

Appendix F: Independent Advisory Panel Findings

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Joint Powers Agreement Members

Inland Empire
Utilities Agency

Irvine Ranch
Water District

Los Angeles
Department of
Water and Power

Orange County
Sanitation District

Orange County
Water District

West Basin
Municipal Water District

Jeffrey J. Mosher
Executive Director

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November 16, 2012

Ms. Marsi A. Steirer
Deputy Director
Public Utilities Department
City of San Diego
600 B Street, Suite 600
San Diego, CA 92101

Dear Ms. Steirer:

The National Water Research Institute (NWRI) is pleased to transmit this letter on the findings of the Independent Advisory Panel (Panel) to assist the City of San Diego, California, with its Indirect Potable Reuse/Reservoir Augmentation (IPR/RA) Project.

A previous NWRI Panel, formed in 2004, was asked to review various water reuse options in a report prepared by the City. The Panel submitted a final letter report to the City on December 1, 2005. The Panel found that appropriate alternative water reuse strategies for the City of San Diego had been identified. Subsequently, the City elected to proceed with a pilot demonstration project on indirect potable reuse, known as the Water Purification Demonstration Project (herein, referred to as the "Demonstration Project").

Purpose of 2009-2012 Panel

In 2009, the City requested that NWRI form a Panel to provide expert peer review of the technical, scientific, regulatory, and policy aspects of the proposed Demonstration Project under development by the City, based on the findings from the 2004 Panel's final letter report. The purpose of the Demonstration Project was to evaluate the feasibility of using advanced treatment technology to produce purified water from the tertiary effluent of the North City Water Reclamation Plant that can be sent to the expanded San Vicente Reservoir, blended with other raw water, treated in the existing Alvarado drinking water treatment plant, and distributed as potable water.

As part of the Panel process, the Panel was charged with:

- Assisting the City and California Department of Public Health (CDPH) to establish a pathway to move from the draft groundwater regulations to surface water augmentation criteria. This effort includes recommending criteria (or suggested regulations) and verifying the various optional advanced water treatment (AWT) and reservoir strategies that will ensure safe drinking water at consumer taps.
- Assisting the City in developing the Demonstration Project work plan. This effort includes a review of the reservoir modeling studies and performance of the AWT demonstration plant.

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The Panel included 10 members who represented local and national expertise in environmental engineering, water reuse regulations, toxicology, environmental chemistry, limnology, microbiology, and other fields relevant to the project. Six of the Panel members were part of the 2004-2005 Panel.

Panel Activities

The full Panel met three times during the period of 2009-2012 and held three subcommittee meetings on limnology and reservoir operation and two subcommittee meetings on the Advanced Water Purification Facility. Panel members also participated in two working group meetings held by the City on limnology and reservoir operation. Each Panel meeting or subcommittee meeting resulted in a report that was prepared by members of the Panel and submitted to the City. A total of seven reports were prepared by the Panel.

Findings

The City's staff and consultants are to be commended for the positive and thoughtful approach they used to address the many challenges associated with the planning and implementation of the Demonstration Project. The Panel believes that the *Water Purification Demonstration Project Final Report (October 2012)* and supporting documents are responsive to the directives set forth by the City Council. The Panel is also pleased with the responsiveness of the City's staff and consultants to the comments and recommendations made by the Panel. The Panel recognizes that:

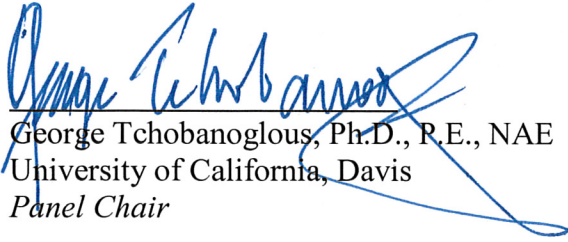
1. The City considered various options for municipal wastewater reuse strategies and selected a proven treatment process scheme for indirect potable reuse that will meet or exceed all health and safety requirements, based on the successful implementation of the Groundwater Replenishment System at the Orange County Water District. The Advanced Water Purification Facility was operated by the City for a period of 13½ months in various modes to assess alternative membrane filtration equipment and reverse osmosis operational configurations. The findings from the Demonstration Project showed that the purified water met or exceeded all of the drinking water requirements and also provided multiple barriers for regulated and unregulated chemical and microbial constituents. The water produced is of a higher quality than any source available to the City of San Diego.
2. With the help of consultants, City staff has undertaken an extensive program of modeling the behavior of both the existing and expanded San Vicente Reservoir, with respect to water quality and hydrodynamics. The model was verified and is an effective tool in simulating future impacts of the addition of purified water to the reservoir. The reservoir provides a minimum of hundred-fold (2 logs) dilution of the purified water added to the reservoir. In fact, for the majority of water quality constituents, the quality of the purified water is better than the water in the reservoir.


3. City staff has met and engaged with the local and state public health and water quality control agencies to ensure that the water produced would meet and exceed all health and safety requirements for all designated uses, including indirect potable reuse. Based on a review of the material provided by the City, CDPH has issued a letter approving the indirect potable reuse project concept. In addition, the Regional Water Quality Control Board San Diego Region (working in conjunction with the State Water Resources Control Board and U.S. Environmental Protection Agency) is also working with the City to develop a plan that will allow for the addition of purified water to the reservoir.
4. City staff has conducted an extensive public outreach program involving a speaker's bureau, community events, facility tours, surveys, and social media. Because of the outreach effort, community support has increased significantly. The City staff has been forthcoming, open, and transparent in describing all aspects of the indirect potable reuse project to the public, including encouraging the public to tour the Advanced Water Purification Facility.

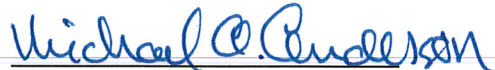
Conclusion


It is the unanimous conclusion of the Panel that the project as described in the *Water Purification Demonstration Project Final Report* will be a landmark development in the acceptance and furtherance of indirect potable reuse and will contribute to the City of San Diego's water portfolio. The proposed project will supplement existing sources and provide a greater degree of independence, thus improving the reliability of the existing water supply. The successful implementation of the full-scale water purification project will facilitate additional potable reuse in San Diego and other communities in California and the United States.

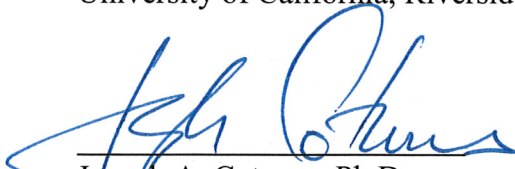
Respectfully submitted by the NWRI Independent Advisory Panel,

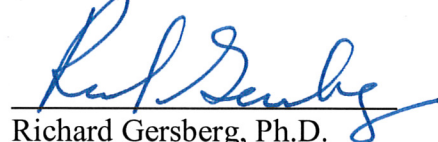

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Panel Chair

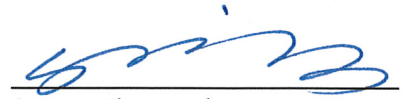

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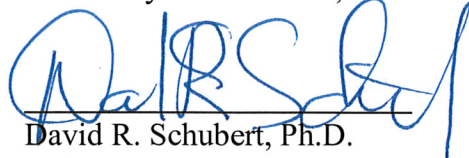

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