

Minutes from Nutrient Trading TAC meeting of July 25, 2005

The meeting was held at the Piedmont Regional Office (PRO), located at 4949-A Cox Road in Glen Allen. The meeting commenced at 9:30 with introductions by Dr. Ellen Gilinsky, Director of DEQ's Water Quality Division. Lee Dunbar of CTDEP was the featured speaker; Kyle Winter was introduced as VADEQ's new nutrient trading coordinator. A list of the attendees follows: later in the meeting, they were organized into one of four workgroups, as listed below:

Workgroup	Attendee	Affiliation
Water Quality Improvement Fund:	Alan Pollock	DEQ
	Stuart Wilson	DCR
	Guy Aydlett	HRSD/VAMWA
	Jeff Corbin	Chesapeake Bay Foundation
Point Source/NPS Trading:	Rick Linker	DEQ
	Jack Frye	DCR
	Andrew Seligman	EPA
	Ricky Rash	VASWCD
	Lisa Bacon	CH2M Hill
	Paul Howard	Culpeper County
	Bill Street	James River Association
	Paul Bukaveckas	VCU
	Katie Kyger	VA Agribusiness Council
Permit Structure:	Ellen Gilinsky	DEQ
	Keith Fowler	DEQ
	Kyle Winter	DEQ
	Jud White	Dominion
	Rick Parrish	Southern Environmental Law Center
	Chris Pomeroy	AquaLaw/VAMWA
	Tom Roberts	Smurfit-Stone
	Tony Nobinger	Philip Morris
Schedule of Compliance:	Allan Brockenbrough	DEQ
	Alison Thompson	DEQ
	Bob Koroncai	EPA
	Glenn Harvey	Alexandria Sanitary Authority
Other attendees, and their affiliations, are listed below:		
	Lee Dunbar	Connecticut DEP
	Joe Tannery	Chesapeake Bay Foundation
	Jen DeHart	Chesapeake Bay Foundation
	Steve Calos	VASWCD
	John Martin	Citizen (Albemarle County)
	Denise Thompson	VA Municipal League

Allan Brockenbrough presented a review of nutrient loads delivered in 2004 and compared them to the Water Quality Management Planning (WQMP) Regulation (9 VAC 25-720). (Mr. Brockenbrough's presentation can be reviewed online). The evaluation contains tables in which dischargers within a given river basin are sorted by the difference between their actual nutrient loads in 2004 and the proposed waste load allocations for these facilities.

The table also highlights the smallest theoretical number of facilities in each basin that could be upgraded to meet the basinwide allocation; Mr. Brockenbrough noted that permit compliance status for the respective facilities should not be inferred from this. Bob Koroncai noted that this demonstrated how in some basins this meant that only one or two facilities needed upgrades in order to meet the allocation caps, and that this should empower the trading process.

The flows used to calculate the waste load allocations were based on expected facility design flows in 2010, based on information provided to DEQ by the respective permittees. Several attendees noted that this evaluation doesn't address the facilities that are operating significantly below their design flow; the concern raised was that once these facilities approach their design capacities, the credits currently available will be reduced even at an exemplary nutrient treatment rate.

The Upper/Middle and Lower James River basins were split for the purpose of addressing a nutrient hot spot near Hopewell. In the Lower James, 2004 data showed that the phosphorus allocation was met. However, the quality of treatment provided in this subbasin does not affect the hot spot in Hopewell.

Jeff Corbin asked why some of the allocations have increased between the issuance of the January 2005 Tributary Strategy and the June 2005 WQMP allocations, and how that affects the total goal which includes both point source (PS) and nonpoint sources (NPS). Al Pollock explained that the difference accounts for public comment and attempts to ensure consistent treatment among all of the municipal and industrial facilities; in addition, the WQMP allocations reflected different levels of treatment for facilities in the York and James basins compared to the tributary strategies.

Both Mr. Corbin and Bill Street requested the documentation for these changes; there was also a question regarding the changes in delivered loads from 2003 to 2004 and how those might influence the trading program.

The WQMP will be discussed further at a public meeting scheduled for 10 AM on August 11, 2005 at PRO.

Lee Dunbar of Connecticut's Department of Environmental Protection then gave a presentation on the CT nutrient trading program (Mr. Dunbar's presentation can be reviewed online; more information is available at <http://www.dep.state.ct.us/wtr/lis/nitroctr/nitroindex.htm>).

(the following text covers questions answered by Mr. Dunbar during and after the presentation)

By 2014, all 79 municipal facilities are expected to be either achieving an effluent concentration of 4.0 mg/l or are trading to meet it (a baseline of 15 mg/l was assumed at the outset of the program). As time goes on, the cost of a credit is expected to increase; the first facilities to upgrade are expected to be the first beneficiaries of trading.

At one facility (Stanford), the debt service for N treatment is about \$2M/yr; as credit sales for N are unlikely to exceed \$0.6M/yr, the credit should be seen more as an incentive than as a revenue source.

The general permit is about 8 pages long as opposed to 30-60 pages for most CTPDES individual permits. It only covers municipally owned dischargers of domestic wastewater that discharge over 20 pounds of N per day, and allocates a percent of the total load based on a facility's proportional contribution to the aggregate average of flows reported by these facilities in the years 1997-2000. All future growth is assumed to be accounted for by credits.

There is no linkage between the general permit and the individually held CTPDES permits.

The target level of 2014 is approached incrementally, with annual limits linked to expected completion dates for planned facility upgrades. As the target level is reduced, all of the facilities retain a proportional allocation in an attempt to keep the number of "buyers" and "sellers" roughly equal. There is no allocation for growth; a 20 MGD facility currently operating at 10 MGD can either improve their N removal or buy credits as flow approaches the design capacity. This might provide a negative incentive to providing sewerage to homeowners currently on septic systems, or consolidation of sanitary systems treated by smaller (and possibly ineffective) facilities into regional systems.

The permit requires that facilities with N removal process equipment, operate the equipment and demonstrate this (by testing). Plants that use methanol as part of a nitrogen treatment process pose an interesting problem with regard to demonstrating utilization of the equipment.

Monitoring is performed and reported on a monthly basis. A nutrient analysis form is submitted in addition to the DMR; compliance is determined on a calendar year basis.

Monitoring is being performed to determine the attainment of the dissolved oxygen standard in the LIS, and this in turn will determine compliance with the TMDL. CTDEP is also looking at developing near-shore standards; if N loadings are met and D.O. is still too low when everyone is "tapped out" at 4.0 mg/l in 2014, Connecticut will have to either perform a Use Attainability Study (UAA) on the western part of the Long Island Sound, or the permittees will have to find innovative ways to treat N; alternately, flow reduction techniques such as aggressive inflow/infiltration (I/I) removal or reclamation/reuse of treated wastewater will have to be employed. Reuse/reclamation is not currently being considered.

The credit price is set by the CTDEP and is are calculated in several ways; one formula used is

$$\text{Credit} = \frac{\text{(Partial) cost of N treatment}}{\text{Equalized pounds of N removed from baseline}}$$

"Partial" means the cost of treatment that can be attributed to removal of nitrogen in order to comply with the permit and was subsidized via the state loan program; money spent on other treatment units, or money raised by federal grants, self-financing mechanisms etc. do not count toward the cost of treatment. Biosolids removal of N is an example of where this calculation becomes problematic. This cost varies by location in the state and is annually revised at the end of the trading season. Given the principle of diminishing returns, the cost of credits is expected to steadily rise given increasing construction costs and finite improvements in treatment efficiency.

CT hasn't analyzed the cost of treatment for industrial dischargers or for privately owned treatment works, where state grants and loans aren't a major concern. Few industries in CT discharge N.

All trading is in equalized pounds, which = pounds of N x delivery factor (proximity to hypoxic zone);

Credits are purchased and money sent to the exchange about 2 weeks prior to the exchange purchasing credits. In the first 3 years, CT bought more credits than were sold. When that reverses, CT will have to consider whether the aggregate load is still going down. The extra money collected could fund NPS projects, research or water quality improvement at point sources.

One problem with this is the ability to "trade" is fueled by financing; about \$120M was been requested for proposed projects, and only \$40M appropriated. Without financing for capital improvements, the program doesn't advance. If the WLA isn't met when buyers equal sellers, then other strategies (PS/NPS trading, lower limits) must be considered.

It should be emphasized that nobody "makes money" selling credits. The cost of a credit doesn't account for a variety of expenses (self-financing, treatment projects unrelated to N) so it would be difficult if not impossible to profit from the credit exchange. There are some non-economic incentives to build or not build wastewater treatment improvements, based on other local concerns (school construction, public image, accounting for the need to upgrade in order to comply with other CTPDES permit limitations).

If the aggregate cap isn't met in 2014, that's something that is still subject to determination; perhaps set up credit purchase so that the cash in = cash out, and raise the cost of a credit to where it serves as a deterrent to noncompliance. This might ultimately be preferable to trying to force a balance between buyers and sellers of credits.

At the present time, the cost of credit is tightly reined to prevent hardship situations. This is a closed market (eligible facilities can't opt out) and facilities are required to buy credits if their allocations are exceeded; on the other hand, if you're under your allocation you'd be dumb to refuse payment for the credits generated.

In Mr. Dunbar's opinion, the two best aspects of the system are:

New thing- it's a big experiment that deserves an honest chance;

The single permit provides an incentive to perform as opposed to the state exercising command and control (and the associated conflict) with 79 individual permittees.

The two least desirable aspects of the system are:

The inability to fund the program to accomplish its goals;

Still a tendency to be tied up in legal technicalities.

Environmental groups were initially skeptical but have largely turned their attention to other matters; Mr. Dunbar couldn't identify any group that maintained any objections to the program.

A lot of facilities were monitoring various parameters but most didn't have an active N monitoring program. Some sample splits (with CTDEP) occur but most monitoring is self-monitoring. The cost of monitoring is a trivial part of the total compliance cost.

About 50%-60% of the plants might get to 4.0 mg/l; given the current (modest) growth trends, perhaps 30% might be reaching 8.0 mg/l and the remainder might be content with reaching secondary treatment and buying credits (these would most likely be inland facilities with low delivery factors).

The major facilities in CT tend to be on the Sound or on major rivers, with low attenuation of N and a higher required degree of treatment in order to avoid credit purchases. One complication is that major facilities are located in MA, NH and VT and aren't part of the agreement.

With an 8 page permit, not much additional guidance was developed. The legislation contained enough authority that there wasn't much need for a regulation to implement it. There's a fact sheet but not any comprehensive guidance.

(regarding the makeup of the board) During the general permit hearing process, environmental groups had a chance to review and comment, but the makeup of the board was motivated by a desire to protect small towns and cities from the large municipalities. CTDEP essentially wrote the law and found a legislator to sponsor it.

(author's note) – VA legislation doesn't specify how prices are to be set. The state's sale of credits via the WQIF may help set the party-to-party exchange prices.

Interbasin transfers in CT aren't generally a major issue; the general idea of avoiding hot spots is honored, but the delivery factors are based on what N reaches the southwest corner of the LIS.

The 79 dischargers are not required to submit a compliance plan; they are required to notify CTDEP of future plans for expansion/upgrade, but it isn't directly related to meeting the N allocations.

The TAC then separated into the different breakout session groups; minutes from these sessions follow:

Water Quality Improvement Fund (WQIF) Workgroup:

Payment into the WQIF is the last option for new and expanded facilities; existing facilities would need to demonstrate their inability to obtain point source credits.

Payment could be used to offset credits for compliance purposes – a lot of issues regard timing of credits and whether credits were generated in appropriate way (i.e., not required by other programs). The workgroup believed consideration should be given to amending the law so that the prohibition against using BMPs funded under federal or state programs would be removed for payments into the WQIF for compliance purposes. However, that prohibition makes sense in cases where payment into the WQIF is to secure allocations for a new or expanding facility.

How do you deal with the integrity of the offsets and the re-establishment of BMPs (in the event of a natural disaster)? There are two issues here: 1. Compliance – should the “Act of God” provision in the VPDES permit regulation also apply in these cases so that the discharger is not held accountable if the BMP is destroyed due to a natural disaster; and 2. Re-establishment of the BMP – if the discharger

must pay to replace the BMP, this may be a disincentive to securing offsets by installing structural BMPs.

Point Source/Nonpoint Source Trading Workgroup:

It was suggested that the TAC hear from a speaker on the efficiency of NPS controls.

Some baseline above and beyond the controls required by the Tributary Strategy is needed. This leads to the questions of how baseline attainment will be verified (obviously will contain an on-the-ground monitoring component), and what Best Management Plan (BMP) efficiencies will be assumed.

For example, a farmer might be required by the Tributary Strategy to develop BMPs capable of a 30% reduction of nutrient load; a credit buyer could finance additional reductions, but the questions of baseline determination and how the additional reductions would be managed in the future need to be resolved.

One idea was that a conservative removal efficiency could be assumed with the provision that monitoring would be permitted to demonstrate better BMP performance.

Who “owns” NPS credits?

Another question was how to establish NPS controls as a functional replacement for PS loads and what ratio of replacement would be necessary to ensure a net reduction of nutrients discharged; <http://www.nutrientnet.org> is one source of information regarding this. Again, monitoring would be a major component of verifying this.

Schedule of Compliance Workgroup:

By 2010, will all final limits become effective? final limits could be faster or slower... do we want to have a basin wide schedule for each basin or individual schedules for the respective facilities?

What can we do to jumpstart compliance plans – trading association will develop a request for quotes (RFQ) for plan development.

The draft permit regulation will go to the December SWCB meeting with final Board approval in the March meeting; if the effective date of the permit was 1/1/07, nine additional months to generate schedules would delay the program.

Permit Structure Workgroup:

Should the plants be listed by basin, or should the permit refer to the WQMP?

How to enforce operations and maintenance (O&M) requirements? Most facilities should have an O&M requirement in their individual VPDES permits, but perhaps not all of them. Should there be a requirement to use all installed treatment units? Ultimately, the idea would be to allow the market to motivate better O&M.

Permit contents – the general permit will contain at the least what is specifically required by legislation.

Need to define what a credit is.

Monitoring?

DEQ should provide for public review and comment on any proposal to offset increased discharges, whether point or nonpoint source reductions, contributions to WQIF or “other means”. In addition, the public must have the opportunity to review and comment on GP issuance and modification, including approval of individual compliance plans – but to what extent? The regulation should be clear and explicit regarding the nature of public comment and what DEQ does in response to the comments, with the procedure spelled out.

Permit Condition 2 (in the law) addresses how VA meets 2010 goals for each tributary. Condition 3 (in the law) establishes requirement to submit schedules; to what extent will this require VA to revise Condition 2?

What is a reasonable and feasible schedule? Chris Pomeroy noted that some of the facilities that were highlighted in Allan Brockenbrough’s presentation won’t be on line before 2010, so any schedule based on the performance of those facilities will not be realistically achievable.

Pretreatment – can significant dischargers of N to POTWs perform or engage in some sort of trading? The law isn’t totally clear on this but from a review of the definitions, appears to preclude indirect dischargers from participation. The VMA has some talking points regarding indirect dischargers and would like to have some consideration regarding this; VAMWA thinks the existing regulations already allow indirect dischargers to do something like this.

Should new facilities trade wasteload allocation credits? Facilities that are currently unpermitted can only buy offsets; permitted facilities that have not been constructed are able to trade if they have an allocation in the general permit.

Nutrient hot spots must be avoided, but how? Allan’s analysis separated the Upper and Lower James; should these sections be permitted separately? It was agreed that credits should not be “pulled” upstream of the fall line from downstream of the fall line.

What are the minimum technology and offset requirements for facilities permitted prior to 7/1/05 but not yet constructed? This needs to be clarified, particularly for industries.

How would netting be accounted for? Netting is an issue where river water passes through an industrial process (typically as cooling water) without the introduction of additional pollutants. Industries would need to monitor intake water to prove that their discharge did not contribute to the wasteload allocation.

Could additional allocations be transferred to a regional plant as an incentive to remove “non-significant” dischargers and septic systems off-line? This needs additional investigation.

What details should be housed in a document separate from the watershed general permit?

The next TAC meeting will be held August 31, 2005, at 9:30 AM at the Piedmont Regional Office, 4949-A Cox Road in Glen Allen’s Innsbrook business park.