THE IMPORTANCE OF PROTECTING

DRINKING WATER AQUIFERS FROM CONTAMINATION

As stated above, sixty-five percent of Washington's population use groundwater as a drinking water source, and in many areas this water is delivered untreated to the end user. It is essential to protect these aquifers from pollution that could render them unusable or cause long term widespread health problems. Once polluted, it is impossible in many cases to remove the pollution from the aquifer.

Many studies have been done on the effects of pollutants on water quality. However, there are many unregulated contaminants entering water bodies and many unanswered questions. The following is from a Metropolitan King County Council Regional Water Quality Committee Staff Briefing on Toxics and Chemicals of Emerging concern in Marine Waters, September 5, 2018 ("Briefing"):

> *Under existing law, many* ***contaminants of emerging concern (CECs)*** *are not regulated, or assessed for toxic impacts, before they are introduced into commerce or industrial processes. SRKW and their prey are exposed to these chemicals—many of which are endocrine disruptors—because* ***they often find their way into our waters through wastewater treatment plants and stormwater runoff.*** *It can be very expensive to clean up or provide water quality treatment at these "end of pipe" locations (i.e., stormwater and wastewater treatment).*

This Briefing focused on the impacts of King County's sewage treatment plants on water quality in Puget Sound, but it also contains valuable information regarding contaminants primarily from stormwater flowing into those plants or directly into Puget Sound. These are the same stormwaters that are the subject of this current rulemaking. It is important to keep the contaminants in these stormwaters from polluting Puget Sound, but it is even more important to keep them from polluting our drinking water aquifers.

The consequences of polluting just one aquifer used for drinking water are potentially catastrophic. Not only is it difficult or impossible to extract contaminants and restore a contaminated aquifer to drinking water quality levels, the health effects on those drinking contaminate water can be significant.

Contaminants entering a very large body of water such as Puget Sound are disbursed and diluted. This is very different than what happens in aquifers (experts to complete)

The Briefing reports that runoff and air deposition are the "primary pathways" for toxic contaminants to reach receiving waters:

> *<u>Half-Century Assessment of the West Point Treatment Plant</u>*
> *The resulting report, entitled "Half Century Assessment of the West Point Treatment Plant[2]", cited a Washington Department of Ecology Report "Control of Toxic Chemicals in Puget Sound[3]" indicating that wastewater treatment plants account for less than 10 percent of the load to the marine environment of a selected 16 key contaminants. The Half-Century Assessment concluded that* ***"many toxic contaminants entering the waste stream are generated by runoff from the watershed or accumulated through air deposition…the primary pathway for most of these contaminants to reach receiving waters is by stormwater runoff,*** *and the toxic contaminants in their current concentrations do not significantly impact West Point operations or treatment effectiveness." Briefing, P. 10*

The Briefing also reports that the level of toxics from urban surfaces is increasing:

> ***<u>Recent Reports by King County WLRD/WTD addressing Toxic Contaminants</u>***
> *In addition to the NOAA studies described above, King County wastewater and water resource agencies have completed reviews that discuss these issues, among other topics. RWQC has been briefed on these studies over the last year.*
> *The Committee approached the broad issue of the impacts of toxics in the effluent of the West Point Treatment Plant in its 2017 review of legislation directing the Executive to review the status and capacity of West Point after a half-century of service. The legislation calling for that review, Motion 14882, directed a broad evaluation of the plant's service readiness for coming years, including a review of "****the increasing levels of toxics from outdoor urban surfaces, including automotive chemicals, pesticides and herbicides, chemicals accumulated through air deposition and other toxics*** *that are directed to the plant… " p. 10*

Determining on what regulations are necessary to stop or reduce the flow of contaminants into Puget Sound is a complex problem. However, the decision to disallow deep injection wells that create direct pathways for contaminants to flow into to drinking water aquifers is relatively simple. The decision should be not to allow them in proximity to aquifers or areas that flow to aquifers because the risk of aquifer contamination is too high.

This needs to be done to protect the large segment of our State's population that relies on groundwater for drinking.

Comments on the Draft 2019 SWMMWW		
Draft 2019 SWMMWW Section (select from drop down)	**Comment**	**Comment Made By**
General comment	The overall tone of the new language regarding deep UIC for stormwater disposal still encourages the use of this technique, instead of discouraging it as a potential pollutant to drinking water aquifers. In a "green" state, such as ours, it is an expectation that we not only protect the environment, but also our human population. Sixty five percent of Washington's population use groundwater as a drinking water source. In many areas, this water is delivered untreated to the end user. Those who drink untreated water like the taste, expect it to be pollutant free, and want to keep it that way without the addition of chlorine. Clean drinking water is a necessity of life for all humans, and the State has an obligation to keep it that way. Allowing deep UIC stormwater disposal, even with limited pretreatment, jeopardizes the safety of drinking water sources. We understand that both DOE and DOH are trying to tighten up these regulations as much as possible without having to resort to additional legislation, but with drinking water at stake, is that really the best choice? A number of counties and cities have banned the use of deep UICs, recognizing the danger to drinking water sources. Development has continued to occur in these jurisdictions. Why is the greenest state in the nation not leading the way in banning these wells that have been shown for years to contaminate drinking water?	WASWD
1-4.1 Deep UIC Wells	We appreciate this new section crosswalking the UIC and NPDES programs. This greatly increases the scrutiny and requirements for installing UICs. It does not, however, eliminate our concerns over deep UICs, as will be discussed in further comments.	WASWD
1-4.4 The Presumptive Approach	The presumptive approach is not stringent enough to guarantee that pollutants will not make it into drinking water. There is a presumption by DOE that if a permit is issued, a maintenance manual is developed, BMPs are promised to be applied, DO NOT DUMP warnings are painted on the pavement, and inspections are made by the local jurisdiction once every 2 years, then pollutants will not enter the well. Anyone who has worked in the field knows this is just not the case. We acknowledge that no one can watch a site 24/7, and because of that we have to make assumptions that bad things will happen, sometimes intentionally, sometimes unintentionally. The janitor who empties the mop bucket containing industrial cleaners outside onto the pavement, the folks who change their oil over a catchbasin, all those student-led carwashes that still occur in numerous sites. Language and signage difficulties can exacerbate these occurrences. We cannot afford to allow these events to contaminate drinking water. Also, presuming what pollutants will be present, and what actually ends up there are two entirely different things. Comments we submitted for the Eastern Washington Manual reflected this with the example of Boeing parking lots. Expected are typical car pollutants, but not bacteria from hundreds of seagulls taking refuge there. Large groups of crows inhabiting trees in mall facilities just prior to dawn is also easily demonstrated, and would be missed with the quick assessment of the presumptive approach. Property uses change, and are not always easily identified by local jurisdictions, thus allowing time for pollutants to be discharged and do damage before anyone is aware.	WASWD
1.4.5 The Demonstrative Approach	If DOE insists on allowing deep UIC wells for stormwater, they should be held to the demonstrative approach for all that are proposed. There should be permanent long term monitoring of all deep UIC wells, such that when it is shown that pollutants are reaching groundwater, the wells can be decommissioned. There should be a bonding requirement for replacement of these wells, and mitigation of future damages to groundwater.	WASWD
General comment	In the Eastern Washington Manual, Appendix 6, it is stated that deep UIC wells have a life expectancy of 20 years. We cannot find that reference in the WW Manual, and wonder why not? We would reiterate that all stormwater structures would have a finite lifetime, and plans must be in place for the replacement of said structures. Some are very amenable to remodeling and retrofit, like ponds and raingardens. Deep injection wells are not amenable to easy retrofit, or even maintenance, and their use for stormwater disposal new enough that we are not aware of successful rehabilitation in this area. We would suggest that for each well proposed, sufficient reserve area be set aside for replacement of the deep UIC wells over the lifetime of the project. We see this occur with septic systems, where when new construction is proposed, it must first be shown that sufficient area exists for a new drainfield, otherwise the project cannot go forward. Some areas should just not be built upon, and deep injection wells are not a panacea to make limited lots buildable. Money also enters into this decision, as some builders are using this method when more traditional methods (ponds, etc) would be more expensive, even if easier to maintain. This will become a public relations nightmare for DOE when these wells fail in private developments, and homeowners must bear the cost of finding a suitable substitute for something they were not aware of in the first place.	WASWD
1-4.6 Siting and Design of New UIC Wells	A UIC well is a potential source of contamination and should be sited ≥ 100 feet from a drinking water well or outside of the sanitary control area of the drinking water well, whichever is greater, and ≥ 200 feet from a spring used for drinking water supplies (WAC 173-160-171). This is a "should" statement, and it needs to be a "must" statement. Furthermore, these are not sufficient distances to protect groundwater. These distances are less than what is required in the Reclaimed Water Rule, and that is highly treated water as opposed to stormwater, with BMP treatment only.	WASWD

SSC-2 Groundwater Protection Areas	Basic treatment for 6 month time of travel is not sufficient, even for shallow UICs. We would remind you of the experience of Issaquah and fire fighting foams that have contaminated drinking water wells with over a 20 year time of travel. Also recall that this occurred with surface runoff discharges,not deep injection wells. Leaky storage tanks and surface discharges led to drinking water contamination by MTBE. Coal tar sealants for asphalt discharge PAHs to runoff. What will the next big pollutant be that is currently on no ones radar?	WASWD
1-4.7 Operation and Maintenance of UIC Wells	The description of maintenance is very skimpy. At the bottom of the page it refers to "See Appendix V-A: BMP Maintenance Tables for recommended maintenance criteria". There does not seem to be much at all in the tables that is relevent to UIC maintenance. We suggest that better maintenance criteria are developed for UIC management, including frequent checks of area around structure, review of chemicals stored and used at facility, training requirements for all personnel. Make it at least as stringent as training for municipal maintenance personnel.	WASWD
1-4.9 Source Control and Runoff Treatment Requirements	Same comment as in 1-4.7, also referenced in this section.	
1-4.11 Deep UIC Wells	We appreciate these new requirements, and state involvement in the siting of new Deep UIC wells. Reiteriting that our preference is to allow no new deep UIC wells to protect drinking water supplies, we have suggestions for additions to this list. First, there needs to be a requirement that water purveyors and those with private wells in the proposed project area need to be contacted at the outset of the proposed project. They should be able to veto the use of the UIC if it has potential to impact their wells (other methods of stormwater disposal could be used). In the event DOE does not elect to require project proponents to work with water purveyors, what is the timeline for submittal of this material to DOE? If it is witheld and only submitted 30 days prior to construction, this is not sufficient time for water purveyors and the public to comment. Again, it is essential that water purveyors are included in this process from the beginning of local permitting for the project. Next, basic treatment only for sediments is not adequate, this should be treated to the maximum of what may be expected to enter the well. Adequate spill control is necessary for all deep UIC wells (actually, for all UIC wells) due to the unexpected occurrances that happen as mentioned in a previous comment. The last sentence regarding Waste Discharge Permits is encouraging, as it reinforces that DOE will now be looking at these structures on a site by site basis. It will be good to have an evaluation of each with better criteria. Our geology in the state varies so much, that site by site is the only way to make the best determination, provided adequate information is available and utilized. We would suggest that an individual Waste discharge permit(with monitoring requirements, as discussed previously) should be issued to each site to provide for additional state oversight for the life of the well. We are aware that this would constitute an additional workload and cost to DOE, which would have to be recovered in fees, but would help ensure proper operation for its life expectancy. We would state, again, that protection of drinking water sources should always be a higher priority than the disposal of stormwater. Many ways to dispose of stormwater, only one place to get drinking water in many areas.	WASWD
general comment	A member agency of WASWD working in King County sent a good analysis stating that if stormwater is so dangerous for the Puget Sound, as verified by numerous agencies, DOE included, then how could anyone possibly justify injecting it near or into drinking water aquifers. This comment will be sent by separate email as it will not format adequately into a spreadsheet.	WASWD
general comment	As evidenced in comments above regarding contamination of drinking water by stormwater runoff not directed to deep injection wells, many of our members regard any stormwater infiltration as a danger to drinking water sources.	WASWD