INFORMATION SHEET

ORDER NO. R5-2016-XXXX
TESORO VIEJO MASTER MUTUAL WATER COMPANY
TESORO VIEJO WASTEWATER TREATMENT FACILITY
MADERA COUNTY

Background

The Tesoro Viejo Master Mutual Water Company (Company) in conjunction with Tesoro Viejo, Inc. submitted a Report of Waste Discharge (RWD), dated 19 August 2015, and applied for Waste Discharge Requirements (WDRs) to discharge tertiary disinfected wastewater from a new wastewater treatment facility to be constructed for the proposed Tesoro Viejo Master Planned Community (Development).

The Development is a proposed mixed use master-planned community in southeastern Madera County consisting primarily of residential units with some minor areas designated for institutional, recreational, commercial, and light industrial uses.

As described in the RWD, Tesoro Viejo, Inc., the project developer, will undertake development obligations for the Development including construction of the wet utilities related to the sewer collection system and proposed wastewater treatment facilities. Tesoro Viejo, Inc., shall transfer ownership and operation of these facilities to the Tesoro Viejo Master Mutual Water Company at the time of start-up.

The Tesoro Viejo Master Mutual Water Company (hereafter Discharger), created in 2006, will be the agency responsible for providing potable water along with wastewater collection, treatment, and disposal services for the Development, and will have a long-term contractual relationship with Tesoro Viejo, Inc., to provide water and sewer service to the new development as it is built.

Wastewater Treatment and Disposal

The wastewater treatment facility (WWTF) for the proposed Development will be constructed in phases to allow for expansion as the Development grows. The WWTF will provide tertiary treatment with ultraviolet (UV) disinfection and produce Title 22 recycled water for unrestricted reuse. These WDRs will regulate the WWTF for the first three phases identified as Phase A, Phase B, and Phase 1. Based on projections, the Phase I WWTF will meet wastewater treatment demands for the Development till 2022, which will be comprised of approximately 1,800 residential units, and some commercial and public facilities.

According to the RWD, the WWTF will include an influent pump station and head works, flow equalization, fine screening, advanced biological treatment, an anoxic tank to provide for nitrogen reduction, UV disinfection, solids handling, and recycled water and emergency storage. For the first two phases, Phase A and Phase B, the WWTF will consist of membrane bioreactor (MBR) package plants with average maximum dry weather design flows of 0.25 million gallons per day (mgd) and 0.5 mgd, respectively. When flows approach the capacity for the Phase B WWTF, construction will begin on Phase I, which will consist of a permanent Membrane Bioreactor (MBR) system with an anoxic tank, swing air tank, aerobic tank, post-anoxic tank, and a 0.4 million gallon flow equalization tank.

After treatment and disinfection, the effluent will be discharged to recycled water storage ponds prior to reuse. The ponds will incorporate a 50 mil HDPE liner. For Phase A and Phase B recycled water storage will be provided by one pond with a designed capacity of 1.56 million gallons. There will also be a second lined pond with a capacity of 0.84 million gallons used for emergency storage of recycled water that does not meet Title 22 requirements (off-spec recycled water). After construction of the Phase 1 wastewater treatment system, all off-spec recycled water will be returned to the headworks of the WWTF for further treatment and the emergency storage pond will be used for storage of recycled water bringing the total available storage capacity to 2.4 million gallons.

The disinfected tertiary treated effluent will be used for irrigation of crops and landscaping within the Development and on land currently owned by Rio Mesa Holdings, LLC. Together these properties make up the "Use Areas" for recycled water. The recycled water will be applied at agronomic rates. According to the RWD, for Phase A the Development will have approximately 184 acres of land available for irrigation with recycled water; for Phase B the Development will have approximately 240 acres of land available for irrigation with recycled water; and for Phase 1 the Development will have approximately 463 acres of land available for irrigation with recycled water.

Because this will be a new WWTF, there is no existing effluent data available. Anticipated effluent quality for the WWTF based on the proposed treatment process and similar existing WWTFs is presented below:

Parameter/Constituent	Units	Effluent Quality
pH	pH units	6.5 – 8.5
Electrical Conductivity (EC)	umhos/cm	< 600
Ammonia as nitrogen	mg/L	<1
Biochemical Oxygen Demand (BOD)	mg/L	< 10
Total Suspended Solids (TSS)	mg/L	< 10
Chloride	mg/L	< 40
Sodium	mg/L	< 60
Total Dissolved Solids (TDS)	mg/L	< 400
Total Nitrogen (TN)	mg/L	<10

Solids

Wasted sludge from the treatment process will be stored in sludge holding tank(s), and hauled off-site for further treatment and disposal at another WWTF in the area. During construction of Phase 1, an integrated sludge storage tank will be included in the main structure for the treatment system.

Source Water: Source water for the Development will be primarily surface water from the San Joaquin River, with an EC of about 20 to 145 umhos/cm, TDS of about 37 mg/L, and nitrate as nitrogen (NO_3-N) of <1 mg/L.

Groundwater Conditions

According to the Department of Water Resources Groundwater Elevation Maps (Spring 2010) first encountered groundwater in the vicinity of the proposed development occurs at about 200 feet below ground surface (bgs). Regional flow in the area is to the southwest away from the San Joaquin River.

The RWD describes a groundwater investigation to evaluate groundwater depth, flow direction, and water quality in the vicinity of the Development and proposed WWTF and recycle Use Areas. The groundwater investigation identified a shallow perched zone at depths ranging from about 12 to 40 feet bgs in the northern portion of the Development likely due to recharge from Little Table Mountain. Groundwater flow direction in this shallow zone is to the south, slightly different from the deeper regional aquifer. Groundwater elevation in this shallow zone is higher in the northern portion of the Development, but appears to drop and likely merges with deeper groundwater as the distance increases down-gradient of Little Table Mountain.

As part of this investigation, groundwater samples were collected from several wells installed within the proposed Development. Based on the groundwater investigation, groundwater beneath the Development is of good quality. Shallow groundwater in the northern half of the site is of slightly poor quality with an average EC of about 557 umhos/cm, TDS of about 332 mg/L, and nitrate as nitrogen of about 8.5 mg/L. However, the WWTF and recycled Use Areas on the southern half of the Development, where this shallow perched zone was not encountered, was of slightly better quality with an EC of about 280 umhos/cm, TDS of about 213 mg/L, and nitrate as nitrogen of about 6.4 mg/L.

With the proposed treatment and nitrification/denitrification to reduce nitrogen concentrations in the effluent to <10 mg/L, storage of wastewater in lined ponds and application at agronomic rates the discharge from the proposed WWTF is not expected to significantly degrade groundwater quality. Therefore, groundwater monitoring is not being required at this time.

Basin Plan, Beneficial Uses, and Regulatory Considerations

The WWTF and recycled Use Areas lie within the Berenda Hydrologic Area (545.3) of the San Joaquin Valley Floor Hydraulic Unit. Local drainage is to the San Joaquin River between Friant Dam and the Mendota Pool.

The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition*, revised June 2015 (Basin Plan) designates beneficial uses, establishes numerical and narrative water quality objectives, contains implementation plans and policies for protecting all waters of the basin, and incorporates by reference plans and policies of the State Water Board. Beneficial uses often determine the water quality objectives that apply to a water body. The receiving water for this discharge is groundwater. The beneficial uses of groundwater in the

area are municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.

Antidegradation
State Water Board Resolution 68-16, the Statement of Policy with Respect to Maintaining High Quality of Waters in California (Anti-Degradation Policy), requires the regional water boards to maintain high quality waters of the State until it is demonstrated that any change in quality will not result in water quality less than that described in State and Regional Water Board policies or exceed water quality objectives, will not unreasonably affect beneficial uses and is consistent with the maximum benefit to the people of the State.

Degradation of groundwater by some of the typical waste constituents of concern (e.g., EC and nitrate) released with discharge from a municipal wastewater utility after effective source control, treatment, and control is consistent with maximum benefit to the people of the State. The technology, energy, and waste management advantages of a municipal utility service far exceed any benefits derived from a community otherwise reliant on numerous concentrated individual wastewater systems, and the impacts on water quality will be substantially less. The economic prosperity of valley communities and associated industry is of maximum benefit to the people of the State, and therefore provides sufficient reason to accommodate planned growth and allow for limited groundwater degradation.

As discussed in the Findings in the WDRs the discharge as authorized by this Order may cause some minor groundwater degradation, but is not expected to affect present and anticipated future beneficial uses or result in groundwater quality that exceeds water quality objectives. The Discharger provides or will provide as a condition of this Order treatment and control measures intended to minimize degradation to the extent feasible. This Order establishes groundwater limitations that allow some degradation, but that will not unreasonably threaten present and future anticipated beneficial uses of groundwater or result in groundwater quality that exceeds water quality objectives set forth in the Basin Plan.

Title 27
Title 27 of the California Code of Regulations, section 20005 et seq (Title 27) contains regulations to address certain discharges to land. Unless exempt, the release of designated waste is subject to full containment pursuant to Title 27 requirements. Title 27 Section 20090(a) exempts discharges of domestic sewage, which are regulated by WDRs; and Section 20090(b) exempts discharges of designated waste to land from Title 27 containment standards and other Title 27 requirements provided the following conditions are met:

a. The applicable regional water board has issued waste discharge requirements, or waived such issuance;

b. The discharge is in compliance with the applicable basin plan; and

c. The waste is not hazardous waste and need not be managed according to Title 22, CCR, Division 4.5, Chapter 11, as a hazardous waste.

The discharge meets the above requirements and is therefore exempt from Title 27.

CEQA
The proposed WWTF was reviewed as part of the Tesoro Viejo Specific Plan and Revised Environmental Impact Report (REIR), which was certified by the Madera County Board of Supervisors in accordance with the California Environmental Quality Act (CEQA) on 5 November 2012 (SCH #2006111123).

Acting as a responsible agency pursuant to CEQA, Central Valley Water Board staff reviewed the Final REIR and concurred that the project as proposed will not have a significant impact on water quality. Further, this Order includes effluent limitations for flow, total nitrogen, BOD, TSS, and total coliform organisms, and sets specific specifications for turbidity and operation of the UV disinfection system. Compliance with these conditions and the associated monitoring and reporting program will ensure that any impacts to water quality are less than significant.

Proposed Order Terms and Conditions

Discharge Prohibitions, Effluent Limitations, Discharge Specifications, and Provisions
The proposed Order would prohibit discharge to surface waters and surface water drainage courses.

The proposed Order sets effluent limits for flow, BOD, TSS, total nitrogen, and total coliform organisms. In addition, the proposed Order sets specific specifications for turbidity and operation of the UV disinfection system.

The proposed Order sets groundwater limitations at the primary and recommended secondary MCLs for nitrate as nitrogen, and electrical conductivity; total coliform organisms; and the constituents identified in Title 22 of the California Code of Regulations, for which MCLs exist.

The proposed Order also requires submittal of a copy of the final approved Title 22 Engineering Report with approval letter from the State Water Board, Division of Drinking Water (DDW) and a Notice of Intent (NOI) for coverage under the Water Quality Order 2014-0090-DWQ, *General Waste Discharge Requirements for Recycled Water Use* (Recycling General Order) or any subsequent revisions, prior to the start-up of the WWTF and initiation of wastewater recycling operations.

Monitoring Requirements
Section 13267 of the Water Code authorizes the Central Valley Water Board to require monitoring and technical reports as necessary to investigate the impact of waste discharges on waters of the State. Water Code section 13268 authorizes assessment of administrative civil liabilities to address non-compliance, when appropriate.

The proposed Order includes influent, effluent, source water, pond, and sludge monitoring. This monitoring is necessary to evaluate the potential for degradation resulting from the discharge.

Reopener

The conditions of discharge in the proposed Order were developed based on currently available technical information and applicable water quality laws, regulations, policies, and plans, and are intended to assure conformance with them. The proposed Order would set limitations based on the information provided thus far. If applicable laws and regulations change, or once new information is obtained that will change the overall discharge and its potential to impact groundwater, it may be appropriate to reopen the Order.