

Reclaimed Water Use Rule Advisory Committee Meeting
October 11, 2007
9:30 – 2:30 pm

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Welcome and Introductions

Angie Thomson, Rule Advisory Meeting facilitator, welcomed the committee members and asked for introductions. The agenda items and provided an overview of the meeting’s purpose and objectives. Angie announced the next Rule Advisory Committee Meeting will be on November 14th and the following meeting will be on December 5th.

Task 1 – Technical Standards-Reclaimed Water Quality

Kathy Cupps, Department of Ecology (Ecology), said she will be focusing on water quality during this meeting. Kathy said the biggest issue for the committee to tackle is how Washington State should address reclaimed water quality over the next 10-20 years. For the purpose of discussion, she asked committee members to assume that all other issues have been resolved.

Kathy reviewed the action items developed from the previous meeting. These included a review of existing standards in Washington State, the technical standards from other states, Pharmaceuticals and Personal Care Products (PPCP) and Endocrine Disrupting Chemicals (EDC), and a schedule for the technical standards work plan. The topics for this meeting will focus mostly on the basics of wastewater treatment and water quality to make sure everyone understands the issues.

Committee members were asked to read Section 1 of the Reclaimed Water and Reuse Standards from 1997 before the next meeting. At the November meeting the Department of Health (DOH) will discuss public awareness of pathogens and public health

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protections. Ecology will also present the information from their Environmental Assessment Program on PPCPs when that work is complete.

Kathy summarized the committee's comments at previous meetings regarding Technical Water Quality, Risk-Based, and Technical Barriers standards. She outlined the committee's questions and concerns with each standard to make sure all of the information was correct. Kathy asked the committee to think about the questions presented in handout #4 as questions for further thought. These will be helpful as the committee works through the standards development.

Questions/Comments:

- If the intent is to use reclaimed water for irrigation, then the committee needs to look at rules and policies around irrigation. Irrigation water does not have the same standards that potable water or sanitary sewer discharges do, and operators do not need the same qualifications.
- It might make sense to have treatment plants meet a certain standard for water quality and then hand it off to the irrigators.
- Irrigation is handled separately from any potable supply. There are no quality considerations for irrigation supply, and within an urban setting there are no irrigation applications that follow standards. Kathy said the water still needs to follow Ecology's water standards for the state. Water discharged into the irrigation ditch would have to meet standards, but there are no standards when the irrigator draws the water out.
- *How do you think the local agency would feel about adding water to their supply?* Kathy said that would be considered a blended supply: blending reclaimed water and state water supply for irrigation purposes.
- It is a potential barrier for use to put reclaimed water in the irrigation system because the irrigator may not want to contend with the regulations Ecology would impose.

Task 2 – Technical Standards-Reclaimed Water Quality Answering Your Questions (Kathy Cupps)

Kathy reviewed a key concept chart and highlighted that it is technical possible to produce reclaimed water of any quality. Kathy reviewed the questions the committee is focusing on and asked if she missed any; no one had any questions to add. Kathy then reviewed the established practices, available information and educated guesses that can be used as sources of information when developing a rule. Kathy asked if there are any other sources of information committee members would like to add; none were suggested.

Kathy provided a brief presentation discussing "What is in our water and how did it get there?" This included a schematic of water inputs and a review of the elements effecting

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water quality. Kathy reviewed how water quality can be impacted at each of the following stages: Natural Water, Public Water Supply, Urban Wastewater, Wastewater Collection System, Wastewater Treatment Facility, Primary Treatment, Secondary Treatment, Advanced Treatment, and Removing Dissolved Solids.

Questions/Comments:

- Each value of treatment has a cost associated with it. Ecology should be able to show the public what the total cost could be so that you do not start out at one treatment level and then escalate the cost as you advance the treatment technology.
- A potential barrier is the waste stream associated with the treatment; that has been a challenge in some areas.
- Melissa McEachron, Ecology, said that looking at the slide, some reclaimed water producers are producing reclaimed water that is higher quality than the potable water supply. It is important to show that reclaimed water can be treated to very high levels.
- *What is the state's role in regulating high purity or custom uses?* Kathy said they will be discussing that topic and will ask for the committee's input as they get into the development of these standards.
- *If you treat reclaimed water to a high quality you might have a year round supply instead of a seasonal supply?* Kathy agreed that there may be a customer that will want a year round supply if it is treated to a certain level. Kathy said the standard is "adequately treated to be suitable for the use", so Ecology will have to make some decisions about what is appropriate.
- *There are a lot of industries that take potable water and put it through their processes. To some extent you are singling out reclaimed water when some potable water must be treated for certain uses as well.* Kathy said that an industry might have a water right for natural water and may be treating it themselves to a certain standard, so it is not just reclaimed water that needs further treatment.

Task 3 – Technical Standards-Reclaimed Water Quality Answering Your Questions (Kathy Cupps)

Kathy prefaced this discussion topic by saying that it will be discussed as much as possible today and will be a topic at future meetings as well. Kathy reviewed factors that affect the suitability of use for the following reclaimed water uses: Environmental Contact Uses, Agricultural Irrigation, Urban or Landscape Irrigation, Industrial and Commercial Uses, Surface Water Uses, Groundwater Recharge, and Direct Potable Use.

Kathy summarized problems with parameters of concerns including microbiological organisms, particulates, cautions and minerals, color, pH, heavy metals, biodegradable organics, fats, oil and grease, nutrients, dissolved solids, and trace constituents. Pathogens are a concern as well but DOH will talk about this next month. Kathy explained the concept of nano-particles that include silver, gold, and other substances.

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These particles are so small they go through our treatment systems. They are found in make-up, the inside of washing machines, band-aids, and food products.

Kathy reviewed the definitions of Indicators and Surrogates. Some committee members disagreed with the use of the terms so Kathy suggested they use different terms (limit and performance standard). Kathy reviewed the common and potential levels of biodegradation of organic materials, particulate removal, pathogen removal, nutrient reduction, dissolved solids, and the measure of environmental life impacts.

Committee members were asked to read the introduction of the 1997 standard (in handout), and answer the ten questions for next month. Kathy reviewed the ten questions in the homework assignment.

Questions/Comments:

- *Why would Ecology want to treat reclaimed water to a certain level for a reason that does not directly affect public safety or environmental impacts? If you talk with most industrial users they want a consistent supply. If your customer has a particular issue with the mineral in the supply it might make sense for the industry to deal with it.* Kathy said the statute requires Ecology to look at suitability of use and this is a part of that discussion. It may or may not end up in the regulation.
- A committee member suggested looking at Fairfax, Virginia, who has been discharging potable water from the treatment plant for 25 years. Kathy said these uses might be more common than they realize.
- *Does the rule making process need to address everything that was reviewed?* Kathy said it needs to address everything by December of 2010 and a draft needs to go to the public for review in 2009.
- *Can the committee reserve a section for the future so everything does not have to be addressed now?* Melissa said she would caution the committee against this because it needs to be complete enough to put into regulation, but said it would be possible to defer some of these issues. Kathy said the committee could say direct use as potable water would be done on a case-by-case basis, or only if it is in the interest of the public. Melissa added that she would not want to see pieces missing in the regulation that would make it unusable once adopted.
- *Will these rules have a life of 15 years?* Melissa explained that once the rule is adopted, it is in place until changed (by statute or WAC update). Ecology is required to review WACs every five years and changes are usually made at that time. Melissa also said in her experience with emerging programs, changes identified before the first five-year review are tough to get adopted in that timeframe.
- *As 2009 gets closer, would it make sense to say to the legislature that there are some areas where the committee cannot come up with every use and need to amend the statute accordingly?*

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- *Would it be easier to mandate the use based on the technology? If a producer is doing Reverse Osmosis then is it okay to use for anything?* Technology based standards were suggested and may be easier. Technologies will evolve over time, so with simple modifications you could change the standards to create a more universal product.
- *There are probably 15-20 issues with the existing regulations and if the committee can address those then 90% of the work will be accomplished. The committee should not be overwhelmed at this point.* Kathy said she was trying to give the committee a background and framework that will prepare them to address the issues. The committee needs to make sure they do what works for Washington because a lot of previous work is based on other states.
- *Why is the committee not considering class based standards?* Kathy said that class based standards are a possibility, but the framework tends to break down with the environmental uses. The system that was predominantly created for pathogen based treatment is hard to translate to environmental uses.
- *How does Ecology's guidance fit into this?* Ecology has been using the 1997 wastewater standards to regulate reclaimed water. There has been a lack of consistency and clarity, and some things are in the statute that should be in guidance. The committee needs to sort out what belongs in guidance and what belongs in regulation.
- *Are there smaller particles that will go through a Reverse Osmosis plant?* Micro constituents are the new term for these particles. Many of those constituents are naturally occurring and many are removed through Reverse Osmosis treatment. There is research that addresses PPCP and EDC but not nano-particles specifically.
- Industrial uses for reclaimed water should not be subject to further treatment standards since potable water is not specifically treated for industries. The state should focus on the human health and environmental impacts.
- *Could a user agreement be developed to work out the details of industrial users?* Kathy said potable water has standards for industrial users but reclaimed water does not. Kathy raised the question whether Ecology should limit Total Dissolved Solids (TDS).
- *Maybe Ecology should set a limit for the highest standard of reclaimed water the agency will create.* Kathy said that was considered in Ecology's surface water standards evaluation. She offered to provide that information to the committee. Kathy felt that Ecology needs to be able to say to industry that water is suitable for a specific use, because individual users need to know if they have to do additional treatment.
- One problem is that we have salted out our groundwater supplies. It would seem appropriate to provide guidance for any reclaimed water that could impact the groundwater.
- When an industry uses potable water, they conduct an inspection prior to use to ensure it is safe. They are not getting information from the water supplier, they are independently bringing someone in to test the water and get it to a level that is safe.

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- *What about mutation of certain chemicals? For example, what if a plant discharges water into an aquifer and did not get the steroids out and they grow and mutate. Is anyone evaluating these types of scenarios?* Class A water is never injected directly into the aquifer, but instead filters through the soil column. The standards for direct injection require reverse osmosis and meeting the most stringent standard – drinking water or ground water standards before recharge. However, there is ongoing research on what the impacts could be in situ and the impacts when stacking these chemicals.

Task 4 – Technical Standards-Reclaimed Water Quality (Dave Lenning)

Dave Lenning, DOH, presented to the committee about the risks of on-site systems (OSS). Dave said risk management decisions have been made with regard to OSS and felt that the state needs to make these systems more reliable.

Dave introduced the challenges of managing wastewater in Puget Sound. He demonstrated how OSS fit into the water cycle, as well as the typical system components and functions. Dave reviewed the necessary conditions for OSS and the processes which allow the treatment to occur. He discussed the issues with improper soils, sensitive sites, and the need for good design. This led to an evaluation of the failing systems and the new rules that attempt to address the OSS problems. Dave presented some questions that address how reclaimed water fits into OSS and things to consider in applying the new rules.

Questions/Comments:

- *What is the required separation between the bottom of the drain field and top of groundwater?* Dave said it is a minimum three feet, with the exception of Kitsap County which created an ongoing monitoring system to allow a two foot vertical separation.
- *How do you verify the treatment?* As the flows get smaller, the potential for doing monitoring get impractical because of cost. The technology must verify it can meet the standard up front. There is a protocol to follow to make sure the technology meets the standard. It is a weakness, but this is the best DOH has come up with.
- *What are the standards to discharging into an aquifer?* Dave said they recognize there will be things that will make it into the aquifer, but it is so small it is a manageable risk.
- *How do you make sure you are intercepting the plume when testing for compliance?* Similar to the injection program, they look at the point it enters the aquifer. Dave said DOH's manual suggests boundaries to be the mechanism. Right now they need to define their risk management process to make it acceptable. Legislators will try to weaken requirements for operations and maintenance because of cost. DOH needs ongoing assistance if it is a long term viable options. Otherwise, Dave felt OSS should be removed and everything should go to sewers.

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- *What about upland disposal?* The questions would be similar to aquifers, but the loading rates might be different. The weak point for upland disposal is how to make sure the contaminants are removed by the time it enters an aquifer. If they do not monitor they could get to the point where saturated flows are occurring.
- OSS provide an important benefit in recharge. The more recharge you get through an OSS the more flow you could have. There is research happening on what the impact would be to summer low flows if everything was sewerred.
- *How does a system get updated? At a time of sale?* Dave said typically that is when the inspections are done, but that is not frequent enough. In Kitsap County they certified people to look at OSS and understand what is necessary to keep them functioning.
- *Aren't there requirements on pumping?* The requirement is at least every three years for gravity systems and every year for everything else. It is left up to the homeowner and is enforced by the public health departments.
- *How do you see individual Membrane Bioreactors (MBRs) fitting in? Does the soil based treatment become a disposal component?* It depends on what the decisions are based on. If the soil tests prove the soil is adequate, then it will become a disposal and treatment. There are 35 health jurisdictions in the state that are not aware of the new standards and should be involved in this process because it will affect them. They need to know what kind of treatment they should be meeting, and it up until now it has been left to non-ground and surface water people to decide.

Task 5 – Committee Updates

Angie asked subcommittee members to summarize their recent progress and share any thoughts or concerns they may have.

Water Rights Impairment Sub-Committee

Chris McCabe said the Water Rights Impairment Sub-Committee has been trying to define all of the issues with impairment. There is a report due on December 31st for this committee, which will provide the reasons this is a complicated issue and requested more time. Lynn Coleman is working on a draft report for the legislature that will go to the governor. The Water Rights Impairment Sub-Committee will see a draft for review next week.

During the last two meetings the committee members worked to agree on impairment issues that need to be addressed. The approach is to come up with scenarios to move reclaimed water use forward. There are two or three areas where the committee can agree there is not impairment. If they can agree to those then they can put them in a rule to be exempt from restrictions. The committee also went through an analytical process based on Ecology's model to frame eminent domain and condemnation if a water is impaired.

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Clint Perry, Evergreen Valley Utilities, added that the committee also discussed activities that did not decrease total water supply available, or were water budget neutral. They talked about quantity and quality of 9054 and overriding Concern of Public Interest (OCPI). Kathy said they got the draft report from the Environmental Law Institute to see how this issue was dealt with in other states. They may ask the Environmental Law Institute to do some more work on specific questions. Clint was not sure the committee would ever come to a consensus and will need to present different points of view in their recommendations to the legislature.

Removing Barriers Sub-Committee

Melissa said the Removing Barriers Sub-Committee took the task of developing a work plan seriously. They reviewed the items this group recommended and the items in E2SSB 6117. Melissa is working on getting a first draft of the unresolved legal issues. There is still more work on the work plan, and they need to define which topics should go in which meeting sections. They started work on organizational structure and the initial presentation on DOH and Ecology roles and responsibilities. The committee developed additional homework assignments.

Walt Canter, WASWD, said that the fourteen items developed from the brainstorming at the last Rule Making Committee Meeting were broken out into funding, economics, public outreach and technical with one stand alone. They looked at which other committees had been assigned those as a task. Those committees will take a first shot at addressing those and report back. As an example, Walt said the long-term funding committee will create a report that the Barriers Sub-task Force will look at before they address the funding questions. Bill added it was difficult to look at removing barriers without knowing what the barriers other groups might be working on are.

The Sub-Committee is meeting again next month. They are making progress and working to fulfill the legislative responsibilities. Walt said the Rule Making Committee serves as a focal point to pull information together and will help the Barriers subgroup to frame their scope. The group will start to schedule topics into meetings so they are developing new information.

Funding Sub-Committee

Bruce Rawls, Spokane County, said the Funding Sub-Committee is working on determining needs. They concluded it was hard to determine needs because there are no feasibility studies or cost estimates for projects. The sub-committee is also looking at new sources of funding. The Department of Revenue has been a great help with this task.

The group looked at a tax on bottled water at wholesale level, which would generate \$25 million per year with a 2 cents tax per 20oz bottle. The committee also looked at taxes on soda, beer, detergents, drugs, and toilet paper as funding sources. The suggestion of increasing the tax on sewerage and water systems was addressed. Water could generate \$10 million in revenue if you could recoup some of the money that goes to the general

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fund. The Funding Sub-Committee looked at reducing the cost of a reclaimed water project or exempting sales tax on project. The Department of Revenue was against this because case law indicates you have to treat federal taxes the same as local taxes, so if a local project is tax exempt it would exempt federal projects too.

The committee favors utility taxes, a bottled water tax, and incentives through tax relief on reclaimed water projects. The group identified the need for several revenue sources. Bruce said their report will be in draft form tomorrow and will allow a four day review by the committee. He said the issues were way more complex than they had time for and Ecology staff has been given vague guidance on many topics. Some questions the committee has discussed include:

- grant programs or loans
- what should be eligible for funding: treatment plant or just processes after the plant
- should it be limited to municipal and residential flows or what happens if it is industrial, tribes, public agency working for the benefit of private enterprise
- should funding be for existing flows only or twenty years of growth
- should there be a ceiling on grant or a max percentage
- should it include anything on private property or just on public right of way
- should grant be available for the purchase or compensation of water rights

Bruce said the legislature asked for funding in high priority areas, but did not define high priority area. The committee agreed they should fund facilities plans but not engineering reports. Bruce said the committee did not finish any of this work and they did not get a lot of firm conclusions. They will meet again in November and will review the final report.

Questions/Comments:

- *Is the assumption that the questions from the legislature was how do we fund this?* Kathy said sometimes there are certain kinds of uses that are a benefit to the state but should not be under local jurisdiction. If there is something beyond the rate payers these things should be investigated.
- *What if someone was building a treatment plant and they just needed to add membrane for additional treatment, should that be funded?* Kathy explained that wastewater plants have many funding sources and they did not want people applying for reclaimed water money for wastewater treatment plants. The money can be used for additional treatment or reliability on site after a treatment plant is built.
- *How long does this subcommittee go?* Their report is due at the end of December and committee is intended to end at the end of the year. The committee will talk about the need to touch back in 2008 to make recommendations for 2009 funding.
- The Puget Sound Partnership will be looking at reclaimed water as a part of their work so the committee should bring in whoever is working on it there. The funding committee should bring Jim Cahill of Puget Sound Partnership into the discussion.

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- If you are looking at the Sound you need to work on Total Daily Maximum Loads (TDMLs). If the amount of money the state has taken away from Ecology was restored, then the funding task would be easier.

Task 5 – Continued: Preliminary Results on the Conservation and Reuse Survey (Eugene Radcliff)

Eugene Radcliff, Ecology, said the Conservation and Reuse Survey was a quick way to get a general idea of where the state is at with reclaimed water. The survey was not scientific. Eugene reviewed the eleven survey questions and the results to each question. They had a total of 38 responses statewide, 31 of which were complete surveys. They looked at four different size communities: < 10,000, 10,000-50,000, 50,000-100,000, and > 100,000.

The survey results demonstrated that many organizations produce or plan to produce reclaimed water, many organizations mention reclaimed water in their local ordinances, organizations prefer grants or low interest loans for financing, and that the majority of organizations that responded were positive about reclaimed water in general.

Questions/Comments:

- *Were the counties that responded in the sewer business?* Eugene confirmed that they were. He reviewed a chart that outlined the type of facility and highlighted the five that are just water suppliers.
- *How many entities received the survey request?* Eugene said he does not have that information yet. The survey was put together quickly and someone else distributed it.
- *Why did you differentiate between reclaimed water and water reuse?* Kathy explained this was one assignment from the legislature.
- *How many of these know what reclaimed water is?* Eugene said he did not know, but they will do something more comprehensive next year.
- It would help to have the percentages included in the presentation.
- There was something sent out that looked at reuse vs. reclamation. Reuse is broader. If we are looking for a name, a broader name would be better.
- DOH and Ecology have the National Pollution Discharge Elimination System (NPDES) list serve that you could distribute the survey to in the future.

Wrap-up and Action Items

Angie reviewed the homework items for committee members: read section in handout and answer questions. Also Angie announced that the fourth Wednesday of month was selected for the Rule Advisory Committee Meeting date for meetings in 2008.

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There will be a presentation by Craig Riley from DOH at the next meeting on Wednesday, November 14th at Ecology building in Lacey.

- Committee members were asked to read Section 1 of the Reclaimed Water and Reuse Standards from 1997 before the next meeting
- Committee members were asked to read the introduction of the 1997 standard (in handout), and answer the ten questions for next month. Kathy reviewed the questions.

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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, Citizen
Bonne Beavers, Center for Justice	Albert Tripp, City of Airway Heights
Tikva Glantz, City of Olympia	Gina Baxter, RW Beck, Inc.
Bill Peacock, City of Spokane	
Nancy Winters, Department of Ecology	
Clint Perry, Evergreen Valley Utilities	
Peggy Leonard, King County	
Keith Folkerts, Kistap County	
Don Perry, Lakehaven Utility District	
Ken Butti, LOTT Alliance	
Jim Hagstrom, PNCWA	
Paul Schuler, PNCWA	
Scott Rodman, Puget Sound Partnership	
Skip Schott, Sno-King Alliance	
Bruce Rawls, Spokane County	
Hal Schlomann, WASWD	
Walt Canter, WASWD	
Craig Riley, DOH	
Ecology Staff	
Eugene Radcliff, Department of Ecology	
Alissa Ferrell, Department of Ecology	
Jim McCauley, Department of Ecology	