

Minutes of the TAC Meeting for the Reclamation/Reuse Regulations
January 27, 2006

The meeting was opened at 9:30 a.m. by Dr. Ellen Gilinsky, Director of DEQ's Water Quality Division. She referred to the previous attempt at developing this regulation as "doing too much at one time" and noted that because of the time taken in the previous attempt, the Department chose to start over. She noted that there had been considerable interest in this TAC and that she expected the TAC members to represent their associated interest groups, particularly in relaying information and issues back to their "constituents".

Dr. Gilinsky discussed the process for the meeting, and introduced as the facilitator, James Golden, Deputy Director of the DEQ-Piedmont Regional Office, and as the technical advisor to the TAC, Valerie Rourke, DEQ-Office of Water Permit Programs.

Mr. Golden introduced himself and then requested the TAC members and any attendees to introduce themselves and briefly state their goals for the process.

Marcia Degen, DEQ-Office of Wastewater Engineering, desired that the TAC develop rules that are straightforward, logical and easily implemented.

Terry Wagner, Director of DEQ's Water Resource Division introduced himself.

Bob Angelotti, Upper Occoquan Sanitation Authority (UOSA), desired to help develop the regulation and reach consensus on the requirements.

Karen Harr, Hampton Roads Sanitation District (HRSD)/Virginia Association of Municipal Wastewater Agencies (VAMWA), wanted to ensure that the process to develop and adopt the regulations was completed and would promote and encourage water reuse.

Pete McDonough, Virginia Golf Course Superintendents Association, wanted to see effective water reclamation regulations that would benefit over 360 golf courses in Virginia.

Chris Guvernator, American Water Works Association, wanted to develop safe and implementable regulations.

Dan Horne, Virginia Department of Health (VDH), wanted to develop regulations that are implementable and protective of human health.

Doug Fredericks, Camp Dresser McKee, worked with the reuse regulations in Florida and would like a similar program to be developed in Virginia.

Dave Johnson, ERM/Virginia Chamber of Commerce, wanted to protect health while maximizing reuse of reclaimed water.

Chris Albert, Hunton-Williams/Virginia Manufacturer's Association, wanted to see the development of reasonable regulations applicable to industry.

Rick Hill, Department of Conservation and Recreation, wanted to promote wastewater reclamation and reuse in a manner that would not cause non-point source pollution problems.

Greg Evanylo, Virginia Tech, wanted to see the development of effective economical, agricultural and environmental regulations.

Tim Coughlin, Loudoun County Sanitation Authority and Virginia Water Environment Association, wanted to develop regulations where the TAC could achieve consensus.

Gus Simmons, Cavanaugh and Associates, indicated that he designed systems to reclaim water and wanted to participate in the development of these regulations.

Allan Brockenbrough, DEQ-Office of Water Permit Programs, indicated a desire to work through the process.

Kyle Winter, DEQ-Office of Water Permit Programs, was present to record minutes.

Valerie Rourke, DEQ-Office of Water Permit Programs, indicated that she would provide technical support to the TAC through the regulatory development process.

Mary Ann Massie, DEQ-Office of Groundwater Protection, was present as an observer.

Ed Gorski, Piedmont Environmental Council/Virginia Conservation Network, wanted to see the development of enforceable regulations that everyone could live with.

Gem Bingol, Piedmont Environmental Council, was present as an observer.

George Kennedy, HRSD and VAMWA, hoped the TAC could adhere to the legislative mandate requiring the development of a regulation that promotes and encourages wastewater reclamation and reuse.

Tom Faha, DEQ-Northern Regional Office, desired to see guidance that can be implemented in existing permit programs.

After the introductions, Mr. Golden discussed the previous attempt to develop the wastewater reclamation and reuse regulation. He then briefly reviewed the DEQ Advisory Group Protocol giving particular attention to "Guidelines for Discussions."

Ms. Rourke followed with a brief history of the regulations to date, noting the following:

- In April 2000, HB 1282 was approved which amended the purpose of State Water Control Law to among other things, "promote and encourage the reclamation and reuse of wastewater in a manner protective of the environment and public health"
- A TAC to develop a Wastewater Reclamation and Reuse Regulation was assembled in June 2001 and met monthly from July 2001 through February 2002
- A proposed regulation developed by the TAC was advertised in February 2003 for public comment
- In response to significant comments received on the proposed regulation, it was revised but never published

- Shortly thereafter, DEQ executive management decided to discontinue further work on this draft of the proposed regulation
- In September 2005, the first proposed regulation was withdrawn due to a significant lapse of time between the original and currently proposed regulations, and to avoid public confusion over two similar but separate regulatory actions

The nutrient trading regulation is underway, and will influence the development of this regulation. The water supply regulations will also influence this process.

Ms. Rourke discussed items sent to the TAC members by e-mail, including links to other state (CA, FL, NC and WA) regulations, the public comments received during the NOIRA for the VA regulations, and TAC contact information. All reference materials sent the TAC will be made available in binders for TAC meetings. She requested that these binders be returned at the end of each TAC meeting in order to append or update them with new materials between meetings. She requested comments to draft regulations be made in writing, and asked whether meeting once per month was acceptable to the TAC. Ms. Rourke also briefly discussed logistical matters concerning TAC meetings.

While the TAC won't refrain from using appropriate language from the previous attempt at the regulation, the intent is to incorporate as much original thought as possible. Therefore, the outline of the previous regulation will not be used as a template for the current process.

The TAC was then given the opportunity to suggest general categories of reuse and was instructed to brainstorm freely without regard to limitations imposed by other existing regulations. Ms. Rourke recorded reuses suggested by the TAC on large sheets of poster paper that were hung on the wall.

Mr. Johnson suggested reservoir recharge and the augmentation of potable water supplies.

Mr. Fredericks suggested land application (or irrigation) with differing categories of public access or restricted access reuse. Public access might include parks and golf courses, restricted access might include dedicated disposal methods such as rapid infiltration basins. Industrial reuses such as cooling towers and power plants were also mentioned.

Ms. Harr suggested boiler feedwater and asked whether restricted access would be different from agricultural irrigation. She also suggested stack scrubbing and street washing.

Mr. Simmons suggested fire protection water (sprinkler systems).

A TAC member asked about rapid infiltration basins as a means of groundwater recharge and suggested deep well injection.

Mr. Wagner asked about a previously conducted review of policies that might limit reuse, and requested that this review be reconsidered. Mr. Golden noted that the TAC was currently brainstorming and would consider barriers to implementation at a later point.

Mr. Wagner asked whether we were talking about disposal or reuse, citing existing disposal regulations. Mr. Golden responded that some would debate where the distinction between disposal and reuse occurs, and that the point of this discussion was to explore ideas.

Dr. Evanylo suggested groundwater recharge, specifically the augmentation of potable water supplies.

Mr. Horne suggested commercial applications such as, toilet flushing, commercial laundries, and car washes.

Mr. Johnson suggested makeup water in industrial processes (i.e., ready-mix concrete and dust control) and asked whether there were any regulations on the use of non-potable water.

Mr. Horne said that New Jersey had such regulations.

Mr. Fredericks suggested aquifer storage and recovery.

Mr. Faha asked what was needed to protect surface water, groundwater and human health. At what point do we say of reclaimed water “it’s safe”? He cited recreational uses.

Ms. Rourke refocused the conversation to uses of reclaimed water.

Mr. Wagner cited the possible indirect reuse in a case such as UOSA (where treated wastewater is discharged to a reservoir that serves as a water supply), and asked whether anyone was attempting direct reuse.

Mr. Guvernator asked about irrigation of edible crops vs. pasture land.

Mr. Johnson suggested the reuse of reclaimed water for animal watering (livestock) as opposed to using potable water. Dr. Degen stated that reclaimed water was already being used to clean out animal pens.

Dr. Evanylo suggested wetlands augmentation/restoration. There was some question about the default discharge limits for facilities currently discharging to marshes, swamps or ponds.

Mr. Simmons suggested aquaculture. Other members of the TAC noted that some species of fish used in aquaculture, such as tilapia, could be sensitive to chlorides and ammonia in reclaimed water.

Mr. Gorski suggested fire fighting (as opposed to operating fire sprinkler systems). He also asked if reuse specifically contemplated municipal water supply systems, or would also allow reclamation and reuse of wastewater from onsite septic systems.

Ms. Rourke replied that the last attempt at the regulation focused on large scale reuse, and that on-site disposal systems were regulated by VDH.

Mr. Wagner asked about greywater systems at houses, and suggested that this would be a unique domestic reuse (e.g., toilet flushing).

Mr. Simmons stated that the TAC needed to distinguish between greywater and reclaimed water, and suggested that greywater be considered “pre-reclamation”.

Dr. Degen stated that some local health districts permitted greywater reuse, and asked what regulations might govern gray water reuse.

Mr. Gorski suggested decorative landscaping (i.e., fountains) and other “water features”.

Mr. Golden asked whether there was a need to organize these uses in categories such as industrial uses, etc.

Ms. Rourke listed the following additional uses: snow making, ship ballast, damping for compaction and water jetting for backfill compaction around pipes.

Dr. Evanylo suggested indoor humidifiers be added to the list of reuses.

Mr. Golden then asked that each TAC member come up and rate the perceived treatment required for each of the reuses, using a scale of 1 (most) to 3 (least).

Before and during this exercise, several comments were made. Mr. Golden noted that some industries already route treated wastewater to scrubbers or for other on-site uses, and also noted that some uses (boiler feed, concrete) may require higher quality water than the TAC might have thought. He also noted that end users would be free to provide additional treatment of the reclaimed water to meet the specifications of their particular reuse.

Mr. Guvernator differentiated between levels of human contact, even in industrial applications.

Ms. Rourke stated that environmental protection was secondary to the protection of human health concerning treatment requirements for reuses.

Mr. Horne cited the concerns of reasonable public access and the possibility of worker contact.

Ms. Harr stated that there was an incentive to not discharge owing to the new nutrient waste load allocations, and cited the current use of non-potable water for dust control and jetting lines as an issue of routine hygiene. She asked if the water was clean enough to swim in, how would concern about incidental contact be justified?

Mr. Winter noted that the nutrient regulations currently only applied to the part of the state draining to the Chesapeake Bay, and that the reuse regulations were being developed for statewide implementation. If the water was insufficiently treated, some end users might resort to other sources (public water or raw surface water); conversely, requiring too stringent treatment would not present a reasonable alternative to the current modes of discharge to surface waters.

Mr. Wagner stated that treating water to a certain level of quality added value to that water, and it should have value to the end user. There may be situations in which surface or groundwater is not available, in which case stringent treatment would be feasible.

Mr. Hill noted that contact and consumption were not synonymous.

Mr. Fredericks requested that more than 3 levels of treatment should be considered based on:

1. SDWA requirements
2. Advanced secondary treatment (5-10 mg/l for BOD and TSS)
3. Typical secondary treatment (30 mg/l for BOD and TSS)

4. Primary treatment or greywater

Mr. Fredericks noted that disinfection or denitrification requirements might differ within these categories.

Mr. Simmons pointed out that typical secondary treatment did not treat total organic carbon and other materials that might impact the aesthetics of some reuses.

The discussion turned to the public participation process and the group recognized that public perception of reuse is a major issue. The group discussed that a balance must be reached between providing reasonable standards (i.e., for solids removal or disinfection) that will maintain reuse incentives while appropriately addressing concerns that might be raised by public participants not well versed in wastewater treatment.

Mr. Wagner proposed the use of the term “irrigation” vs. “land application” because of the historical context (disposal) in which the latter term is employed.

Dr. Evanylo suggested that this be considered later in the regulatory development process.

Ms. Rourke indicated that the purpose of the exercise was not to establish levels of treatment but to recognize that there will be varying levels of treatment required for different reuses. To provide a point of reference, treatment level 2 was set at advanced secondary and any treatment above or below that was considered 1 or 3, respectively.

Mr. Golden and Ms. Rourke continued with the exercise and grouped the reuses according to level of treatment: 1, 2 or 3 on two large pads. The TAC unanimously rated direct potable reuse and water parks 1, and ship ballast and concrete manufacturing 3. All other reuses had mixed ratings. Where ratings were split between 1 and 2 or 2 and 3, the reuse was categorized according to the majority of ratings. Where the ratings were close or tied, the reuse was put in both treatment levels. Where ratings were split between 1 and 3 or mixed among 1, 2 and 3 for a specific reuse, the TAC discussed how the reuse should be categorized and why. These ratings were generally due to concerns of worker exposure to reclaimed water receiving less disinfection commensurate with the reuse, not protection of workers. Augmentation of potable surface water supplies and humidifiers were rated 1. Snow making, decorative water features, car washes, toilet flushing, land application-public access, irrigation of non-edible crops, rapid infiltration basins, direct ground water recharge, commercial laundries, livestock watering, aquaculture, domestic/residential reuse, and construction related activities were rated 2. Land application-restricted access, fire fighting/protection, street washing, stack scrubbing, boiler feed, and wetland treatment were rated 3. Aquifer storage and recovery, edible crop irrigation and recreational impoundments were rated 1 and 2. Wetland augmentation/restoration and cooling water were rated 2 and 3. Ms. Rourke indicated that this information provided the TAC with relative treatment levels that may need to be considered for various reuses when developing the regulations.

The TAC broke and reconvened after lunch.

Ms. Rourke discussed the regulatory framework and noted that the term “wastewater” reclamation and reuse was derived from the enabling legislation. She then asked the TAC if the name of the technical regulation should be given a different name.

Mr. Fredericks expressed concerns about the connotation of “wastewater” and suggested a shift from disposal to the development of a resource. He suggested that this water is not “wastewater” in much as it is “used” water that is being reclaimed.

Dr. Evanylo and Mr. Angelotti noted that the purpose of this TAC's effort is to address reuse of the water component and not reuse of the other materials removed through wastewater treatment. Mr. Angelotti suggested that the group consider the phrase "water reuse" which is used throughout the industry as a standardized term and is well understood by water and wastewater professionals.

Mr. Johnson echoed Mr. Fredericks’ concerns. Most TAC members agreed with this.

Mr. Golden said that the law used the term but did not define it. In the definition of “reclaimed water”, gray water was excluded.

Members of the TAC indicated that the California regulations used the term “recycled” and that most other states (and EPA) used the term “reclaimed”.

The consensus of the TAC was that the regulation should be called “Water Reclamation and Reuse”.

Ms. Rourke moved on to discuss a general outline for the regulation. Items typically included in water regulations include, but are not limited to,

- Purpose
- Delegation of Authority
- Definitions
- Applicability and Permitting
- Permitting Requirements
- Exclusions and Prohibitions
- Relationship to Other Regulations
- General Requirements

Under “General Requirements”, Ms. Rourke asked the TAC to provide their suggestions. Hearing none, Ms. Rourke then presented a list of General Requirements for their consideration which included the following:

- Application and Preliminary Engineering Report
- Demonstration of Financial Solvency (Facilities < 0.040 MGD)
- Reclamation Treatment Facility Requirements
- Reclaimed Water Distribution Systems
- Storage Requirements (i.e., for off-spec reclaimed water, for facilities with large seasonal variation in demand, etc.)
- Certificate to Construct and Certificate to Operate
- System Reliability and Operator Staffing
- Pretreatment Program
- Cross-Connection Controls
- Operation and Maintenance
- Monitoring

- Residuals Management
- Access Control and Advisory Signs
- Setback Distances
- Record Keeping
- Notification and Advisory Signs
- Closure Plan

Following “General Requirements”, Ms. Rourke also suggested the inclusion of “Treatment Standards and Reuses”.

Mr. Wagner asked whether the enabling legislation provided the purpose. Mr. Golden said that if so, the purpose could be further detailed.

Dr. Degen asked whether the regulation would impose requirements on the generators or end users. Ms. Rourke indicated that this would be addressed under “Applicability and Permitting”.

TAC members briefly discussed what a permit application for water reclamation might include and suggested the following:

- Basic information
- Preliminary engineering report (or other documentation)
- Demonstration of financial solvency
- Fees
- Prediction of consumption rate

There was a question of what would be covered in a “permit by rule”, or could be covered in existing VPDES or VPA programs.

Dr. Gilinsky asked whether a table format similar to what Washington State provided in its regulatory guidance document, could be use to convey treatment requirements for the various reuses. Ms. Rourke suggested that categories or classes of reclamation treatment be developed rather than categories for reuses. This could be illustrated in a table where all the reuses would be listed in the first column and treatment levels or categories could be shown at the top of subsequent columns. The matrix of the table could then be filled in showing what levels of treatment would be needed for the various reuses listed.

Mr. Wagner asked whether the TAC would consider the work performed by its predecessor. Mr. Golden explained that while we wanted to recognize the positive developments of the previous TAC, we wanted to avoid past mistakes and starting with the previous regulation might discourage original thinking by the new TAC members.

Mr. Wagner questioned the need to continue on this track. Dr. Gilinsky explained that following this meeting, the previous regulations would be distributed to the TAC as reference materials.

Mr. Gorski liked the tables of the Washington regulatory guidance document as they were easy to read and follow. Dr. Gilinsky noted that tables could be adopted in Virginia’s regulation. Mr. Horne noted that the Virginia Register has a specified format to follow for all regulations, which makes things

extremely “user-unfriendly”, and would prohibit the reuse regulations from following the Washington format.

Mr. Faha noted that in addition to the VPDES and VPA regulations, this would be influenced by the SCAT regulations and water quality standards. He asked how this process would improve upon the concept of discharging into a creek and withdrawing the water (essentially unchanged in content) roughly 100 yards downstream.

Dr. Degen asked whether the regulation would contemplate alternatives to reuse (e.g., long-term storage, direct discharge) if the treatment criteria were not met by the permittee. Ms. Rourke indicated that this could be addressed under “General Requirements”.

Dr. Degen noted that there would have to be some permitting mechanism included. She also discussed referring to the SCAT regulations for appropriate design conditions.

Mr. Golden discussed the concept of permit-by-rule as opposed to the general permit in that the permit-by-rule would establish requirements by which a facility could reasonably demonstrate compliance without registering for permit coverage.

Mr. Faha pointed out that a number of the reuses discussed in the meeting are already occurring under the aegis of existing permit programs (implicitly if not explicitly), and asked whether the focus of the TAC should be to develop another permit program, or develop technical guidelines.

Mr. Horne noted that because there is currently no standard approach to reuse, each region and permit writer can come up with permit requirements independently. One of the drivers for the legislation which led to the original TAC was the seen need for a predictable and certain process, with known requirements, so that all projects would be evaluated in the same manner, no matter where they were located. Without that, it is less likely that people will want to look at reuse projects.

Mr. Fredericks discussed existing drivers or incentives for facilities to undertake reclamation/reuse, including the following:

- Wasteload allocations associated with nutrient loads
- Costs of methanol or alum vs. reclamation/reuse
- Inability to obtain water use permit without demonstration of reclamation/reuse
- Inability to obtain water use permit without discharge permit

Mr. Winter indicated that in some regions of the state, there were probably a number of drivers for end users, if not the current dischargers themselves. He also noted that the permit program would provide a “permit shield” to protect facilities involved in reclamation/reuse.

It was also noted that there are different drivers for reuse in different regions of the state - what would drive reuse in the Tidewater region of the state would be different than what would drive reuse in Southwest Virginia.

Dr. Gilinsky said there needed to be a clear idea of what uses were prohibited, what uses were authorized, what would be regulated in existing permit programs and what uses would be regulated in general permits developed by the TAC.

The meeting then turned to future actions by the TAC. Ms. Rourke will distribute the draft minutes and reference materials, as well as the previous attempts at the regulation and the agenda for the next meeting.

Dr. Evanylo asked whether House Document 92 (prompted by HJR 662) could also be provided to the TAC. Ms. Rourke indicated that she would attempt to locate and distribute this document to the TAC.

The meeting was then adjourned with the intent of meeting in approximately one month.