchases and sales (PS/NPS trades are required to go through a third party).

Bill Street asked what the TAC’s master plan for developing a PS/NPS program was – echoing Mike Foreman’s comments, knowing what the framework is would make the regulatory development easier. Al Pollock referred to the watershed grant and discussed the problems faced by new and expanding facilities today, and explained the necessity of getting these policy decisions straight early on. It was agreed by the TAC that DEQ would review the meeting minutes and other documents, identify the issues that have been most difficult to resolve, determine whether these issues belong in the regulation, guidance or other documents, and establish a timetable for resolution. Bill Pakurar asked whether these were technical or political problems, and Bob Koroncai would like to see the list broadened to all issues that are currently outstanding.

The discussion turned to BMP verification. Glenn Harvey cited Dave Evans’ discussion of BMPs and whether a registry could be generated, and asked whether VA had an accurate list of BMPs that were “on the ground”. Stu Wilson said that a database existed for projects funded with cost-share money but that BMPs built and funded entirely by farmers and landowners had not been tracked.

The next TAC meeting is scheduled for Wednesday, December 14th, 2005, at 9:30 AM at the Piedmont Regional Office, 4949-A Cox Road in Glen Allen’s Innsbrook business park.