



Preparation of a Title 22 Engineering Report for the Recharge of Recycled Water, San Timoteo Watershed Management Authority

Background

The San Timoteo Watershed Management Authority (STWMA) was formed as a Joint Powers Agency (JPA) in January 2001 by the Beaumont-Cherry Valley Water District (BCVWD), the City of Beaumont (Beaumont), the South Mesa Water Company, and the Yucaipa Valley Water District (YVWD).

Under the JPA, the powers of the STWMA include the ability to prepare and implement a comprehensive water resources management plan by means of various programs and projects which may include, but that are not limited to: watershed and basin monitoring; groundwater storage, banking and conjunctive use; stormwater capture and management; recycled water programs and projects; wetlands, wildlife, and open space protection; water quality protection and enhancement; and water conservation and efficiency.

Recycled water use is regulated by the Regional Water Quality Control Board (RWQCB) and the

Department of Health Services (DHS). The TDS and nitrogen levels of recycled water from the YVWD and the city of Beaumont do not meet the proposed basin plan standards for TDS and nitrogen; therefore, these agencies will need to either desalt their recycled water prior to discharge or reuse their recycled water. TDS in the recycled water for these agencies ranges from about 400 mg/L to 500 mg/L. Reuse of recycled water involves some desalting or the use of salt offsets. Offsets are regulatory constructions that provide for the removal or dilution of a constituent. For example, new urban runoff has a TDS concentration on the order of 100 mg/L or less, and a nitrogen concentration less than 1 mg/L. If this new urban runoff can be captured and recharged then it can be used to mitigate (or offset) the TDS and nitrogen effects of the direct use and recharge of recycled water.

The STWMA and the YVWD, acting on their own discretion, have

successfully petitioned the RWQCB to incorporate higher TDS and nitrogen objectives in the 2004 Basin Plan update. These objectives are based on maximum benefit demonstrations (Water Code Section 13241). These actions taken by the STWMA and YVWD create assimilative capacity in the groundwater management units without impairing beneficial uses. This means that the direct use of recycled water and the recharge of recycled and imported water can occur without mitigation for at least 30 years of more.

Recycled Water for Recharge

A project that recharges recycled water for indirect potable reuse either via surface recharge or injection must be permitted by the RWQCB and the permit must be based, in part, on stringent requirements from the DHS.



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Planned recharge projects that use recycled water must comply with the provisions of the Water Code that require a public hearing and a finding by the DHS that the “recharge will not impair the quality of water in the receiving aquifer as a source of water supply for domestic purposes.” In addition, any domestic water system that may have some of the supply provided by an indirect reuse project must apply for an amended drinking water supply permit as required by the California Health and Safety Code, specifically Section 116550 to reflect the change in the “source of supply”.

Direct Injection of Recycled Water

Full-scale reverse osmosis is required in any area where the groundwater has been designated by the RWQCB as appropriate for municipal use (MUN). All groundwater basins in the STWMA area have the MUN designation. The draft regulations do not specifically limit the percentage of water that can be injected, but they do require that the recycled water contribution in any domestic well cannot exceed 50 percent. Injection cannot occur within 2000 feet of an existing domestic well and the residence time in the ground must be a minimum of nine months. The draft regulations require extensive background water quality monitoring for all of

the drinking water standards as well as some unregulated priority pollutants and endocrine disruptors.

They also may require compliance with the “Public Health Goals” as adopted by CalEPA

Office of Environmental Health Hazard Assessment. The biggest unknown in the proposed regulations is the total nitrogen level that will be required in the recharged water. The definition of “total nitrogen” in the draft regulations is the summation of ammonia, nitrite, nitrate, and organic nitrogen and the appropriate total nitrogen must be between 1 to 10 mg/L with the actual concentration being project and site specific.

Wildermuth Environmental, Inc. (WEI) was retained by the Beaumont Cherry Valley Water District and the City of Beaumont to conduct four key water resources projects, which include the preparation of a Title 22 Engineering Report for the recharge of recycled water to improve ground water quality and increase water availability in the Beaumont area. The District Board of Directors and the City Council unanimously approved WEI for the project and formed a project committee within the San Timoteo Watershed Management Authority to oversee the project.

Program Element Phase 1

Program Element Phase 1 of this program element has two components, which are currently in progress. The first component



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includes a high priority project to implement the recycled water and imported water portion of BCVWD's "Surface Water Capture for Little San Geronio Creek and Other Locations" project. To enhance the basin's water supplies, this project integrates the water supply reliability, water recycling, groundwater management, imported water recharge and stormwater capture management strategies with the wetlands, recreation, public access and flood control management strategies.

This is being done by developing two new areas along upper Noble Creek. The first area includes an imported water supply delivery connection, and a recycled water storage facility and pump station, a wetlands mitigation area and a natural denitrification facility in and adjacent to a new recreation area (with recreation, picnic areas and trails) and debris basins that expands Bogart Park.

The second area includes recharge facilities with percolation ponds that has a community park with outdoor/nature areas for picnics, and pedestrian and equestrian

trails around the project facilities. This project is also very important for implementation of the STWMP Program Element 4 – The Development and Implementation of a Salt Management Program, as it will contribute high quality stormwater to help mitigate state project and recycled water recharge.

The second component of Phase 1 of this program element includes a Phase 1 Investigation to develop a master plan for operation and facilities to manage surface water discharge and recharge in the STWMA area and includes: a two-year field program; development and application of modeling tools to characterize future

surface water quality problems and to analyze solutions; and the development of a two-prong stormwater and dry-weather discharge management strategy.

The two-prong approach includes a regional stormwater management program that included a master plan of channel works, wetlands, and stormwater retention/recharge facilities; and a localized source control and stormwater management program that was developed with and adopted by local agencies with jurisdiction over land use planning.

Objective of the Project

The objective of this task order is to prepare a Title 22 Engineering Report for planned groundwater recharge projects that will use recycled water.



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