

Reclaimed Water Rule Making Committee Meeting
November 14, 2007
9:30am – 2:30pm

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Welcome and Introductions

Angie Thomson welcomed committee members and asked for introductions. Angie introduced Craig Riley, Department of Health (DOH) who will present information requested by the committee on public health risks and requirements.

Angie asked committee members if they had looked at and thought about their homework questions; most committee members reported they had. Angie announced that in the afternoon she would break the committee into small groups to work through their answers to the homework questions.

Task 1 – Public Health Risks and Requirements

Craig Riley’s presentation discussed the public health issues in developing technical standards for reclaimed water use. He covered the basis for the current standards, treatment and disinfection standards, reliability, controls and alarms, issues with the current standards and a future focus on reuse and public health issues. Please see Department of Ecology’s (Ecology) website to view Craig’s PowerPoint presentation.

Questions/Comments:

- Nancy Winters, Ecology, explained the groundwater standards Craig described were designed to protect water quality throughout the state and needed to parallel the surface water standards. The maximum contaminant levels (MCL) attempted a 1 in a million cancer risk, but considering the economics of treatment can sometimes reduce the standards to 1 in 10,000.
- *How do they observe the gas bubble in the coliform tests?* It is a visual observation: either you have one or do not.
- *Why do some local health districts test for E coli as well as total coliform?* When total coliform is present at high levels, additional tests are needed and the health district

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can choose between testing for fecal coliform or E coli. Craig said E coli is a better indicator but fecal coliform will indicate a wider range of threats.

- It does not seem like classes beyond Class A are demanded by users; the committee should consider this when developing technical standards. A committee member provided an example of a plant that uses Class D water where worker safety issues were raised. Workers were uncomfortable with the exposure to water at a lower standard than what existed “outside the fence”.
- *Do you support ultraviolet (UV) technology for disinfection?* Craig said he likes UV because it protects the environment in areas where plants discharge into streams and rivers, but as an engineer he prefers a Chlorine system for simplicity of operation. Craig said in UV system problems in plants are usually due to design problems. Most UV plants work well.
- *How onerous is the requirement for pipe separation?* Craig said the process is comparable to the challenge of fitting 30 pounds of pipe in a 5 pound bag. Pipe separation rules are considered guidance; there are no requirements today for pipe separation. The goal is to try to keep ten feet between pipes if possible, but there are often gas and other cable lines in the same vicinity. Craig said there is a basis for the ten feet of separation that he can review for the committee if they are interested.
- *Is it appropriate to keep pipe separation requirements as guidance instead of rule?* Kathy Cupps, Ecology, said that needs to be addressed by the committee. A committee member felt the requirements for pipe separation were put in place because of a distrust that construction workers would safely maintain these pipes. The accidents that have occurred happened because a contractor was not paying attention when they should have been. Some committee members did not feel it was necessary to make a rule that amounts to telling construction workers how to do their job.
- *What is the risk of contamination under normal conditions?* Craig said cross contamination from leakage is a low risk, but you should never assume that any pipe with a joint will always be under negative pressure. Research has shown that pipes can periodically have negative pressure up to thirty times in less than a month. Craig said a question for the committee is whether they will need to regulate to protect a relatively low risk like this one.
- The committee needs to be careful not to not write regulation based on a worst case scenario. The regulation should be a rational evaluation of the probability of something happening. Regulations based on worst case occurrences it will not encourage reclaimed water use.
- A committee member commented that it may be more appropriate to talk about risk in relation to the use and design a system around that.
- *Have there been studies about how long pipes need to be and the re-growth potential?* Craig said the Water Reuse Foundation, a private research association, is looking at that. A committee member requested that someone other than industry should be looking at it as well.
- Angie asked what additional information committee members feel they need about re-growth to be able to come to a decision.

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- Nancy Winters suggested they need to know whether use of membrane bioreactors (MBR) results in more re-growth than traditional oxidation. If you have nutrient removal do you remove the potential for re-growth?
- Clint Perry said the cost and expense incurred with re-growth can be extreme, leading people to disinfect their distribution system. He said he was opposed to taking away chlorine from the distribution system. Heather Trim suggested that there are some systems where this could be considered, like in Yelm, WA. Committee members agreed that in some cases this could be considered.
- Bruce Rawls said he thought the byproducts of chlorine were low in an MBR system. Paul said it is a function of the biological oxygen demand (BOD) not the MBR. Keith Folkerts suggested the committee needs to know more about the impacts of the chlorine byproducts on the environment.
- Doug Raines suggested that the topic of the treatment needing to fit the design needs to be explored further. The committee needs to look at what is set up in the regulation and what the designer use of the regulation will be instead of a one size fits all approach.
- Karla Fowler said she would like to know how much chlorine residual is needed if the existing standard is higher than it needs to be, and if it is necessary to de-chlorinate, what is involved to do it. Craig added that it would also be good to define whether they are regulating the total chlorine or combined in the residual. Kathy suggested looking at what options there are for line maintenance beyond chlorine.

Task 2 – Updates

Removing Barriers Sub-Task Force

Melissa McEachron, Ecology, said the Removing Barriers Sub-Task Force has been developing a work plan and deciding how to prioritize issues throughout the next year. The committee prioritized topics for the beginning of the year that would effect statutory changes for 2009. Melissa said she provided the group with additional information on the full time employee (FTE) allocations from 2006 and 2007. She noted that most of the engineers working on reclaimed water projects in our region are not actually funded through reclaimed water.

Melissa said the Governor's directive added some planning and "harmonizing" requirements, and the Removing Barriers committee is the best place to assign them. Over the next six months, the committee will work on these extra assignments in addition to the work already underway. Clint said the committee has been given a considerable amount of extra work, on top of an already full schedule.

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Clint also noted the committee received a report on the funding level at DOH and Ecology. The information highlighted the lack of funding at DOH and Ecology and the need for additional FTEs focusing on reclaimed water issues. Bill Peacock elaborated that the group made a recommendation to change the way funding is allocated so they do not have to wait to fund projects and can start a marketing campaign to sell reclaimed water. Walt Canter said there has been a paradigm shift between DOH and Ecology, but it may require a third party to come in and look at a new way of doing things and make suggestions on how to make it work better.

Funding Sub-Task Force

Hal Schломann said the Funding Sub-Task Force has been discussing how much money is needed, when it is needed, whether it should come from grants or loans, and where they should go to find it. The Department of Revenue (DOR) commented on the committee's proposal and made suggestions on what would be feasible.

Karla said the group also discussed the kinds of projects that should be eligible for funding. There was a sentiment to support projects with a defined reclaimed water component rather than just wastewater. Commercial and industrial projects were discussed, as well as public vs. private projects. The group thought the focus should be on funding reclaimed water projects "after the plant" because there are other funding sources for treatment plant projects.

Bruce said the draft report suggested grant money be offered for feasibility studies and designs but construction project would only be funded through loans. He said in order to promote reclaimed water they need to make it economically feasible. Current funding programs only provide grant money to hardship communities, implying reclaimed water is only important in hardship areas. A model for grants vs. loans has not been built but needs to be looked at.

Keith noted that reclaimed water should have environmental benefits. He said it seems like the Funding Sub-Task Force is focused on revenue sources and he would like the group to also look at how grants could be available for projects that do not create revenue streams. Bruce said the group developed a rating scheme that recognizes environmental benefits.

Angie said the committee's work on the report is complete and the committee does not have a next meeting scheduled. However, as other groups continue to meet, there may be some issues that require the Funding Sub-Task Force to address in a subsequent meeting.

Nancy clarified that the reports are not final until they have been rewritten in "plain talk", the agency standard. She cautioned committee members that what they have seen will not be exactly what goes in the final report that comes from Ecology.

Questions/Comments:

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- *When will the full committee get to see the report?* Kathy said Ecology's deadline is December 31st. Angie said there was a suggestion from the Funding Sub-Task Force to present the final report as a way to provide closure for the groups work. Heather said the sub-task forces are not connected to the larger committee, but ultimately all committee members are responsible for the report. Heather said she did not feel like there was an adequate process for review of the report by committee members. Heather requested that the report be emailed to committee members to review.
- Angie asked if it would be possible for committee members to review the report. Kathy suggested the committee could meet on December 5th to review the report in draft form. She said if committee members have comments they could be incorporated as an appendix to the report and could reflect committee member's and their organization's thoughts about the report. Kathy clarified that the report is an Ecology report, but if committee members feel that their advice was not incorporated, then they could say so in a letter. Ecology would attach any letters as an appendix to the report.
- Bruce clarified that the Funding Sub-Task Force is not obligated to have the full committee review the report under 6117, Section 10. This section says the report to the legislature comes from the Funding Sub-Task Force, not the whole committee. Kathy confirmed that this is correct.

Task 3 – Answer the Homework Questions

Angie broke the committee up into three groups to discuss the homework questions. Each committee had 45 minutes to work through the questions. Angie said this exercise is an opportunity for Kathy and Melissa to gauge the progress of the committee on answering the questions and help develop a work plan for making decisions through 2008. At the end of the 45 minutes each group reported back on their answers. Below is a summary of each group's answers and comments to the homework questions.

Question 1: How does adequate and reliable treatment differ from AKART?

- AKART makes us too technology dependent and needs to be more focused on the end use. AKART might not give us enough flexibility.
- AKART is subjective, when is enough, enough? Focus on adequate and reliable instead of AKART.
- Need to form a technical advisory committee to set up standards; performance for the specific end user.

Question 2: What does the term "at all times" mean; it is a goal or a requirement? How do we measure it?

- Account for environmentally significant occurrences. Requirement if it defines variation from standard depended on use, risk and treatment method. Measure by process and product.
- Requirement. Will not be able to test everything constantly, but turbidity is a preferred test.

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- Based on use and must be measurable.

Question 3: Do these classes (A, B, C and D) still work. Should we keep or modify them? How should we incorporate other water quality requirements? Use-based requirements – suitability for the use; environmental protection requirements?

- Modified by use, allow for future technologies and performance based.
- Classification system. Class A is so different if you could characterize it differently it would be helpful. Default to existing standards.
- Can be confusing, some could be lumped together, a hybrid of use with classification. Keep it simple, would strictly use-based fall into sections of water quality?

Question 4: Does oxidized require biological treatment? Should oxidized wastewater include nitrification? When should Class A meet the 30 mg/L BOD and 30 TSS requirements for oxidized wastewater? Should the final reclaimed water for Class A designate more stringent requirement for BOD and TSS than this?

- Technology will make a difference. Yes, may differ with emerging technologies. Before final, should be lower.
- Get experts to write the regulations.
- Standards need to be updated and based on use.

Question 5: For Class A, is a chemical coagulant always needed? What is meant by an equally effective method? Can the coagulant be added within a secondary clarifier or must it be added following the secondary clarifier?

- Always no, depends on use. Confusing and undefined. Need experts on treatment process and technology and what is necessary for the environment and health.
- We do not care how they get there, but effective enough for standards.
- Not always needed, equally effective method will meet standard. Use based.

Question 6: The definition of filtered wastewater includes undisturbed soils or media filtration, but not membrane filtration. How does this relate to groundwater infiltration? What should be the definition for membrane filtration? Is turbidity the appropriate indicator for effective filtration? Would TSS be equal or better?

- Effective enough to meet standards, where are you going to apply it and how will you measure it?
- Statement 1 is accurate based on current definition but is not sufficient. Groundwater infiltration: need experts. MB filtration, barrier based. Turbidity is best indicator.
- Cannot have redundancy, soil does perform function, river bank filtration and depending on use could be adequate.

Question 7: What is the difference between Class A and B reclaimed water disinfection standards? Should Class D – which has very limited use – have a disinfection standard higher than the disinfection required for surface water discharges?

- No difference. Use-based statements are the kind of wording that ideally all the previous topics should address.
- Class A requires different level of treatment implies a different performance standard. Performance plus treatment technique implies a different standard. The difference is a

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physical barrier removes some organisms at different rates than with another system. You cannot achieve Class B without filtration.

- Class B is not technically feasible. Based totally on use, but we do not have anything on environmental impacts and you need those before you apply it.

Questions/Comments:

- Kathy said as a regulator she does not like Class B, but thought it might be useful if a plant did not quite meet Class A you permit them as Class B. Heather suggested if it will be used this way then the regulations needs to be rewritten.
- *Are there uses where bacteria removal is not as critical as it is in Class A to protect human health?* Kathy said there are, the difference is the disinfection requirement. Bruce suggested starting with where the water will be used, what treatment, and then define the standards based on that for Class.
- Kathy asked committee members if they agree that they should move to use-based standards. Committee members said yes.
- *What if a use comes up in a few years that does not fit the process? Will you need to develop a way to deal with that if you go with a use-based system?* Keith suggested there could be a process to incorporate new uses by identifying a similar existing use. Heather said if this is the case they would want it more defined.

Wrap-Up and Action Items

Angie said December 5th is the committee's next scheduled meeting time. Angie asked committee members if they would like to meet in December to review the report draft or if they would rather not meet and have the report distributed electronically. If the committee waits to meet until January, the scheduled meeting day is set for the fourth Wednesday of the month.

Many committee members said they would meet in December if there was a salient topic to discuss, but would certainly like to see a version of the draft report. A few committee members commented that they would appreciate the time to discuss the draft report as a group and have Ecology report on where they are in the review process. Some committee members said they are expected to brief their organizations on the draft report and therefore would like to have Ecology review the report for the committee. One committee member suggested that the homework questions be brought back at a future committee meeting because they could inform the answers further at a later date if they had more time to digest and review with others in their field. A committee member also suggested there were some additional questions that could come from Craig's presentation and it would be good to schedule time to come back to that topic as well.

Heather Trim said that March 26th is the same day as the South Sound Science Symposium, so that committee date should be switched. She also requested that some of

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the committee meetings be scheduled on alternative dates so that more people could participate. *[Note from Melissa- We are working on rescheduling the March 26th meeting date. Also, we conducted two methods to determine a day and a week for meetings. The results = 4th Wednesdays of the month worked for almost everyone.]*

Kathy said she heard a lot of comments on bring in technical experts during today’s discussion. She said she would like ideas about how to engage more technical experts. Paul suggested that the Pacific Northwest Clean Water Association (PNWCWA) and the Water Reuse Foundation could be brought in to address the development of technical standards. Craig said he thought the Water Reuse Foundation would support that suggestion, but do not have funding. Bruce said if there was a defined process and set of goals, he could have his consultant do some work on technical standards. Bruce suggested that if everyone on the committee donated consultant’s time they could get this done quickly. Other committee members agreed they would participate in that. Kathy suggested doing both: have Paul’s organization lead the effort and use volunteer consultants when necessary. Kathy asked if committee members were comfortable with this approach. Heather thought it would be good to have someone from the EPA in California working on it as well. Kathy suggested organizing a peer review group with University professors and other regulators to review it.

Doug suggested bringing in someone from inside the plants to provide an inside perspective on what works and does not work. Kathy said they did this in during a 2003-2004 operator workshops and could do something like that again to get their input.

Kathy said she would send an email out to the group to clarify the December meeting. She will investigate whether they can send out the report electronically and then prepare a presentation for the committee about the executive summary and key points to discuss over a conference call in December. She asked Paul to talk with PNWCWA to see if they could participate.

Melissa announced that the first meeting in January will be in Lacey at the Ecology building. They are still working on locations for the rest of the meetings.

Meeting Attendees

Department of Ecology

Katharine Cupps, Agency Lead

Melissa McEachron, Rule Writer

Angie Thomson, Facilitator
Emily Neff, Note Taker

Department of Health

Maryanne Guichard, Director, Office of Shellfish and Water Protection
Dave Lenning, Environmental Health and Safety

Committee Members and Alternates	Guests
Chris McCabe, Association of Washington Businesses	Doug Lacy

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Patrick Williams, CELP	
Tim Wilson, City of Lacey	
Bill Peacock, City of Spokane	
Doug Raines, DOC	
Nancy Winters, Department of Ecology	
Clint Perry, Evergreen Valley Utilities	
Susan Kaufman-Una, King County	
Keith Folkerts, Kistap County	
Karla Fowler, LOTT Alliance	
Heather Trim, People for Puget Sound	
Paul Schuler, PNCWA	
Bruce Rawls, Spokane County	
Ginger Desy, Sno-King Coalition	
Hal Schlomann, WASWD	
Walt Canter, WASWD	
Ecology Staff	
Jim McCauley, Department of Ecology	