

Date: October 25 2016

To: Jeanine Townsend, Clerk to the Board
State Water Resources Control Board, Division of Drinking Water

Subject: "Comment Letter - Report to the Legislature on DPR"



I support Direct Potable Reuse for groundwater recharge as well as for direct delivery to a surface water treatment plant or to a public water system's distribution system. I understand that the three possible types of DPR projects have different risk profiles.

The challenge for the southern part of Santa Clara County (Llagas sub-basin), which is wholly dependent on groundwater, is that there are so many active wells that there is insufficient room for the environmental buffer (i.e., storage, attenuation, and response time) required for Indirect Potable Reuse to recharge the groundwater basin.

Your Expert Panel indicated that for DPR projects, equivalent protection can be addressed by enhancing the reliability of mechanical systems and treatment plant performance. The expectation is that the level of public health protection will be as good as, or better than, what is currently provided by conventional drinking water supplies and IPR projects using groundwater replenishment and surface water augmentation.

A slide in a presentation to the Santa Clara Valley Water District [Water Quality Study Session, Laboratory Services, April 15, 2016] showed the increasing resolution of detection methods.

To give a sense of scale, they made the following comparison:

- PPM ~ 1 minute in 2 years
- PPB ~ 1 second in 32 years
- PPT ~ 1 second in 32,000 years

The takeaway was that "increasingly, our chemists can show something is in the water, but at times the rest of science cannot tell us what its being there, at that level, means."

Clear definitions and measurements for reliability, robustness, redundancy, and resilience are all required to provide the public with an adequate comfort level. Necessary but not sufficient are:

- 1) providing multiple, independent barriers;
- 2) ensuring the independent barriers represent a diverse set of processes;
- 3) using parallel independent treatment trains;
- 4) incorporating frequent monitoring with real-time sensor data to ensure treatment processes are performing properly;
- 5) providing diversion of inadequately-treated water.

Source control (pathogenic microorganisms in raw wastewater, discharge of toxic chemicals and other contaminants to the sewer system) can reduce stress on treatment plant processes but it can be extremely difficult to identify the contamination location(s). In the case of a city like Morgan Hill, responsibility is split between the City, South County Regional Wastewater Authority (a Joint Powers Authority), and Santa Clara Valley Water District (a Special District).

While quality assurance is important on the front end, rigorous response protocols and short response times are required to deal with treatment plant failures or community outbreaks of disease and illness whose origin might be traced back to purified recycled water. Of particular concern are compounds which could cause serious harm to health over short durations of exposure.

Thank you for your consideration,
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