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Sent: Mon, 3 Nov 2014 15:11:56 +0000
To: Russell Schreiber (Wichita Falls); Daniel Nix (Wichita Falls); Mark Southard; Shawn Garcia
Subject: DPR working guidelines
Attachments: Current TCEQ Policy on Potable Reuse 12-18-13.pdf

Russell, et al:

In our Kemp/DPR kickoff we discussed getting guidelines from TCEQ which we heard might be available. I recently requested these from Marlo Berg, and she said she had heard several people talking about these, but that they don't have any official document.

However, last December I was seeking some clarification on what TCEQ considered to be key requirements in evaluating DPR or high impact IPR projects, and I initiated an e-mail exchange which resulted in a helpful summary of their current thinking. I took the language from the e-mail and placed it in the attached Word file. It is not official, but it does reflect their edits to my original listed understanding, so I feel like it's about the best guidance we have right now.

Please let me know if you have any questions.

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Current TCEQ Policy on Potable Reuse

Provided in E-mail 12-18-2013 to David Sloan from Joel Klumpp (Team Leader, Technical Review and Oversight Team)

The TCEQ will consider approving (and has approved) potable reuse, including direct potable reuse, if adequate safeguards are provided to consistently and conservatively meet the requirements of the Safe Drinking Water Act. Key features which have been required for previous projects include:

- Case-by-case application of Surface Water Treatment Rules (SWTRs) pathogen inactivation requirements: The TCEQ evaluates the wastewater source on a site-specific basis and applies the basic principles of the SWTR to set requirements. At this time, a minimum 8-log virus (9-log if preformed chloramines are used), 6-log *Giardia* and 5.5-log *Cryptosporidium* using multiple barriers have been required for reviewed sites. Additional inactivation could be required if a project proposed treatment of wastewater that contained greater concentrations of pathogens than observed until now. The TCEQ considers inactivation in subsequent surface water treatment if applicable, but does not recognize any credit from upstream wastewater treatment processes. The public health risk cannot be greater than that for customers receiving treated surface water (one infection per year per 10,000 people drinking 2 liters of water per day). To meet that level of public health protection in the DPR WTP effluent distributed for human consumption the:
 - o Virus concentration must be $\leq 2.22 \times 10^{-7}$
 - o *Giardia* concentration must be $\leq 7.0 \times 10^{-6}$
 - o *Cryptosporidium* concentration must be $\leq 2.999 \times 10^{-5}$
- Additional treatment will be required if the results of WWTP effluent monitoring (single highest result, not averaging of results) show a single concentration that requires additional treatment to achieve no greater health risk. Example:
 - > 9.484 *Cryptosporidium* oocysts/L requires more than 5.5-log,
 - > 7.0 *Giardia* cysts/L requires more than 6.0-log, and
 - > 22.2 viruses/L requires more than 8.0-log
- Critical microbiological and chemical treatment processes require continuous online monitoring with provisions for automatic shutdown if treatment goals for acute health protection are jeopardized. If the wastewater treatment plant (WWTP) effluent (DPR source water) exceeds the drinking water MCL for nitrite/nitrate or any other chemical that has an acute health risk, continuous monitoring and automatic shutdown will be required.
- Depending on the number of treatment barriers, total removal/inactivation provided, and if a real-time method of monitoring is not approved; adequate storage may be required until off-site monitoring results are received before the treated DPR water is sent to distribution.
- Reverse osmosis (RO) membranes will only be given credit as a chemical barrier, unless the TCEQ receives a Challenge Test Report, a Direct Integrity Test (DIT) method and an indirect integrity monitoring method that complies with the Long Term 2 Enhanced SWTR (LT2) is approved by the TCEQ.

Note: Since the spacers and o-rings between the multiple RO elements in a pressure vessel (and periodic movement during operation) can allow passage of pathogens as well as chemicals, consideration of challenge testing a full-scale pressure vessel should be discussed with TCEQ staff.
- The DPR WTP must produce a water with a chemical quality that meets all Chapter 290, Subchapter F requirements, including being noncorrosive, not exceeding the disinfection byproduct maximum contaminant levels (MCLs) in distribution, and meeting future MCLs.

- While the TCEQ will not require compliance with unregulated microbiological and chemical contaminants at this time, monitoring for occurrence may be required.
- Should an unregulated contaminant become regulated in the future, the installation of any necessary treatment to achieve compliance will be required.
- Sanitary separation, including piping and treatment staff, must be provided between wastewater operations, advanced effluent treatment, and finished water facilities.
- Additional operator training may be required.
- At least monthly reporting will be required.
- The DPR will be inspected by TCEQ drinking water staff and possibly by wastewater staff.
- Continuous monitoring of flows and calculation of blend ratio (if a condition of approval) to remain within established limit of reclaimed water fraction.
- Pilot testing for at least ninety (90) days is required for innovative treatment units. The TCEQ will consider circumstances that require expedited testing – such as Full Scale Verification – on a case-by-case basis, for example, drought. Note, during any pilot or full scale testing, no water may be sent to distribution. Pilot testing is an industry standard for evaluating new processes or procedures.
- If IPR is proposed, monitoring is required to ensure that the required detention time is met.
- An authorization permit under Title 30, Texas Administrative Code, Chapter 210 – Class A - will be required. Also, any necessary waste discharge and injection permits must be obtained.
- It must be determined if halting the diversion of current WWTP effluent flow will not affect a downstream water right holder.
- The TCEQ will review the entity's industrial pretreatment program and TCEQ-issued permits/approvals for the industrial users discharging to the WWTP.